THE ROLE OF METACOGNITIVE KNOWLEDGE AND METACOGNITIVE LEARNING STRATEGIES IN TERTIARY LEVEL EFL STUDENTS' LANGUAGE LEARNING

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(The Role of Metacognitive Knowledge and Metacognitive Learning Strategies in Tertiary Level EFL Students' Language Learning)

YÜKSEK LİSANS TEZİ

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İmza

Gökhan ÖZTÜRK

ÖZET

YÜKSEK LİSANS TEZİ

ÜSTBİLİŞSEL BİLGİ VE ÜSTBİLİŞSEL ÖĞRENME STRATEJİLERİNİN İNGİLİZCE'Yİ YABANCI DİL OLARAK ÖĞRENEN ÜNİVERSİTE ÖĞRENCİLERİNİN DİL ÖĞRENİMİNDEKİ ROLÜ

Gökhan ÖZTÜRK

2014, 80 sayfa

Bu çalışmanın amacı, İngilizce Öğretmenliği Bölümü'nde okuyan birinci sınıf öğrencilerinin üstbiliş beceri seviyelerini Üstbiliş Becerileri Ölçeği ile belirlemek, öğrencilerin üstbiliş beceri seviyelerindeki farklılıkları incelemek ve üstbilişsel bilgi ve üstbilişsel strateji kullanımının öğrencilerin İngilizce'deki başarısına katkısını ortaya koymaktır. Öğrencilerin üstbiliş beceri seviyelerini etkilediği düşünülen bağımsız değişkenler; öğrenim gördükleri üniversiteler, öğretim programları, yaş ve cinsiyetleri, okudukları liseler, üniversitede hazırlık eğitimi alma durumları, İngilizce'yi öğreniyor olmaktan memnun olma durumları, liseye başladıklarındaki İngilizce seviyeleri, sahip olduklarını düşündükleri şu anki İngilizce seviyeleri, belirli derslere katılım durumları (Bağlamsal Dilbilgisi-I, İleri Okuma ve Yazma-I, Dinleme ve Sesletim-I, Sözlü İletişim Becerileri-I) ve bu derslerin birinci dönemdeki vize ve final ortalamalarından oluşmaktadır. Bu değişkenler ve öğrencilerin üstbiliş beceri seviyeleri arasındaki ilişkiler analiz edilmiştir.

Çalışmanın evreni, Türkiye'deki devlet üniversitelerinde İngilizce Öğretmenliği Bölümlerinde okuyan bütün birinci sınıf öğrencilerinden oluşmaktadır. Örneklem olarak, İngilizce Öğretmenliği Bölümü'nün hem birinci hem de ikinci öğretim programlarını sunan dört üniversitenin bütün birinci sınıf öğrencileri belirlenmiştir: Atatürk Üniversitesi, Akdeniz Üniversitesi, Necmettin Erbakan Üniversitesi (önceki Konya Üniversitesi) ve Erciyes Üniversitesi. Araştırma 2011-2012 akademik yılının bahar yarıyılında yapılmıştır. Betimsel araştırma yöntemi kullanılmıştır. 15 devlet üniversitesinden dört tanesi gelişigüzel örnekleme ile seçilmiştir. Seçilen dört devlet üniversitesinden, 430 gönüllü birinci sınıf öğrencisi çalışmaya katılmıştır. Veriler, Üstbiliş Becerileri Ölçeği ve bağımsız değişkenler anketi ile toplanmış ve t testi, Tek Yönlü ANOVA, Tukey'in Post Hoc testi ve Pearson Korelasyon Katsayısı kullanılarak analiz edilmiştir.

Analizler Bağlamsal Dilbilgisi-I, İleri Okuma ve Yazma-I, Dinleme ve Sesletim-I derslerindeki başarı ile öğrencilerin üstbiliş beceri seviyeleri arasında istatistiksel olarak anlamlı bir ilişkinin olduğunu, Sözlü İletişim Becerileri-I dersindeki başarı ile öğrencilerin üstbiliş beceri seviyeleri arasında ise istatistiksel olarak anlamlı bir ilişkinin olmadığını göstermiştir. Çalışma, öğrencilerin İngilizce başarıları ile üstbiliş beceri seviyeleri arasında pozitif yönde anlamlı bir ilişkinin olduğunu büyük ölçüde kanıtlamıştır. Buna ek olarak, bağımsız değişkenlerden olan cinsiyet farklılıklarının ve öğrencilerin Dinleme ve Sesletim-I ve İleri Okuma ve Yazma-I derslerine katılım durumlarının, üstbiliş beceri seviyeleri ile pozitif yönde ilişkili olduğu bulunmuştur. Ancak, diğer bağımsız değişkenler ve öğrencilerin üstbiliş beceri seviyeleri arasında pozitif yönde anlamlı bir ilişkinin olmadığı tespit edilmiştir.

Anahtar Kelimeler: Üstbiliş Becerileri, İngilizce Başarısı, Bağımsız Değişkenler

ABSTRACT

MASTER'S THESIS

THE ROLE OF METACOGNITIVE KNOWLEDGE AND METACOGNITIVE LEARNING STRATEGIES IN TERTIARY LEVEL EFL STUDENTS' LANGUAGE LEARNING

Gökhan ÖZTÜRK

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The purpose of this study was to determine the level of metacognitive skills acquired by college freshmen in the Department of English Language Teaching by means of Metacognitive Skills Scale, to examine the differences in the level of the students' metacognitive skills and to clarify the contribution of metacognitive knowledge and metacognitive strategy use in these students' achievements in English. The independent variables that were thought to affect the students' levels of metacognitive skills consisted of the universities that the students attended, the teaching programs, the students' ages and genders, the high schools that the students attended, their participation in a preparatory program at university, their satisfaction with learning English as a foreign language, their levels of English when they started high school, their present English levels according to self-evaluation, their attendance to certain courses (Contextual Grammar-I, Advanced Reading and Writing-I, Listening and Pronunciation-I, Oral Communication Skills-I) and the mean of their scores on these courses' midterms and their final scores in the first term. The associations among these variables and the students' levels of metacognitive skills were analyzed.

The target population of the study consisted of all college freshmen of the Department of English Language Teaching at Turkish state universities. The accessible population was identified as all college freshmen of the Department of English Language Teaching at four universities offering both daytime and evening programs: Atatürk University, Akdeniz University, Necmettin Erbakan University (previously known as Konya University) and Erciyes University. The research was carried out in the spring semester of the 2011-2012 academic year. A descriptive research method was used. Four state universities out of 15 were selected by cluster random sampling. For the four selected state universities, 430 college freshmen volunteers were involved in the study. Data were collected through the Metacognitive Skills Scale and the independent variable questionnaire, and analyzed by using t-test, One-Way Analysis of Variance, Tukey's Post Hoc Test and Pearson correlation coefficients.

The analyses revealed that there was no statistically significant correlation between the students' levels of metacognitive skills and their achievement in the Oral Communication Skills-I course, while there was a statistically significant correlation between the achievement in the courses of Contextual Grammar-I, Advanced Reading and Writing-I, Listening and Pronunciation-I and the students' levels of metacognitive skills. The study demonstrated that there is a significant positive correlation between English language achievement of students and their levels of metacognitive skills on a large scale. In addition, those belonging to the independent variables such as gender differences and the students' attendance to Listening and Pronunciation-I and Advanced Reading and Writing-I courses were found to be positively related to the students' levels of metacognitive skills. However, it was found that there were no significant positive associations between other independent variables and the students' levels of metacognitive skills.

Key Words: Metacognitive Skills, English Achievement, Independent Variables

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LIST OF ABBREVIATIONS

CT: Critical Thinking

DELT: Department of English Language Teaching

EFL: English as a Foreign Language

***F*:** Frequency

F: Statistic for Ratio of Variances

FL: Foreign Language

GEND: Gender

Int. Level: Intermediate Level

L2: Second Language

LLSs: Language Learning Strategies

MK: Metacognitive Knowledge

MLSs: Metacognitive Learning Strategies

MSs: Metacognitive Skills

MSS: Metacognitive Skills Scale

n: Sample Size

p: Proportion

r: Correlation Coeffcient

SD: Standard Deviation

t: Test for Equal Means

$\bar{x}$: Mean

CHAPTER ONE

1. INTRODUCTION

1.1. Background to the Study

In his message to the Educational Conference in 1947, Quaid-e-Azam said that English had taken the place of French as a dominant world language during the last three or four decades, and the new development of basic English giving us the secrets of Western Science and Culture was expected to continue (pp 11-12). As Azam underlines, English has maintained its importance as an international language since then and become the dominant global language.

In Turkey, the status of English is not different. Knowledge of English is an indispensable prerequisite in almost every field of life. A growing number of primary, secondary and high schools and universities in which the medium of instruction is predominantly English show the popularity and the high prestige of the English language in educational institutions of our country. As a developing country, Turkey has international cultural and commercial relations which require successful English communication skills.

Accordingly, learning English is a must, and how to learn English effectively and efficiently has always been an important matter of research subject by many researchers.

Liang (2009) suggests that previous research about foreign language learning has reported that appropriate use of language learning strategies (LLSs) plays an important role in the improvement of overall Second Language (L2) or Foreign Language (FL) proficiency as well as specific language skills (p. 199).

For Brantmeier (2002), "In general terms, learner strategies are the cognitive steps learners use to process second language input. These cognitive procedures include retriewing and storing new input" (p. 1).

According to Cohen (1996), O'Malley & Chamot (1990) and Oxford (1990), there are four categories of strategies commonly used: cognitive, metacognitive, social and affective (as cited in Alvarez, Beaven & Garrido, 2008, p. 182).

Gascoigne (2008) defines metacognitive strategies as indirect strategies used to observe the self while occupied with doing an activity such as reading (p. 72).

According to Kazu & Ersözlü (2008), what is essential is to train critically thinking individuals who are aware of their own metacognitive strategies, cognitive processes and abilities; not to educate individuals who learn everything by heart and express exactly what they have learned.

Although there have been a series of studies concerning the effect of learning strategy use on achievement, there are not enough empirical studies to prove that metacognitive knowledge (MK) and MLSs might contribute to FL learning.

In this context, the main focus of this study is to highlight the role of MK and MLSs in EFL students' language learning achievement. The target group of this research is composed of university students who should already possess the metacognitive skills (MSs) due to their wide learning experiences.

1.2. Purpose of the Study

The purpose of this study was to determine the level of MSs acquired by college freshmen in the Department of English Language Teaching (DELT) by means of the Metacognitive Skills Scale (MSS) developed by Altındağ (2008) and to examine the effectiveness of MK and MLSs in FL learning of these students in terms of different variables.

The research has the following findings:

(1) To examine if there is a statistically significant correlation between the students' levels of MSs and their achievements in English.

(2) To examine if there is a statistically significant correlation between the students' levels of MSs and the universities that the students attended.

(3) To examine if the students' levels of MSs vary across the teaching programs; daytime and evening classes.

(4) To examine if the students' levels of MSs vary across age groups.

(5) To examine if the students' levels of MSs vary across gender (GEND).

(6) To examine if there is a statistically significant correlation between the students' levels of MSs and the high schools that they attended.

(7) To examine if there is a statistically significant correlation between the students' levels of MSs and their participation in a preparatory program at university.

(8) To examine if there is a statistically significant correlation between the students' levels of MSs and their satisfaction with learning English as a FL.

(9) To examine if there is a statistically significant correlation between the level of MSs and the students' levels of English when they started high school.

(10) To examine if there is a statistically significant correlation between the students' levels of MSs and their present English levels according to self-evaluation.

(11) To examine if there is a statistically significant correlation between the students' levels of MSs and their attendance to certain courses.

1.3. Significance of the Study and Problem Situation

In Turkey, most of the university students focus on exam scores rather than learning, fail to recognize the value of what they are learning, and just want to complete their education in a very short time. There is a lack of awareness about MLSs. This is what creates the problem.

Many studies support the idea that (as cited in Dawson, 2008, p. 7) "Students who have been taught metacognitive (self-regulated learning) skills learn better than the students who have not been taught these skills. It is possible to produce better learners by teaching MSs" (Borkowski, Carr & Pressely, 1987; Bransford, Sherwood, Vye & Rieser, 1986; Carr, Kurtz, Schneider, Turner & Borkowski, 1989; Garner, 1990; Hascher & Oser, 1995; Mace, Belfiore & Hutchinson, 2001; Pressley & Ghatala, 1990; Zimmerman & Schunk, 2001).

This study may enable tertiary level EFL students to be aware of their levels of MSs. According to these results, necessary precautions may be taken to fill this gap by educators. In this way, the students may become aware of their own MK and learn how to control their learning. They may be able to use these MSs in every part of their learning life, especially in lessons.

Kiewra (2002) mentioned the old adage "If you give a man a fish, you feed him for a day, but if you teach him how to fish, you feed him for a life time" to call attention to teaching students how to learn to help them learn now and for a life time (as cited in Akyol, 2009, p. 4).

In this context, this study is important in terms of teaching students 'how to learn', and 'lifelong learning'. It may be quite beneficial in helping students become more aware of their own MK as well as their own strategies for learning and thinking. Hopefully, this study may also enable teachers to determine which learning strategies their students use in learning.

In 2007, Özcan demonstrated that the teachers whose MSs are developed use strategies that may improve the students' MSs in their lessons.

Thus, the students' levels of MSs may also reveal to what extent their teachers use MLSs in the lessons and teach these to their students. In this way, teachers may also become aware of their levels of MK.

The central message is that students can enhance their learning by becoming aware of their own thinking as they read, write, listen and speak. Teachers can directly promote this awareness by informing students about effective metacognitive strategies and discussing cognitive and motivational characteristics of thinking.

1.4. Assumptions and Limitations

1.4.1. Assumptions

1. The administration of MSS and the independent variable questionnaire was done under standard conditions.

2. The items of MSS and the independent variable questionnaire were responded sincerely by the participants of the study.

1.4.2. Limitations of the study

1. The population of the study was limited to only state universities offering both daytime and evening programs of the DELT.
2. This study was limited to college freshmen.
3. This study was limited to English courses.
4. This study was limited to the 2011-2012 academic year Spring semester of 1st year English curriculum and the findings of the research were limited to the answers of college freshmen as well as the data collection tool of "MSS".
5. The characteristics of the participants such as motivation and intelligence might have affected their cognitive and metacognitive strategy use and English achievement.
6. The study was limited by its reliance on self-reported data.
7. The characteristics of English teachers might have affected cognitive and metacognitive strategy use and English achievement of the participants.

1.5. Null Hypotheses

H01: There is a significant positive correlation between the students' levels of MSs and their achievements in English.

H02: There is not a significant positive correlation between the level of MSs and the universities that the students attended.

H03: The students' levels of MSs do not vary across the teaching programs; daytime and evening classes.

H04: The students' levels of MSs vary across age groups.

H05: The students' levels of MSs vary across GEND.

H06: There is a significant positive correlation between the students' levels of MSs and the high schools that they attended.

H07: There is a significant positive correlation between the students' levels of MSs and their participation in a preparatory program at university.

H08: There is a significant positive correlation between the students' levels of MSs and their satisfaction with learning English as a FL.

H09: There is a significant positive correlation between the students' levels of MSs and their levels of English when they started high school.

H10: There is a significant positive correlation between the students' levels of MSs and their present English levels according to self-evaluation.

H11: There is a significant positive correlation between the students' levels of MSs and the students' attendance to certain lessons.

1.6. Definition of Important Terms

For a better understanding for the reader, some important definitions have been given below:

Metacognitional awareness level: Metacognition score of students obtained from MSS.

Metacognitive knowledge: Knowledge acquired as a result of metacognitive experiences.

Learning strategies: Learning ways determined by executive function during every learning.

Language learning achievement: Achievement level determined by the universities that the students attended.

CHAPTER TWO

2. THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1. Language Learning Strategies

According to Williams and Burden (1997), the developments in cognitive psychology had an effect on much of the research carried out in the field of LLSs, the research of which began in the 1960s (p. 149). Rubin and Wenden (1987) stress that for many researchers, "investigating good language learners' views of how to learn a L2 or a FL or monitoring what they do while learning a L2 or FL" has been a primary matter (p. 19). In 1966, The Method of Inference in Foreign Language Study, the first attempt on learner strategies, was published by Aaron Carton. Following Carton, in 1971, Rubin began doing investigations on the LLSs of successful learners and believed the fact that these strategies could be used for unsuccessful learners when determined. According to Rubin (1975), the strategies can be classified with regards to processes that they contribute directly or indirectly to language learning. The strategies which are used by language learners while learning a FL were studied by many such as Wong-Fillmore (1976), Tarone (1977), Naiman, Frohlich, Stern and Todesco (1978), Bialystok (1979), Cohen and Aphek (1981), Wenden (1982), Chamot and O'Malley (1987), Politzer and McGroarty (1985), Conti and Kolsody (1997) (as cited in Hismanoğlu, 2000, p. 1).

2.1.1. Definition of a Language Learning Strategy

According to Stern (1992), the concept of a learning strategy is dependent on the assumption that learners consciously engage in activities to achieve certain goals and learning strategies can be regarded as broadly conceived intentional directions and learning techniques (p. 261). Cohen states (1990) the following:

> Learning strategies are processes which are consciously selected by learners and which may result in actions taken to enhance the learning or use of

> a second or foreign language through the storage, retention, recall, and application of information about that language. (p. 4)

According to Richards and Platt (1992), learning strategies are "intentional behavior and thoughts used by learners during learning so as to better help them understand, learn, or remember new information" (p. 209). Faerch Claus and Kasper (1983) state that a learning strategy is "an attempt to develop linguistic and sociolinguistic competence in the target language" (p. 67). Furthermore, Wenden and Rubin (1987) define learning strategies as "... any sets of operations, steps, plans, routines used by the learner to facilitate the obtaining, storage, retrieval, and use of information" (p. 19). For this reason, it is evident that learning strategies are special ways of using information that contribute to permanent learning, recalling, comprehension and retention of the information.

2.1.2. Classifications of Language Learning Strategies

According to Hismanoğlu (2000), many scholars such as Wenden and Rubin (1987), O'Malley and his colleagues Chamot, Stewner-Manzanares, Kupper and Russo (1985), Oxford (1990), Stern (1992) and Ellis (1994) have classified LLSs some of which are handled below: (p. 2).

2.1.2.1. Rubin's (1987) Classification of Language Learning Strategies

Rubin, who worked hard for the field of LLSs, divided strategies into two as strategies contributing directly to learning and those contributing indirectly to learning. Direct strategies consist of metacognitive and cognitive strategies, and indirect strategies consist of communicative and social strategies. Rubin suggests that three types of strategies used by learners that contribute either directly or indirectly to language learning are learning strategies, communication strategies and social strategies (pp. 15-30).

Learning strategies are divided into two main types which contribute directly to the development of the language system constructed by the language learner:

- Cognitive Learning Strategies

- Metacognitive Learning Strategies

Cognitive strategies refer to the steps or operations used in learning or problem-solving which include direct analysis, transformation, or synthesis of learning materials. Rubin categorized the six main cognitive learning strategies that contribute directly to language learning as:

- Clarification / Verification
- Guessing / Inductive Inferencing
- Deductive Reasoning
- Practice
- Memorization
- Monitoring

Metacognitive strategies are used to monitor, control or self-direct language learning. They involve various processes such as planning, prioritising, setting goals, and self-management**.**

Communication strategies are less directly related to language learning because their stress is on the process of joining conversation and getting meaning across or clarifying what the speaker intended. Communication strategies are used by speakers when faced with some troubles related with their communication and conversation or when confronted with misunderstanding by a co-speaker. To maintain the conversation, using one's linguistic or communicative knowledge is a usual communication strategy.

According to Rubin and Wenden (1987), social strategies are those activities learners take part in and during which have the opportunity of practising their knowledge. Although these strategies present exposure to the target language, they contribute indirectly to learning since they do not lead directly to obtaining, storing, retrieving, or using language.

2.1.2.2. Oxford's (1990) Classification of Language Learning Strategies

According to Oxford (1990), learning strategies are "specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more

effective, and more transferrable to new situations" (p. 8). Oxford divided language learning strategies into two main categories, direct and indirect strategies, which are also subdivided into six groups. Direct strategies comprise memory, cognitive and compensation strategies. Indirect strategies include metacognitive, affective and social strategies. In Oxford's system, metacognitive strategies enable learners to control their own learning. Affective strategies are related with the learner's emotional requirements such as confidence; social strategies assist learners to manage increased interaction with the target language. Oxford defines cognitive strategies as "the mental strategies learners use to make sense of their learning, memory strategies are those used for storage of information, and compensation strategies help learners to overcome knowledge gaps to continue the communication". Oxford's (1990) taxonomy of LLSs is shown below: (p. 17).

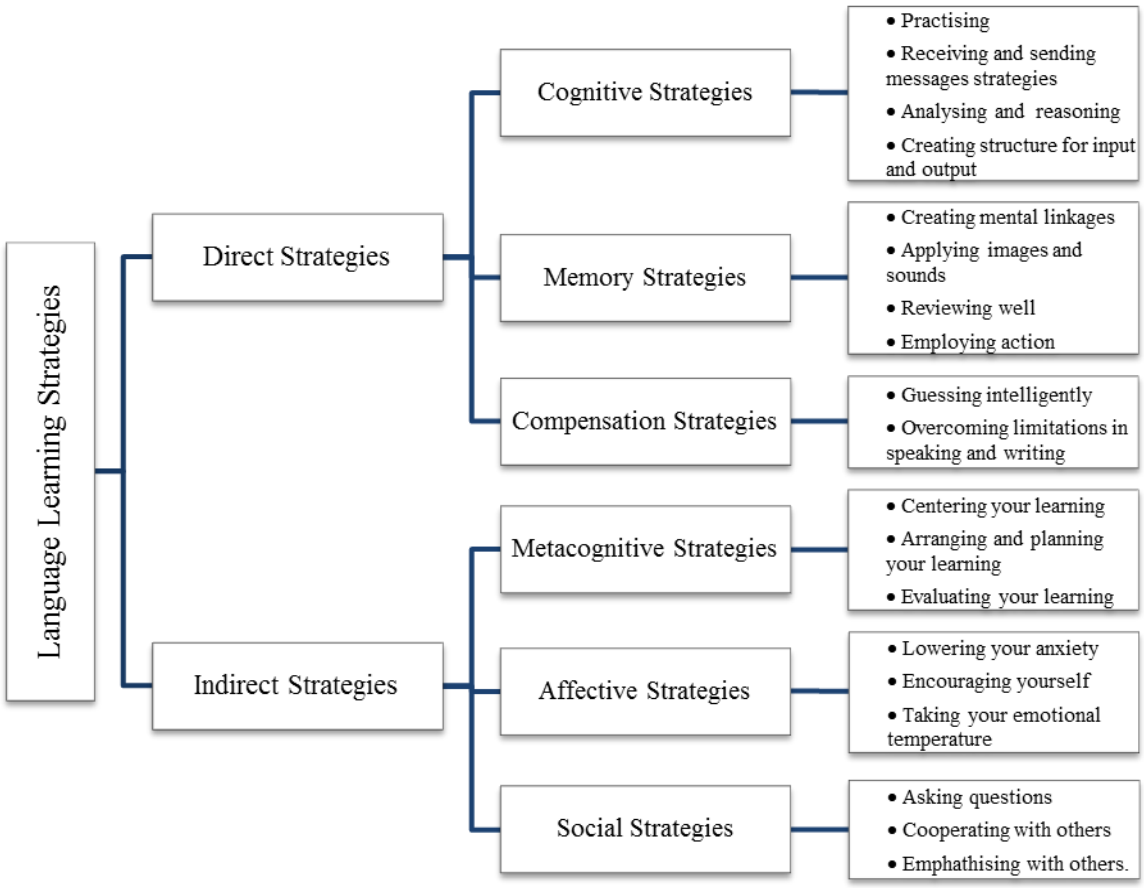

Figure 2.1 Oxford's taxonomy of language learning strategies [1990]

As it is seen, the concept of LLSs, including cognitive processes, social and communicative strategies, supports much of the recent work in this area.

2.1.2.3. O'Malley's (1985) Classification of Language Learning Strategies

O'Malley et al. (1985) divided LLSs into three main subcategories: metacognitive strategies, cognitive strategies and socioaffective strategies (pp. 21-46).

According to O'Malley et al. (1985), metacognitive is a term used to express executive function, strategies which include planning for learning, thinking about the learning process as it is taking place, monitoring of one's production or comprehension, correcting one's own mistakes, and evaluating learning after an activity is completed. Among the main metacognitive strategies, advance organizers, directed attention, selective attention, self-management, functional planning, self-monitoring, delayed production, and self-evaluation can be included.

According to Brown (2007), "Cognitive strategies are more limited to specific learning tasks and they involve more direct manipulation of the learning material itself" (p. 134). The most important cognitive strategies are repetition, resourcing, translation, grouping, note taking, deduction, recombination, imagery, auditory representation, key word, contextualization, elaboration, transfer, and inferencing.

Socioaffective strategies are related with social-mediating activity and interacting with others. Cooperation and question for clarification are the main socioaffective strategies (Brown, 2007).

2.1.2.4. Stern's (1992) Classification of Language Learning Strategies

LLSs have been classified into five groups by Stern (1992, pp. 262-266). They are management and planning strategies, cognitive strategies, communicative - experiential strategies, interpersonal strategies and affective strategies.

Management and planning strategies are connected with the learner's purpose to control his/her own learning. A learner can take responsibility for the improvement of his/her own planning when the teacher supports him/her only as an adviser or a resource person. In other words the learner must:

* Decide what dedications to make to language learning,

* Set reasonable objectives,

***** Decide on a suitable methodology, select proper resources, monitor progress,

***** Evaluate his/her achievement based on previously determined objectives and expectations (Stern, 1992, p. 263).

Cognitive strategies are procedures and activities which learners use to improve their ability to learn and solve the problems that require direct analysis, transformation, or synthesis of learning materials. According to Stern (1992), the cognitive strategies include:

* Clarification / Verification,

* Guessing / Inductive Inferencing,

* Deductive Reasoning,

* Practice,

* Memorization,

* Monitoring.

Communicative-experiential strategies such as gesturing, paraphrasing, or asking for repetition and explanation are techniques employed by learners to keep the conversation going. The aim is to avoid interrupting the course of communication (Stern, 1992, p. 265).

Learners are supposed to communicate with native speakers to become acquainted with their lifestyle and they should observe themselves (Stern, 1992, pp. 265-266). This refers to interpersonal strategies.

Learning a second language is not easy because learners may encounter some emotional difficulties such as frustrations caused by negative feelings about native speakers of the second language. However, good language learners can overcome these problems by using affective strategies. They approach the FL and its speakers without any bias by eliminating potential frustrations instantly (Stern, 1992, p. 266).

In this context, as this research focuses on the strategy group related with metacognitive strategies, it is important to emphasize the concepts of metacognition and MK and theories about metacognition and self-regulation.

2.2. Metacognition and Reflection

2.2.1. Definitions of metacognition

Definitions of metacognition are numerous and wide-ranging. Hennessey (1999) made the following definition:

> Awareness of one's own thinking, awareness of the content of one's conceptions, an active monitoring of one's cognitive processes, an attempt to regulate one's cognitive processes in relationship to further learning, and an application of a set of heuristics as an effective device for helping people organize their methods of attack on problems in general. (p. 3)

Metacognition is thinking about thinking and one's ability to regulate cognitive processes. In metacognition, what is important is the sustainability of learning. For example, a child can perform a particular procedure when it is taught how to do so. However, the question is "Will the child be able to do this performance in a different place when the instruction is cut out?" This is called the 'meta-level' of operations that determines the management of his/her own thought. Awareness and control of one's own thinking is called 'procedural function'. One's deep understanding of thinking and knowing in general is called 'declarative function' (Kuhn & Dean Jr, 2004, p. 270). As it is underlined by Kuhn and Dean Jr, metacognition defined as knowing how to learn best and being aware of how to achieve goals is everywhere and constant in one's learning life. In his 1976 article, Flavell defined metacognition as follows:

> In any kind of cognitive transaction with the human or non-human environment, a variety of information processing activities may go on. Metacognition refers, among other things, to the active monitoring and consequent regulation and orchestration of these processes in relation to the cognitive objects or data on which they bear, usually in service of some concrete goal or objective. (p. 232)

The other definition made by Flavell (1979) is that metacognition is "one's knowledge of one's own cognitive processes and products or anything related to them" (p. 906). For Flavell, metacognition is monitoring and regulating cognitive processes actively to reach a certain goal. Thus, metacognition means the awareness of all cognitive activities used during a particular action.

In 1979, Flavell tried to generate a formal model of metacognition. He underlined the significance of metacognition in a wide range of applications such as reading, communication skills, writing, language acquisition, memory, attention, social interactions, self-instruction, personality development and education.

At the present day, many students have problems in understanding their lessons and recalling what they have learned. Students complain that they forget what they have learned after an examination, and they cannot concentrate on their learning. If this ability and understanding of metacognition can be developed with the help of teachers or instructors who are skilled in this field, students may be able to manage and control their own learning. Teachers or instructors can achieve this by means of many methods. For example, if a teacher gives his/her students homework about a subject and wants them to solve five examples about it, the students only write five examples and come to the class without learning it completely. However, if a teacher wants the students to solve as many examples as they can until they think that they understand and learn the subject thoroughly, the students become aware of their own knowledge of learning, thinking and deep understanding.

2.2.2. Constituent elements of metacognition

Metacognition has two constituent parts: knowledge about cognition and monitoring of cognition (Cross & Paris, 1988; Flavell, 1979; Paris & Winograd, 1990; Schraw & Moshman, 1995; Schraw, Crippen & Hartley, 2006; Whitebread et al., 1990) (as cited in Lai, 2011, p. 5). According to Flavell (1979), there are four classes of phenomena belonging to the formal model of metacognitive monitoring such as MK, metacognitive experiences, tasks and goals, and strategies or actions. Figure 2.2. is a concept map showing the components of Flavell's model (p. 906).

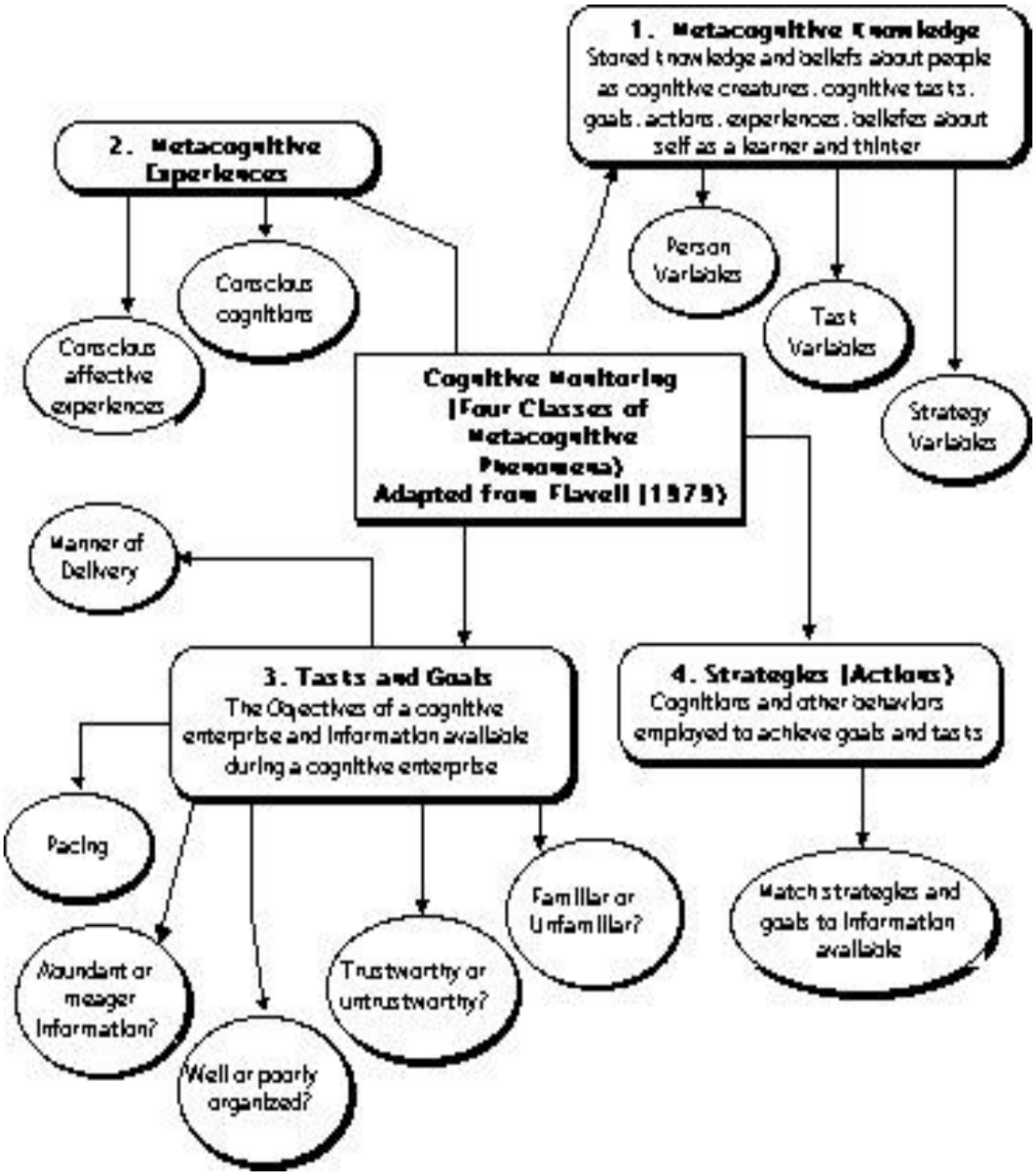

Figure 2.2. The components of Flavell's model [Flavell, 1979]

MK is pre-existing knowledge or beliefs about oneself and others as cognitive agents, tasks, actions or strategies, and how all these operate to affect the learning outcome. Flavell described three categories of these knowledge factors: person variables, task variables, and strategy variables.

The person category of knowledge includes the individual's knowledge and beliefs about himself/herself as a thinker or learner, and his/her beliefs about other

people's thinking processes. Flavell gave examples of knowledge such as a person believing that he can learn better by listening than by reading, or that a person perceives her friend to be more socially aware than she is. One's beliefs about himself/herself as a learner may ease or disrupt performance in any intellectual undertaking.

The task category of MK reflects the learner's ability to make heuristic guesses about average progress based on general a priori beliefs about themselves or the task.

The strategy category of MK involves one's determining whether any particular learning strategy is effective for a given learning goal by considering cognitive processes (Flavell, 1979). MK serves to inform learners what strategies they should employ.

Flavell's (1979) second class of phenomena, metacognitive experiences, are conscious cognitive or affective experiences that concern any aspect of an intellectual undertaking. These experiences, including an individual's internal responses to his/her own cognitive actions, give information about actual current learning progress and future progress, comprehension degree, and correlation between new information and old. More experimental interaction is needed when tasks are performed under stress, but familiar tasks require less metacognitive experience (pp. 907-908).

Therefore, MK and metacognitive experiences are two major factors that determine the coordination of actions and goals.

Flavell's third major category, metacognitive goals and tasks including knowledge and storing information, are objectives of cognitive undertaking (Flavell, 1979).

Metacognitive strategies being used to monitor cognitive progress are essentially self-tests to evaluate learning. "Cognitive strategies are invoked to make cognitive progress, metacognitive strategies to monitor it" (Flavell, p. 909).

It is clear that metacognitive strategies are executive activities that control and regulate one's cognitive processes. These strategies include planning, monitoring and evaluation.

Flavell (1979) underlines that one can use only a single strategy to realize a goal in cognitive or metacognitive domains. For example, asking oneself questions for the

purpose of improving learning or monitoring knowledge and evaluating the new knowledge is a good way to do so (pp. 910-911).

Flavell (1987) examined in detail several aspects of the theory he introduced in 1979. In the category of MK, he suggested subcategories of person variables; he defined intra-individual variables such as knowledge or beliefs about the interests, propensities, aptitudes, abilities, and the like, of oneself or of another person. Inter-individual variables provide comparisons between or among people in a relativistic manner. The universal subcategory includes generalizations formed by a person about learning and learners in general. According to Flavell, cultural influences are very important for the formation of beliefs about learning. Task variables were also handled by Flavell (1987) in more detail. Personal experience plays an important role in the formation of personal expectations about which performing tasks will be difficult (pp. 231-232).

According to Flavell (1987), one's goals or objectives are the key factors that determine strategy variables in the learning process. There is an important difference between cognitive strategies and metacognitive strategies. For example, summing a column of numbers refers to cognitive strategies while evaluating whether the correct answer has been obtained is related with metacognitive strategies (pp. 233-234).

Metacognitive experience was also clarified by Flavell (1987). For Flavell, metacognitive experience is affective and cognitive awareness of one's own thinking such as feeling that one is not understanding something, feeling that something is difficult or easy to remember, solve, or comprehend, and feeling that one is approaching or failing to approach a cognitive goal. Explicitly demanded situations, unfamiliar and novel situations, and expectations generate metacognitive experiences. Metacognitive experience can be caused by situations having an important consequence, conflict, paradox and more urgent subjective experiences such as physical or emotional pain. Numerous questions and possible explanations relating to the development of metacognition were examined by Flavell (1987, pp. 234-235). He suggested that the awareness of the future during childhood is a powerful trigger for metacognitive goals. During this period, there is a change in the sense of the self as an active agent in one's own experiences. The development of metacognition in school children was actively encouraged by Flavell in 1987. MK about persons, tasks, and strategies can be developed in schools where there are many opportunities for this (p. 236).

Several other frameworks that have been developed for categorizing types of knowledge about cognition are seen in Table 1: (as cited in Lai, 2011, p. 7).

Table 2.1.

Typology of Metacognitive Components

Metacognitive Component	**Type**	**Terminology**	**Citation**
Cognitive knowledge	Knowledge about oneself as a learner and factors affecting cognition	Person and task knowledge	Flavell, 1979
		Self-appraisal	Kuhn & Dean, 2004
		Declarative knowledge	Cross & Paris, 1988 Schraw et al., 2006 Schraw & Moshman, 1995
	Awareness and management of cognition, including knowledge about strategies	Procedural knowledge	Cross & Paris, 1988 Kuhn & Dean, 2004 Schraw et al., 2006
		Strategy Knowledge	Flavell, 1979
	Knowledge about why and when to use a given strategy	Conditional knowledge	Schraw et al., 2006
Cognitive regulation	Identification and selection of appropriate strategies and allocation of resources	Planning	Cross & Paris, 1988 Paris & Winograd, 1990 Schraw et al., 2006 Schraw & Moshman, 1995 Whitebread et al., 2009
	Attending to and being aware of comprehension and task performance	Monitoring or regulating	Cross & Paris, 1988 Paris & Winograd, 1990 Schraw et al., 2006 Schraw & Moshman, 1995 Whitebread et al., 2009
		Cognitive experiences	Flavell, 1979
	Assessing the processes and products of one's learning, and revisiting and revising learning goals	Evaluating	Cross & Paris, 1988 Paris & Winograd, 1990 Schraw et al., 2006 Schraw & Moshman, 1995 Whitebread et al., 2009

2.2.3. Relationship to Other Concepts

According to Lai (2011, p. 10), there are a number of other constructs such as metamemory, critical thinking, and motivation that have been linked to metacognition by researchers of cognitive psychology.

According to Schneider & Lockl (2002), metamemory refers to the processes and structures whereby people can examine the content of their memories and it consists of two components that are closely related with the declarative and procedural aspects of cognitive knowledge (p. 5). Declarative knowledge includes knowledge about oneself as a learner and about what factors influence one's performance (p. 6). Procedural knowledge is knowledge about when a particular memory strategy might be useful. Many studies about metacognition include the construct of metamemory, particularly its procedural dimension (Schneider & Lockl, 2002).

Scriven and Paul (1987) suggested the following definition to the National Council for Excellence in Critical Thinking (CT) (https://www.criticalthinking.org/pages/defining-critical-thinking/766):

> Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. In its exemplary form, it is based on universal intellectual values that transcend subject matter divisions: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness.

According to Scriven and Paul (1987), CT has two components: 1) a set of skills to process and generate information, and 2) the habit of using those skills to guide behavior. Thus, having the skills for CT is not sufficient, the employment of them is also important.

In another document from Foundation for CT, Paul and Elder (2008) describe the characteristics of a well cultivated critical thinker:

***** raises vital questions and problems, formulating them clearly and precisely

***** gathers and assesses relevant information, using abstract ideas to interpret it

effectively

* comes to well-reasoned conclusions and solutions, testing them against relevant criteria and standards

***** thinks openmindedly within alternative systems of thought, recognizing and assessing, as need be, their assumptions, implications, and practical consequences; and

***** communicates effectively with others in figuring out solutions to complex problems.

In the context of metacognition, Schraw et al. (2006) defined motivation as "beliefs and attitudes that affect the use and development of cognitive and metacognitive skills" (p. 112). Schraw et al. (2006) divide motivation into two primary subcomponents: self-efficacy and epistemological beliefs. Self-efficacy refers to confidence in one's ability to perform a specific undertaking and epistemological beliefs are beliefs about the origin and nature of knowledge (p. 113). Students' self-confidence and sense of personal responsibility are key factors providing motivation for learning which can be developed with metacognitive training (McCombs & Marzano, 1990; Schunk, 1990).

2.2.4. Metacognition and self-regulation

According to James (1992), there is a close relationship between the self and cognition. "Thoughts connected as we feel them to be connected are what we mean by personal selves" (p. 154). He coined the term "stream of consciousness" that refers to the self. Phrases such as 'subjective life' stress the cognitively active subject (pp. 158-159). He identifies introspective observation with a metacognitive process that involves both awareness and communicability. For James (1890/91), introspective observation is "what we have to rely on first and foremost and always. The word introspection hardly needs to be defined — it means, of course, the looking into our own minds and reporting what we there discover" (p. 185). He draws our attention to self-awareness and self-knowledge or the act of thinking about ourselves. James (1992) distinguished

between the self as knower (I) and the self as known (Me) and as the subject matter of MK, he defines the material, social, and spiritual constituents of the 'Me' (pp. 174-175).

According to Fox and Riconscente (2008), self-regulation is one of the most used topics of James's writings. 'Habit' and 'will' are important terms for self-regulation and one's control of his/her own thoughts and behaviours (p. 376).

James (1992) maintains that our lives consist of habits that are practically, emotionally, and intellectually organized for our happiness or sadness, and bringing us to our destiny regardless of the future (p. 750).

James identifies 'will' with voluntary action and points out that there is a close relationship between voluntary action and the development of habit and self-regulated learning that would demand students' will to search for strategies, make an effort, pave the way for success against the charms of compelling attractions (Fox & Riconscente, 2008, pp. 376-377).

In his works, Piaget provides in-depth analysis of metacognition showing its relevance to one's consciousness of the self and the ability to communicate principle of someone. Piaget (1959), suggests two important factors for understanding people and the environment: awareness of oneself as a subject and looking at something in a wide perspective by associating it with other views (p. 277).

According to Piaget (1964/1968), reason is divided into two concepts: intellect and affect, and self-regulation has a place in both of them. There is a close relationship between the affective and intellectual life. Human behavior not only requires movements and intelligence but also implies the sentiments that constitute affectivity and intelligence, two important aspects of all human behavior (p. 15).

Brown (1987) claims that Vygotsky's (1978) discussion of transference from other-regulation to self-regulation has influenced his metacognitive theory on a large scale. For Vygotsky, the development of metacognitive functions owes much to one's communication in society (social interaction). These mental functions emerge first on the social plane and only later on the individual plane. Vygotsky (1978) proposes: (as cited in Louca, 2008, pp. 10-11)

> Every function in the child's cultural development appears twice: first, between people (interpsychological) and then inside the child

> (intrapsychological). This applies equally to voluntary attention, to logical memory, and to the formation of ideas. All the higher functions originate as actual relationships between individuals. (p. 57)

The people around the child and their activities lead the child to learning and many cognitive acts are initially experienced through this social interaction that enables the child to fulfil some of the cognitive functions by self-regulation and self-interrogation.

We see across these three foundational theorists that metacognition and self-regulation are closely related and intertwined constructs.

2.2.5. Metacognition and learning

The relationship between metacognition and learning may be summarized as follows: (as cited in Dawson, 2008, pp. 7-8).

Table 2.2.

The Relationship between Metacognition and Learning

Finding	**Implication**	**Reference**
Metacognitive skills develop.	They can be learned.	(Baer, Hollenstein, Hofstetter, Fuchs, & Reber-Wyss, 1994; Brown, Bransford, Ferrara, & Campione, 1983; John H. Flavell, 1979; Ruth Garner & Alexander, 1989)
Adults often fail to monitor their thinking.	Adults can benefit from metacognitive training.	(J. H. Flavell, 1981; Ruth Garner & Alexander, 1989; Glenberg, Wilkinson, & Epstein, 1982)
Students who have been taught metacognitive (self-regulated learning) skills learn better than students who have not been taught these skills.	It is possible to produce better learners by teaching metacognitive skills.	(J. Borkowski, Carr, & Pressely, 1987; Bransford, Sherwood, Vye, & Rieser, 1986; Carr, Kurtz,Schneider, Turner, & Borkowski, 1989; R. Garner, 1990; Hascher & Oser, 1995; Mace, Belfiore, &Hutchinson, 2001; Pressley & Ghatala, 1990; B. J. Zimmerman & Schunk, 2001)
Students with good metacognitive skills are better critical thinkers, problem-solvers, or decision makers than students who are not.	It is possible to produce better critical thinkers, problem-solvers, and decision makers by teaching metacognitive skills.	(Bransford et al., 1986; Ewell-Kumar, 1999; Heath, 1983)
People whose thinking is more complex tend to have better metacognitive skills.	Metacognition and cognitive complexity are related.	(Swanson & Hill, 1993; Vukman, 2005)

Table 2.2. (*Cont*.)

In most people, the development of cognitive complexity progresses at different rates in different knowledge domains, depending upon experience and learning in particular domains.	Since cognitive complexity and metacognition are related, we might expect metacognition to be more advanced in more developed knowledge domains.	(Fischer & Pruyne; Fischer, Yan, & Stewart)
Cognitive development involves both knowledge acquisition and (largely unconscious) knowledge structuring. (If there is no knowledge to organize, then there is no development.)	Because metacognitive skills involve the conscious structuring of knowledge, they are likely to be more developed in areas of greater knowledge.	(Bransford et al., 1986)
Content knowledge is more easily accessed in real-world situations if students learn how new concepts and procedures can function as tools for solving relevant problems.	Learning environments should include opportunities for students to reflectively apply new concepts and tools in real-world contexts.	(Glaser, 1984)
Both content knowledge and meta-cognitive skills are essential for learning.	Learning may be enhanced when instruction (1) provides explicit content knowledge while (2) asking students to use metacognitive skills to operate on that knowledge.	(Bransford et al., 1986; Perkins, 1987)
Metacognitive training can increase students' self-confidence and sense of personal responsibility for their own development.	Increased self-confidence and a sense of increased personal responsibility may provide motivation for learning.	(McCombs & Marzano, 1990; Schunk, 1990)
Metacognitive training can increase students' motivation to learn.	Training in metacognitive skills may enhance students' sense of self efficacy, thus increasing their motivation to learn.	(Bandura, 1986; Hofer & Yu, 2003; Sperling, Howard, Staley, & DuBois,2004)
Moving adult learners to a point of acknowledging that old routines no longer work as well as new, instructed ones takes time and many demonstrations of the superiority of the new routines.	Metacognitive strategies should be embedded in assignments and classroom activities across the curriculum at every level of instruction	(Ruth Garner & Alexander, 1989)
"Intelligent novices" can use general metacognitive skills to figure out how to obtain knowledge in an unfamiliar domain.	Once adults have gained expertise and learned how to use a range of metacognitive skills in one domain, they can use some of their metacognitive skills to more rapidly learn in another domain.	(Bruer, 1993; Mathan & Koedinger, 2005; Garner, 1989)
Students receiving intelligent novice feedback acquire a deeper conceptual understanding of domain principles and demonstrate better transfer and retention of skills over time than students who do not receive such feedback.	Teachers or "intelligent tutors" can support the use of existing metacognitive strategies in new knowledge areas by providing feedback that reminds students to employ metacognitive strategies they have used in familiar knowledge areas.	(Mathan & Koedinger, 2005)

Table 2.2. (*Cont*.)

When students perceive an emphasis on mastery goals in their classroom, they report using more metacognitive learning strategies.	Classrooms in which "covering the content" is emphasized over understanding can deprive students of the opportunity to learn and master learning skills.	(Ames & AfIher, 1988)
Use of concept maps helped adult students develop thinking skills, promoted growth in understanding their learning processes, and fostered understanding of knowledge construction.	Concept mapping, used well, is a useful metacognitive skill.	(Daley, 2002)
Repeated experiences of dyadic discussions within the classroom improved reasoning skills (over controls).	Active engagement in thinking about a topic enhances the quality of reasoning about that topic.	(Kuhn, Shaw, & Felton, 1997)
Informal learning is enhanced in managers who employ a wide range of metacognitive strategies.	Training in the use of metacognitive strategies may increase informal learning in less metacognitively sophisticated managers.	(Enos, Kehrhahn, & Bell, 2003)
Students in problem based learning classrooms have been found to have higher levels of intrinsic goal orientation, task value, use of elaboration learning strategies, critical thinking, metacognitive self-regulation, effort regulation, and/or peer learning compared with control-group students.	Problem based learning environments may enhance metacognitive skills relative to conventional instructional environments.	(Sungur & Tekkaya, 2006)
Gifted learners have been found to employ fewer metacognitive strategies than less gifted students.	Gifted learners, because they learn easily, may not need to employ metacognitive strategies to excel. This could result in reasoning deficits in later life.	(Dresel & Haugwitz, 2005)

2.3. Related Literature

A considerable amount of literature has been published on the positive relationship between metacognition and achievement. These studies include metacognitive strategy use and the students' achievement in different subject areas.

In their study, "EFL Learners' Listening Comprehension and Awareness of Metacognitive Strategies: How Are They Related?", Al-Alwan, Asassfeh and Al-Shboul (2013) explored metacognitive listening strategies awareness and its relationship with listening comprehension on a convenient sample of 386 tenth-grade EFL learners using Metacognition Awareness Listening Questionnaire (MALQ) (Vandergrift, Goh, Mareschal, & Tafaghodtari, 2006) and a Listening Comprehension Test (LCT) developed by the researchers for the purpose of their study. They showed that students possessed a moderate level of metacognitive listening strategies awareness.Whereas

directed attention and personal knowledge failed to explain the variance in the students' listening comprehension performance, problem solving, planning and evaluation, and directed attention were capable of explaining 56% of the variance in the students' performance on the LCT. It was found that there is a positive relationship between metacognitive strategies awareness and listening comprehension.

Ahmadi, Ismail and Abdullah (2013) tried to find out whether 'meta-cognitive reading strategy awareness' enhanced EFL students' reading comprehension in their research of "The Importance of Metacognitive Reading Strategy Awareness in Reading Comprehension". The findings based on the review of the literature along with analysis of the data indicated that metacognitive reading comprehension skill had a positive effect on learning a second language and learners could gain the skills they needed for effective communication in English.

Çalışkan and Sünbül (2011) investigated "The Effects of Learning Strategies Instruction on Metacognitive Knowledge, Using Metacognitive Skills and Academic Achievement (Primary Education Sixth Grade Turkish Course Sample)". An experimental pre-test/post-test control group design was used in the study. Forty-two 6th grade students participated in the study, 21 in the experimental group and 21 in the control group. Groups were equalized on the basis of the Learning Strategies Scale, the Turkish Lesson Metacognitive Knowledge Interview Form, and the pre-test results of the Turkish Lesson Achievement Test. In the experimental group, strategy instruction was given by the researcher himself for 15 weeks, using a direct instruction approach. As a result, this study strengthened the idea that learning strategies instruction increases awareness of strategy and MK and it is effective in using MSs. It was also found that using MSs increases achievement.

In the study of "Roles of Linguistic Knowledge, Metacognitive Knowledge and Metacognitive Strategy Use In Speaking and Listening Proficiency of Iranian EFL Learners", Ghapanchi (2012) examined the influence of language knowledge, MK and metacognitive strategy use on speaking and listening proficiency. Ninety six freshman and sophomore Iranian university students (male=6, female=90) participated in the study. Two kinds of questionnaires and one language knowledge test were administered. Pearson product moment correlation was applied to find the relationship between the variables and speaking and listening proficiency. Multiple regressions were used to test

the variance accounted for language knowledge, MK, metacognitive strategy use in speaking, and listening proficiency. The results demonstrated that language knowledge, MK, and metacognitive strategy use correlated significantly and substantially with speaking and listening proficiency. Ghapanchi showed that the more one possesses language knowledge, MK, and metacognitive strategy use, the more proficient he is in speaking and listening.

Roebers, Cimeli, Röthlisberger and Neuenschwander (2012) conducted a study about the associations between executive functioning, metacognition, and self-perceived competence in the context of early academic outcomes. A total of 209 children attending first grade were initially assessed in terms of their executive functioning and academic self-concept. One year later, the children's executive functioning, academic self-concept, metacognitive monitoring and control, as well as their achievement in mathematics and literacy were evaluated. Structural equation modeling revealed that executive functioning was significantly related to metacognitive control, both cross-sectionally and longitudinally, and that self-concept was substantially associated with metacognitive monitoring, both cross-sectionally and longitudinally. Individual differences in executive functioning and metacognitive control were significantly related to academic outcomes, with metacognitive control appearing to yield a more circumscribed influence on academic outcomes (only literacy) in comparison to executive functioning (literacy and mathematics).

In the study "The Effect of a Suggested Training Program in Some Metacognitive Language Learning Strategies on Developing Listening and Reading Comprehension of university EFL Students", Abdelhafez (2006) used a pre-post experimental and control groups design. The sample of the study consisted of 80 first year EFL majors at the Faculty of Education at Minia University. The experimental group (forty students) was trained in some metacognitive LLSs embedded in listening and reading comprehension tasks, while the control group (forty students) completed the tasks without any metacognitive training. A listening comprehension test, a reading comprehension test and an English Proficiency Examination were used to measure the effects of the program. The analysis of the data using a t-test revealed that first year EFL students in the experimental group performed far better than their counterparts in

the control group. Abdelhafez demonstrated that listening comprehension and reading comprehension can be developed through systematic instruction in metacognitive LLSs.

In her doctoral dissertation "Investigation of Primary School Teachers Use of Metacognitive Strategies in Their Lessons", Özcan (2007) investigated factors (learning and metacognitive strategies of teachers, personal and demographic characteristics of teachers) that effect the use of metacognitive strategies in their lessons. The sample consisted of 161 male and 261 female primary school teachers. Özcan used several scales such as a Teacher Personal Information Form, an Adjective Check List, Learning Strategies For Adults, Metacognitive Strategies for Adults, and Self Reflection on Enhancing Metacognition. The results of the study confirmed the associations between teachers' use of learning strategies, metacognitive strategies and teachers' personality in their learning in the context of the use of metacognitive strategies in their lessons.

In Altındağ's (2008) master's thesis "Metacognitive Skills of Students' at Faculty of Education of Hacettepe University", 413 college students in their 1st and 4th years of Division of Initial Primary Teacher Education (DIPTE) and the Department of Science and Mathematics for Secondary Education (DSMSE) participated in the research. The metacognitive skills were measured by the MSS which was developed by the researcher. Cronbach's Alpha Coefficient of Reliability was 92. He found that there were significant relations between metacognition scores and academic achievement in the 1st and 4th years of DIPTE and DSMSE.

In his doctoral dissertation, "The Effects of Using Cognitive Learning Strategies on Reading Comprehension Ability of Turkish Students", Bedir (1998) examined the relation between cognitive learning strategies and the students' success in reading comprehension. An experimental pre-test/post-test control group design was used in the research. First, what types of strategies the students used in reading comprehension courses was measured, then a training program of cognitive learning strategies was given to students. Bedir found that there was a close relation between cognitive learning strategies and the students' success in reading comprehension. The students in the experimental group proved to be more successful than those in the control group. The results also supported the idea that cognitive learning training in reading comprehension enables readers to develop higher order level thinking skills and metacognitive strategies.

In Muhtar's (2006) master's thesis, "Effects of Training University EFL Students in Metacognitive Strategies for Reading", 46 ELT freshmen participated in the first stage of the research, the Strategy Inventory for Language Learning - SILL; and 32 participated in the strategy training stage. The design of the study involved a pretest-post test control group. First, SILL was applied to the freshmen and collected data was interpreted with descriptive statistic techniques and a t-test. The analysis of the post-tests showed no significant difference between the reading performance of the experimental and the control groups. However, a statistically significant increase was observed in the post-test results of the experimental group when compared to the pre-test, which was interpreted as a positive effect of the strategy training. With this study, Muhtar showed that there is an important relation between metacognitive strategy training and freshmen reading achievement.

Maqsud (2006), carried out a study on the "Effects of Metacognitive Skills and Nonverbal Ability on Academic Achievement of High School Pupils" to examine the relationship between metacognitive strategies and nonverbal reasoning ability and their performance in tests of mathematics and English comprehension. He conducted two experiments with senior high school pupils in the North-West Province of South Africa. The analyses of data revealed that both metacognitive ability and nonverbal reasoning ability have a significant positive association with mathematics and English achievement scores. Significant sex differences in mathematics performance were also found. The findings of the two experiments suggested that some intervention programs to teach metacognitive strategies to students, who lack such skills, may improve their academic attainment.

In their study, "The Effect of Developing Reflective Thinking on Metacognitional Awareness at Primary Education Level in Turkey", Ersözlü and Arslan (2009) investigated how the acquisition of reflective thinking ability by 5^{th} grade students can effect metacognitional awareness. The study was designed and conducted on an experimental basis according to a pretest-final test control group model. In relation to the model, a metacognitional awareness scale was applied to both experiment and control group students before the practice. Over nine weeks of practicing developing reflective thinking was conducted by an experimental group while traditional practices were performed on a control group. At the end of the practice, a

metacognitional awareness scale was applied as a final test to both of the groups, and thus the study was concluded. It was found that the activities developing reflective thinking on the experiment group meaningfully increased the metacognitional awareness of the students in contrast to the control group. In addition, there was not a significant correlation between metacognitional awareness levels of the students and their GENDs.

In short, it is clear that related literature confirms the associations between the use of learning strategies, metacognitive strategies, executive functioning and reflective thinking in the context of achievement in different subject areas of English. In addition, there are variations in the relationships between the students' cognitive and metacognitive strategy use with respect to country, subject area, achievement test and levels of education. According to Dowson and McInerney (1998), every strategy is not equally useful in every subject area and requires differential use of diverse strategies in different subject areas. Empirical studies indicated that there were GEND differences in favor of girls in cognitive and metacognitive strategy use and achievement, although there were also studies supporting that GEND did not have a significant effect on cognitive and metacognitive strategy use and achievement. In addition, mo studies strengthened the effectiveness of prior knowledge in academic accomplısnment.

CHAPTER THREE

3. METHODOLOGY

3.1. Design of the Study

In this study, the level of MSs acquired by college freshmen of the DELT was determined by a descriptive research method.

3.2. Population and Sampling

The target population of the study was 1st year college students of the DELT at Turkish state universities. The accessible population was identified as all college freshmen of the DELT at four universities offering both daytime and evening programs: Atatürk University, Akdeniz University, Necmettin Erbakan University (previously known as Konya University), and Erciyes University.

According to the LYS (Undergraduate Placement Exam) Guide of 2012, there were only fifteen state universities that have the conditions above and the total contingencies shared for the students at these universities were 2484 (1242 for each program). The total number of the students that attended to these four universities was 588 (294 for each program). Cluster random sampling was used in the selection of the sample. Four state universities out of 15 were selected by cluster random sampling. In the selected four state universities, 430 college freshmen were volunteers and the researcher himself conducted the questionnaire.

3.3. Variables

In this study, there are 11 variables; the teaching program, the students' ages, and GENDs, the high schools that students attended, the students' English levels in high school, their preparatory training at university, their satisfaction with learning

English, their present English levels according to self-evaluation, during the 2011-2012 academic year Spring semester, the mean of the students' scores on certain courses' midterms and their final scores in the first term, and their attendance to these courses.

3.4. Data Collection Instruments

In this study, two instruments were used to collect data from students: the MSS developed by Altındağ (2008) and an independent variable questionnaire developed by the researcher. The questionnaires were given during the 2011-2012 academic year Spring semester.

Questionnaires were conducted by the researcher himself at the universities mentioned above in one class hour.

3.5. Data Collection Procedures

After the literature review and preparation of instruments, four state universities out of 15 were selected randomly**.** With the necessary permission from the Deans of the Faculties, the MSS and the independent variable questionnaire were administered to 430 college freshmen. Completion of the instruments took nearly 30 minutes. Directions were made clear and necessary explanations were made by the researcher. Students were told that the MSS would not affect their English grade and they would not write their names on the instruments, their answers were important for education, and the answers would be kept confidential. It was also emphasized that students had the right to withdraw from the study if they did not want to participate. They were also notified to read all items carefully and complete all of them. Because of the limitation of time, teachers were requested to help the researcher during the administration. Teachers were given information about the study and the administration process. During the administration of the instruments, no specific problems were encountered.

3.6. Data Analysis Procedure

The statistical analyses were done by means of the SPSS 17.0 for Windows software program. Descriptive statistics [count, percentages, mean ($\overline{x}$) and standard deviation (SD)] were used in order to analyze the obtained data.

In the comparison of quantitative data, differences between two groups were assessed by a t-test. Inter-group differences were investigated by conducting ANOVA to compare three or more groups and Tukey's Post Hoc Test was used to determine the group causing the difference.

Pearson correlation coefficients were used to investigate the relationship between the dependent and independent variables. Correlations among scales were examined according to the following criteria (Kalaycı, 2006, p. 116);

Table 3.1.

Correlations among Scales

r	**Correlation**
0.00-0.25	Little
0.26-0.49	Low
0.50-0.69	Moderate
0.70-0.89	High
0.90-1.00	Very high

The findings obtained from the research were evaluated in 95% confidence interval. The significance level determined for this study was $\alpha = 0{,}05$.

CHAPTER FOUR

4. RESULTS AND DISCUSSION

This chapter consists of the findings obtained from the university students by means of scales as a result of the analyzed data for the purpose of solving the research problem. According to these findings, an explanation and interpretation were made.

"Many factors influence students using language learning strategies: age, sex, attitude, motivation, aptitude, learning stage, task requirements, teacher expectation, learning styles, individual differences, motivation, cultural differences, beliefs about language learning, and language proficiency" (Abraham & Vann, 1987, 1990; Bialystok, 1979; Chamot & Kupper, 1989; Ehrman & Oxford, 1995; Oxford, 1989; Oxford & Nyikos, 1989; Rubin, 1975) (as cited in Lee, 2010, p. 142). In this study, most of these factors were considered as shown in the following analysis.

4.1. The Findings of College Freshmen in Terms of their Demographic Charateristics and Discussions

The results of college freshmen in accordance with their demographic charateristics are presented in tables 4.1, 4.2, 4.3, 4.4 and 4.5.

Table 4.1.

Mean Values for College Freshmen in Accordance with the University that they Attended

Universities	**n**	**%**
Akdeniz University	101	23.5
Erciyes University	99	23.0
Atatürk University	101	23.5
Necmettin Erbakan University	129	30.0
Total	430	100.0

As shown in Table 4.1, the mean values for college freshmen in accordance with the university that they attended were determined as: 101 (23.5%) for Akdeniz University, 99 (23.0%) for Erciyes University, 101 (23.5%) for Atatürk University, and 129 (30.0%) for Necmettin Erbakan University.

Table 4.2.

Mean Values for College Freshmen in Accordance with the Teaching Program Variable

The teaching program	**n**	**%**
Daytime program	220	51.2
Evening program	210	48.8
Total	430	100.0

College freshmen differ in terms of the teaching program variable in that 220 (51.2%) of them were in the daytime program and 210 of them (48.8%) belonged to the evening program.

Table 4.3.

Mean Values for College Freshmen in Accordance with Age Variable

Age ranges	**n**	**%**
17-19	207	48.1
20-22	158	36.7
23 and over 23	65	15.1
Total	430	100.0

College freshmen differ in terms of the age variable in that 207 (48.1%) of them were 17-19, 158 (36.7%) of them were 20-22, and 65 (15.1%) of them were 23 and over 23.

Table 4.4.

Mean Values for College Freshmen in Accordance with Gender Variable

GEND	**n**	**%**
Female	312	72.6
Male	118	27.4
Total	430	100.0

College freshmen differ in terms of their GENDs in that 312 (72.6%) of them were female and 118 (27.4%) of them were male.

Table 4.5.

Mean Values for College Freshmen in Accordance with the High Schools that they Attended

The high schools that the students attended	**n**	**%**
Anatolian High School	219	50.9
Super High School	28	6.5
FL Intensive High School	17	4.0
High School	97	22.6
Open Education High School	10	2.3
Anatolian Teacher Training High School	49	11.4
Private High School	3	0.7
Industrial Vocational High School	3	0.7
Imam Hatip High School	3	0.7
Military High School	1	0.2
Total	430	100.0

College freshmen differ in terms of the high schools that they attended in that 219 (50.9%) of them were from Anatolian High School, 28 (6.5%) of them were from Super High School, 17 (4.0%) of them were from FL Intensive High School, 97 (22.6%) of them were from High School, 10 (2.3%) of them were from Open Education High School, 49 (11.4%) of them were from Anatolian Teacher Training High School, 3 (0.7%) of them were from Private High School, 3 (0.7%) of them were from Industrial Vocational High School, 3 (0.7%) of them were from Imam Hatip High School, and 1 (0.2%) of them was from Military High School.

4.2. The Findings of College Freshmen in Terms of their Descriptive Characteristics and Discussions

Tables 4.6 and 4.7 present the results of college freshmen in accordance with their descriptive characteristics.

Table 4.6.

Mean Values for College Freshmen in Accordance with their Participation in a Preparatory Program at University

Answer	**n**	**%**
Yes	158	36.7
No	272	63.3
Total	430	100.0

College freshmen differ in terms of participating in a preparatory program at university in that 158 (36.7%) of them answered 'yes' and 272 (63.3%) of them, 'no'.

Table 4.7.

Mean Values for College Freshmen in Accordance with their Satisfaction with Learning English as a FL

Answer	**n**	**%**
Yes	410	95.3
No	20	4.7
Total	430	100.0

College freshmen differ in terms of their satisfaction with learning English as a FL in that 410 (95.3%) of them answered 'yes' and 20 (4.7%) of them, 'no'.

4.3. The Findings of College Freshmen in Terms of their Attendance to Certain Courses and Discussions

The results of college freshmen in accordance with their attendance to certain courses are presented in tables 4.8, 4.9, 4.10 and 4.11.

Table 4.8.

Mean Values for College Freshmen in Accordance with their Attendance to the Contextual Grammar-I Course

The students' attendance to the Contextual Grammar-I course	**n**	**%**
More than 80%	208	48.4
80% - 60%	118	27.4
59% - 30%	52	12.1
Less than 30%	52	12.1
Total	430	100.0

College freshmen differ in terms of their attendance to the Contextual Grammar-I course in that 208 (48.4%) of them attended more than 80% of the time, 118 (27.4%) of them attended 80% - 60% of the time, 52 (12.1%) of them attended 59% - 30% of the time, and 52 (12.1%) of them attended less than 30% of the time.

Table 4.9.

Mean Values for College Freshmen in Accordance with their Attendance to the Advanced Reading and Writing-I Course

The students' attendance to the Advanced Reading and Writing-I course	**n**	**%**
More than 80%	264	61.4
80%-60%	122	28.4
59%-30%	38	8.8
Less than 30%	6	1.4
Total	430	100.0

College freshmen differ in terms of their attendance to the Advanced Reading and Writing-I course in that 264 (61.4%) of them attended more than 80% of the time, 122 (28.4%) of them attended 80% - 60% of the time, 38 (8.8%) of them attended 59% - 30% of the time, and 6 (1.4%) of them attended less than 30% of the time.

Table 4.10.

Mean Values for College Freshmen in Accordance with their Attendance to the Listening and Pronunciation-I Course

The students' attendance to the Listening and Pronunciation-I course	**n**	**%**
More than 80%	276	64.2
80% - 60%	112	26.0
59% - 30%	29	6.7
Less than 30%	13	3.0
Total	430	100.0

College freshmen differ in terms of their attendance to the Listening and Pronunciation-I course in that 276 (64.2%) of them attended more than 80% of the time, 112 (26.0%) of them attended 80% - 60% of the time, 29 (6.7%) of them attended 59% - 30% of the time, and 13 (3.0%) of them attended less than 30% of the time.

Table 4.11.

Mean Values for College Freshmen in Accordance with their Attendance to the Oral Communication Skills-I Course

The students' attendance to the Oral Communication Skills-I course	**n**	**%**
More than 80%	268	62.3
80% - 60%	108	25.1
59% - 30%	35	8.1
Less than 30%	19	4.4
Total	430	100.0

College freshmen differ in terms of their attendance to the Oral Communication Skills-I course in that 268 (62.3%) of them attended more than 80% of the time, 108 (25.1%) of them attended 80% - 60% of the time, 35 (8.1%) of them attended 59% - 30% of the time, and 19 (4.4%) of them attended less than 30% of the time.

4.4. The Findings of College Freshmen in Terms of their English Levels When they Started High School and Discussions

The results of college freshmen in accordance with their English levels when they started high school are presented in tables 4.12, 4.13, 4.14, 4.15 and 4.16.

Table 4.12.

Mean Values for College Freshmen in Accordance with their English Listening Levels When they Started High School

The students' English listening levels when they started high school	**n**	**%**
Beginner level	260	60.5
Elementary level	132	30.7
Int. level	38	8.8
Total	430	100.0

College freshmen differ in terms of their English listening levels when they started high school in that 260 (60.5%) of them were at beginner level, 132 (30.7%) were at elementary level, and 38 (8.8%) were at int. level.

Table 4.13.

Mean Values for College Freshmen in Accordance with their English Reading Levels When they Started High School

The students' English reading levels when they started high school	**n**	**%**
Beginner level	176	40.9
Elementary level	199	46.3
Int. level	55	12.8
Total	430	100.0

College freshmen differ in terms of their English reading levels when they started high school as 176 (40.9%) of them were at beginner level, 199 (46.3%) were at elementary level, and 55 (12.8%) were at int. level.

Table 4.14.

Mean Values for College Freshmen in Accordance with their English Speaking Levels in Conversation When they Started High School

The Students' English speaking levels in conversation when they started high school	**n**	**%**
Beginner level	300	69.8
Elementary level	102	23.7
Int. level	28	6.5
Total	430	100.0

College freshmen differ in terms of their English speaking levels in conversation when they started high school as 300 (69.8%) of them were at beginner level, 102 (23.7%) were at elementary level, and 28 (6.5%) were at int. level.

Table 4.15.

Mean Values for College Freshmen in Accordance with their English Oral Expression Levels When they Started High School

The students' English oral expression levels when they started high school	**n**	**%**
Beginner level	281	65.3
Elementary level	117	27.2
Int. level	32	7.4
Total	430	100.0

College freshmen differ in terms of their English oral expression levels when they started high school as 281 (65.3%) of them were at beginner level, 117 (27.2%) were at elementary level, and 32 (7.4%) were at int. level.

Table 4.16.

Mean Values for College Freshmen in Accordance with their English Writing Levels When they Started High School

The students' English writing levels when they started high school	**n**	**%**
Beginner level	206	47.9
Elementary level	168	39.1
Int. level	56	13.0
Total	430	100.0

College freshmen differ in terms of their English writing levels when they started high school as 206 (47.9%) of them were at beginner level, 168 (39.1%) were at elementary level, and 56 (13.0%) were at int. level.

4.5. The Findings of College Freshmen in Terms of their Present English Levels and Discussions

Tables 4.17, 4.18, 4.19, 4.20 and 4.21 present the results of college freshmen in accordance with their present English levels.

Table 4.17.

Mean Values for College Freshmen in Accordance with their Present English Listening Levels

The students' present English listening levels	**n**	**%**
Beginner level	16	3.7
Elementary level	240	55.8
Int. level	174	40.5
Total	430	100.0

College freshmen differ in terms of their present English listening levels as 16 (3.7%) of them were at beginner level, 240 (55.8%) were at elementary level, and 174 (40.5%) were at int. level.

Table 4.18.

Mean Values for College Freshmen in Accordance with their Present English Reading Levels

The students' present English reading levels	n	%
Beginner level	15	3.5
Elementary level	159	37.0
Int. level	256	59.5
Total	430	100.0

College freshmen differ in terms of their present English reading levels as 15 (3.5%) of them were at beginner level, 159 (37.0%) were at elementary level, and 256 (59.5%) were at int. level.

Table 4.19.

Mean Values for College Freshmen in Accordance with their Present English Speaking Levels in Conversation

The students' present English speaking levels in conversation	n	%
Beginner level	33	7.7
Elementary level	262	60.9
Int. level	135	31.4
Total	430	100.0

College freshmen differ in terms of their present English speaking levels in conversation as 33 (7.7%) of them were at beginner level, 262 (60.9%) were at elementary level, and 135 (31.4%) were at int. level.

Table 4.20.

Mean Values for College Freshmen in Accordance with their Present English Oral Expression Levels

The students' present English oral expression levels	n	%
Beginner level	43	10.0
Elementary level	250	58.1
Int. level	137	31.9
Total	430	100.0

College freshmen differ in terms of their present English oral expression levels as 43 (10%) of them were at beginner level, 250 (58.1%) were at elementary level, and 137 (31.9%) were at int. level.

Table 4.21.

Mean Values for College Freshmen in Accordance with their Present English Writing Levels

The students' present English writing levels	n	%
Beginner level	28	6.5
Elementary level	207	48.1
Int. level	195	45.3
Total	430	100.0

College freshmen differ in terms of their present English writing levels as 28 (6.5%) of them were at beginner level, 207 (48.1%) were at elementary level, and 195 (45.3%) were at int. level.

4.6. The Mean of College Freshmen's MSs and Discussions

Table 4.22 presents the mean of the students' MSs.

Table 4.22.

The Mean of College Freshmen's MSs

	n	$\bar{x}$	SD	Min.	Max.
The students' MSs	430	102.537	10.490	35.000	120.000

As it is seen in table 4.22, the mean of the students' MSs is at the 102.537 ± 10.490 level. This means that the students have high metacognitive skills.

4.7. Mean Values for College Freshmen's MSs in Terms of their Demographic Characteristics and Discussions

Tables 4.23, 4.24, 4.25, 4.26, 4.27, 4.28 and 4.29 present the mean values for college freshmen's MSs in terms of their demographic characteristics.

Table 4.23.

Mean Values for College Freshmen's MSs in Accordance with the Universities that they Attended

Universities	**n**	**$\bar{x}$**	**SD**	***F***	**p**
Akdeniz University	101	100.287	13.408	2.312	0.076
Erciyes University	99	103.030	8.471		
Atatürk University	101	103.990	9.217		
Necmettin Erbakan University	129	102.783	10.057		

As a result of the ANOVA conducted in order to determine whether the mean values for the students' MSs had a significant difference in terms of the universities that they attended, it was found that the difference among the group means was not statistically significant ($p>0.05$).

Table 4.24.

Mean Values for College Freshmen's MSs in Accordance with the Teaching Program

The teaching program	**n**	**$\bar{x}$**	**SD**	**t**	**p**
Daytime program	220	102.850	9.245	0.632	0.527
Evening program	210	102.210	11.667		

The result of the t-test conducted in order to find out whether the mean values for the students' MSs had a significant difference in terms of the teaching program indicated that the difference between the means of the two groups was not statistically significant ($p>0.05$).

Table 4.25.

Mean Values for College Freshmen's MSs in Accordance with their Ages

Age ranges	**n**	**$\bar{x}$**	**SD**	**F**	**p**
17-19 ages	207	102.662	9.181	0.120	0.887
20-22 ages	158	102.228	11.620		
23 age and more	65	102.892	11.604		

As a result of the ANOVA conducted in order to determine whether the mean values for the students' MSs had a significant difference in terms of their ages, it was found that the difference among the means of the groups was not statistically significant ($p>0.05$). MSs do not automatically improve depending on age (Markman, 1977;

Brown, 1981). They should be developed and automatized slowly over a long period (Derry and Murphy, 1986). This means that there is no significant association between the MSs and age.

Table 4.26.

Mean Values for College Freshmen's MSs in Accordance with their Genders

GEND	**n**	**$\bar{x}$**	**SD**	**t**	**p**
Female	312	103.205	9.752	2.156	0.032
Male	118	100.771	12.098		

The result of the t-test used in order to find out whether the mean values for the students' MSs had a significant difference in accordance with their GENDs indicated that the difference between the means of the two groups was statistically significant ($t=2.156$; $p=0.032<0.05$). The results showed that female students' scores of MSs ($\bar{x}=103.205$) were higher than male students' scores of MSs ($\bar{x}=100.771$).

According to Pintrich (2000), learners' demographic characteristics are one of the factors that have an influence on their accomplishment and learning. Thus, this result supports Pintrich's claim.

Table 4.27.

Mean Values for College Freshmen's MSs in Accordance with the High Schools that they Attended

The high schools that they attended	**n**	**$\bar{x}$**	**SD**	**F**	**p**
Anatolian High School	219	102.306	10.237	1.868	0.085
Super High School	28	105.250	9.184		
FL Intensive High School	17	103.529	8.063		
High School	97	103.639	12.216		
Open Education High School	10	96.500	9.058		
Anatolian Teacher Training High School	49	102.163	8.683		
Others	10	95.500	11.277		

Regarding the ANOVA conducted in order to determine whether the mean values for the students' MSs had a significant difference in terms of the high schools that they attended, the results found showed no statistically significant difference among the group means ($p>0.05$).

Table 4.28.

Mean Values for College Freshmen's MSs in Accordance with their Participation in a Preparatory Program at University

Answer	n	$\bar{x}$	SD	t	p
Yes	158	101.690	12.023	1.278	0.231
No	272	103.029	9.476		

As a result of the t-test conducted in order to find out whether the mean values for the students' MSs had a significant difference in terms of their participation in a preparatory program at university, it was found that the difference between the means of the two groups was not statistically significant ($p>0.05$).

Table 4.29.

Mean Values for College Freshmen's MSs in Accordance with their Satisfaction with Learning English as a FL

Answer	n	$\bar{x}$	SD	t	p
Yes	410	102.749	10.386	1.899	0.058
No	20	98.200	11.919		

The result of the t-test used in order to find out whether the mean values for the students' MSs had a significant difference in accordance with their satisfaction with learning English as a FL indicated that the difference between the means of the two groups was not statistically significant ($p>0.05$).

4.8. Mean Values for College Freshmen's MSs in Terms of their Levels of English When they Started High School and Discussions

The mean values for college freshmen's MSs in accordance with their levels of English when they started high school are presented in tables 4.30, 4.31, 4.32, 4.33 and 4.34.

Table 4.30.

Mean Values for College Freshmen's MSs in Accordance with their English Listening Levels When They Started High School

Levels	n	$\bar{x}$	SD	F	p
Beginner level	260	102.562	10.018	0.003	0.997
Elementary level	132	102.477	9.711		
Int. level	38	102.579	15.476		

As a result of the ANOVA conducted in order to find out whether the mean values for the students' MSs had a significant difference in terms of their English listening levels when they started high school, it was found that the difference among the means of the groups was not statistically significant ($p>0.05$).

Table 4.31.

Mean Values for College Freshmen's MSs in Accordance with their English Speaking Levels in Conversation When they Started High School

Levels	n	$\bar{x}$	SD	F	p
Beginner level	300	102.610	9.887	0.062	0.940
Elementary level	102	102.235	10.558		
Int. level	28	102.857	15.766		

Regarding the ANOVA conducted in order to determine whether the mean values for the students' MSs had a significant difference in terms of their English speaking levels in conversation when they started high school, the results showed no statistically significant difference among the group means ($p>0.05$).

Table 4.32.

Mean Values for College Freshmen's MSs in Accordance with their English Reading Levels When they Started High School

Levels	n	$\bar{x}$	SD	F	p
Beginner level	176	102.443	9.675	0.127	0.881
Elementary level	199	102.769	10.209		
Int. level	55	102.000	13.721		

The result of the ANOVA conducted in order to find out whether the mean values for students' MSs had a significant difference in terms of their English reading

levels when they started high school indicated that the difference among the means of the groups was not statistically significant (p>0.05).

Table 4.33.

Mean Values for College Freshmen's MSs in Accordance with their Levels of Oral Expression in English When they Started High School

Levels	n	$\bar{x}$	SD	F	p
Beginner level	281	102.769	9.914	0.617	0.540
Elementary level	117	102.513	9.898		
Int. level	32	100.594	16.252		

As a result of the ANOVA conducted in order to find out whether the mean values for the students' MSs had a significant difference in terms of their levels of oral expression in English when they started high school, it was found that the difference among the means of the groups was not statistically significant (p>0.05).

Table 4.34.

Mean Values for College Freshmen's MSs in Accordance with English Writing Levels When they Started High School

Levels	n	$\bar{x}$	SD	F	p
Beginner level	206	102.403	10.189	0.129	0.879
Elementary level	168	102.839	9.688		
Int. level	56	102.125	13.634		

Regarding the ANOVA conducted in order to determine whether the mean values for the students' MSs had a significant difference in terms of their English writing levels when they started high school, the results showed no statistically significant difference among the group means (p>0.05).

4.9. Mean Values for College Freshmen's MSs in Terms of their Present English Levels and Discussions

The mean values for college freshmen's MSs in accordance with their present English levels are presented in tables 4.35, 4.36, 4.37, 4.38 and 4.39.

Table 4.35.

Mean Values for College Freshmen's MSs in Accordance with Their Present English Listening Levels

Levels	n	$\bar{x}$	SD	F	p
Beginner level	16	102.438	8.524	0.476	0.622
Elementary level	240	102.113	10.897		
Int. level	174	103.132	10.097		

As a result of the ANOVA conducted in order to determine whether the mean values for the students' MSs had a significant difference in accordance with their present English listening levels, it was found that the difference among the means of the groups was not statistically significant ($p>0.05$).

Table 4.36.

Mean Values for College Freshmen's MSs in Accordance with their Present English Speaking Levels in Conversation

Levels	n	$\bar{x}$	SD	F	p
Beginner level	33	99.303	9.541	1.790	0.168
Elementary level	262	102.962	9.707		
Int. level	135	102.504	12.005		

As a result of the ANOVA conducted in order to determine whether the mean values for the students' MSs had a significant difference in accordance with their present English speaking levels in conversation, it was found that there was no statistically significant difference among the means of the groups ($p>0.05$).

Table 4.37.

Mean Values for College Freshmen's MSs in Accordance with their Present English Reading Levels

Levels	n	$\bar{x}$	SD	F	p
Beginner level	15	97.200	13.950	2.214	0.110
Elementary level	159	102.327	11.084		
Int. level	256	102.981	9.820		

Regarding the ANOVA conducted in order to determine whether the mean values for the students' MSs had a significant difference in terms of their present

English reading levels, the results showed no statistically significant difference among the group means (p>0.05).

Table 4.38.

Mean Values for College Freshmen's MSs in Accordance with their Present English Oral Expression Levels

Levels	n	$\bar{x}$	SD	F	p
Beginner level	43	100.279	11.628	1.222	0.296
Elementary level	250	102.600	9.602		
Int. level	137	103.131	11.602		

As a result of the ANOVA conducted in order to determine whether the mean values for the students' MSs had a significant difference in accordance with their present English oral expression levels, it was found that the difference among the means of the groups was not statistically significant (p>0.05).

Table 4.39.

Mean Values for College Freshmen's MSs in Accordance with their Present English Writing Levels

Levels	n	$\bar{x}$	SD	F	p
Beginner level	28	99.500	11.762	1.275	0.280
Elementary level	207	102.652	10.382		
Int. level	195	102.851	10.402		

The result of the ANOVA conducted in order to determine whether the mean values for the students' MSs had a significant difference in accordance with their present English writing levels indicated that the difference among the means of the groups was not statistically significant (p>0.05).

4.10. Mean Values for College Freshmen's MSs in Terms of their Attendance to Certain Courses and Discussions

The mean values for college freshmen's MSs in accordance with their attendance to certain courses are presented in tables 4.40, 4.41, 4.42 and 4.43.

Table 4.40.

Mean Values for College Freshmen's MSs in Accordance with their Attendance to the Contextual Grammar-I Course

Percentages of attendance	**n**	**$\bar{x}$**	**SD**	**F**	**p**
More than 80%	208	103.582	9.890	2.010	0.112
80% - 60%	118	102.492	11.135		
59% - 30%	52	100.539	10.293		
Less than 30%	52	100.462	11.198		

Regarding the ANOVA conducted in order to find out whether the mean values for the students' MSs had a significant difference in terms of their attendance to the Contextual Grammar-I course, the results found showed no statistically significant difference among the group means ($p>0.05$).

Table 4.41.

Mean Values for College Freshmen's MSs in Accordance with their Attendance to the Listening and Pronunciation-I Course

Percentages of attendance	**n**	**$\bar{x}$**	**SD**	**F**	**p**	**Difference**
More than 80%	276	103.326	10.028	2.905	**0.035**	**1 > 3**
80% - 60%	112	102.152	11.189			
59% - 30%	29	97.793	11.484			
Less than 30%	13	99.692	9.214			

The result of the ANOVA conducted in order to determine whether the mean values for the students' MSs had a significant difference in accordance with their attendance to the Listening and Pronunciation-I course indicated that the difference among the means of the groups was statistically significant ($F=2.905$; $p=0.035<0.05$). In order to determine the source of the differences, a complimentary post-hoc analysis was used. It was found that the metacognitive skill scores of the students whose attendance to the Listening and Pronunciation-I course was more than 80% (103.326 ± 10.028) were more than the metacognitive skill scores of the students whose attendance to the Listening and Pronunciation-I course was between 59% and 30% (97.793 ± 11.484).

Table 4.42.

Mean Values for College Freshmen's MSs in Accordance with their Attendance to the Advanced Reading and Writing-I Course

Percentages of attendance	**n**	**$\bar{x}$**	**SD**	**F**	**p**	**Difference**
More than 80%	264	103.466	10.218	3.847	**0.010**	**1 > 3**
80% - 60%	122	102.246	10.577			
59% - 30%	38	97.947	11.491			
Less than 30%	6	96.667	4.033			

As a result of the ANOVA conducted in order to determine whether the mean values for the students' MSs had a significant difference in accordance with their attendance to the Advanced Reading and Writing-I course, it was found that the difference among the means of the groups was statistically significant (F=3.847; p=0.010<0.05). A complimentary post-hoc analysis was used to determine the source of the differences. It was found that the metacognitive skill scores of the students whose attendance to the Advanced Reading and Writing-I course was more than 80% (103.466 ± 10.218) were more than the metacognitive skill scores of the students whose attendance to the Advanced Reading and Writing-I course was between 59% and 30% (97.947 ± 11.491).

Table 4.43.

Mean Values for College Freshmen's MSs in Accordance with their Attendance to the Oral Communication Skills-I Course

Percentages of attendance	**n**	**$\bar{x}$**	**SD**	**F**	**p**
More than 80%	268	102.869	9.953	1.259	0.288
80% - 60%	108	102.852	10.615		
59% - 30%	35	99.286	13.321		
Less than 30%	19	102.053	11.188		

Regarding the ANOVA conducted in order to determine whether the mean values for the students' MSs had a significant difference in terms of their attendance to the Oral Communication Skills-I course, the results showed no statistically significant difference among the group means (p>0.05).

4.11. Correlation Analyses and Discussions

Table 4.44 summarizes the relationship between the MSs and the mean of the students' scores on certain courses' midterms and their final scores in the first term.

Table 4.44.

The Relationship between the MSs and the Mean of the Students' Scores on Certain Courses' Midterms and their Final Scores in the First Term

Mean values for the students' courses		**MSs**
The Mean of their Scores on the Contextual Grammar-I Course	r	0.169**
	p	0.000
The Mean of their Scores on the Advanced Reading and Writing-I Course	r	0.152**
	p	0.002
The Mean of their Scores on the Listening and Pronunciation Course	r	0.117*
	p	0.015
The Mean of their Scores on the Oral Communication Skills-I Course	r	0.071
	p	0.139

As shown in Table 4.44, there is a statistically significant relationship between the mean of the students' scores on the Contextual Grammar-I course and the MSs (r=0.169; p=0,000<0.05). Accordingly, as the mean of their scores on the Contextual Grammar-I course increases, the MSs also increase.

A statistically significant relationship was found between the mean of the students' scores on the Advanced Reading and Writing-I course and the MSs (r=0.152; p=0.002<0.05). Therefore, it can be said that the MSs increase with a rise in the mean of their scores on the Advanced Reading and Writing-I course.

There is also a statistically significant relationship between the mean of the students' scores on the Listening and Pronunciation-I course and the MSs (r=0.117; p=0.015<0.05). Accordingly, as the mean of their scores on the Listening and Pronunciation-I course increases, the MSs also increase.

There is no statistically significant relationship between the mean of the students' scores on the Oral Communication Skills-I and the MSs.

CHAPTER FIVE

5. CONCLUSION AND SUGGESTIONS FOR FURTHER RESEARCH

This chapter includes conclusions, implications and suggestions for further research based on the findings of the research.

5.1. Conclusion

The current study was conducted to determine the level of metacognitive skills acquired by 1st year college students in the Department of English Language Teaching by means of Metacognitive Skills Scale, to examine the differences in the level of the students' metacognitive skills and to clarify the contribution of metacognitive knowledge and metacognitive strategy use in these students' achievements in English.

The independent variables that were thought to affect the students' levels of MSs consisted of the universities that they attended, the teaching programs, the students' ages and GENDs, the high schools that they attended, the students' participation in a preparatory program at university, the students' satisfaction with learning English as a FL, the students' levels of English when they started high school, the students' present English levels, the students' attendance to certain courses (Contextual Grammar-I, Advanced Reading & Writing-I, Listening and Pronunciation-I, Oral Communication Skills-I), and the mean of the students' scores on these courses' midterms and their final scores in the first term. The associations among these variables and the students' levels of MSs were analyzed.

Correlation analysis showed that there was no statistically significant correlation between the students' levels of MSs and their achievement in the Oral Communication Skills-I course, while there was a significant positive correlation between the achievement in the courses of Contextual Grammar-I, Advanced Reading and Writing-I, Listening and Pronunciation-I and the students' levels of MSs. It was revealed that there is a significant positive correlation between English language achievement of the

students and their levels of MSs. This finding was in line with Kummin and Rahman's (2010) assertion that proficient and less proficient English language learners differ in the use of metacognitive strategies in that proficient English language learners have much more metacognitive skills than the others.

In the present study, the ANOVA was conducted to investigate the associations between the independent variables and the students' levels of MSs. The analysis indicated that there were no significant positive associations between the universities that the students attended, the teaching programs, the students' ages, the high schools that they attended, their participation in a preparatory program at university, their satisfaction with learning English as a FL, their levels of English when they started high school, their present English levels, and their levels of MSs. However, gender differences and the students' attendance to the Listening and Pronunciation-I and Advanced Reading and Writing-I courses were found to be positively related to the students' levels of MSs. Empirical studies indicated that there were gender differences on behalf of girls in using MSs better. The current study failed to indicate significant associations between the students' attendance to the Contextual Grammar-I and Oral Communication Skills-I courses, and the students' levels of MSs.

5.2. Pedagogical Implications

The results of this study clarify the need for a systematic and structured metacognitive instruction in our schools' and universities' curriculum. More specifically, the present study demonstrated that students with good metacognitive skills are more successful than students with poor metacognitive skills. Therefore, teachers may prepare educational settings and tasks that encourage students to use metacognitive strategies. This suggestion is in line with Garner and Alexander's (1989) assertion that "Metacognitive strategies should be embedded in assignments and classroom activities across the curriculum at every level of instruction" (p. 8). Similarly, curriculum developers may include classroom activities in curriculum to promote metacognitive strategies. Moreover, the acquisition of metacognitive skills may provide a solid ground for a lifelong learning.

5.3. Suggestions for Further Research

In the present study, the role of MK and MLSs in tertiary level EFL students' language learning was examined. However, there may be some recommendations for further research illuminated by the results of the present study**.** More research is required with different variables, education levels and departments. Similar research with a pretest-posttest design may be much different.

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APPENDICES

APPENDIX -1-

YÜRÜTÜCÜ BİLİŞ BECERİLERİ ÖLÇEĞİ

Sayın katılımcı,

Bu çalışmanın amacı üniversite öğrencilerinin Yürütücü Biliş Becerilerini ölçmektir. Yürütücü Biliş Becerileri, öğrencilerin kendi öğrenme yollarının farkında olması, öğrenmesini başarılı olacağı şekilde düzenlemesidir. Ölçek ifadelerinde yer alan "Öğrenme stratejileri"; öğrenmeyi kolaylaştıran, öğrendiğimiz bilgilerin hatırlanmasını ve kullanılmasını kolaylaştıran, öğrenme esnasında kullandığımız yollardır. Örneğin; bir okuma parçasını çalışırken özetini çıkarmak, metnin kenarlarına kısa notlar almak, önemli yerlerin altını çizmek, şematize etmek veya tablolaştırmak vb.

Aşağıdaki maddeleri cevaplayarak vereceğiniz bilgiler, sadece araştırma amacıyla kullanılacağından isim belirtmeniz gerekmemektedir. Verdiğiniz cevaplar araştırmacı dışında kimse tarafından görülmeyecektir. Sizden, bu ifadeleri okuyup karşılarındaki seçeneklerden kendinize en uygununu işaretlemeniz beklenmektedir. Vereceğiniz samimi cevaplar bu araştırmanın güvenilirliği açısından son derece önemlidir. Lütfen her ifadeye mutlaka tek yanıt veriniz ve boş bırakmayınız.

Örnek:

	Kesinlikle katılmıyorum	**Katılmıyorum**	**Kararsızım**	**Katılıyorum**	**Tamamen katılıyorum**
Ders çalışırken müzik dinlemeyi severim		X			

Katkılarınız için teşekkürler

Gökhan ÖZTÜRK

Atatürk Üniversitesi Eğitim Bilimleri Enstitüsü

Yabancı Diller Eğitimi Anabilim Dalı

	Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Tamamen katılıyorum
1.Hangi konuları kolaylıkla öğrenebileceğimi, hangilerini öğrenirken zorlanacağımı bilirim.					
2.Öğrenme gerçekleşmediğinde etkili olabilecek başka stratejileri araştırırım.					
3.Öğrenme sırasında bilgiyi hangi koşullarda öğrendiğimi, hangi koşullarda öğrenemediğimi belirlemekte zorlanırım.					
4.Bir konuyu çalışmadan önce eleştirel bir biçimde düşünerek plan yaparım.					
5.Bir konuyu öğrenirken öğrenmede gerekli olan ortamı hazırlarım.					
6.Bir dersi öğrenirken kullandığım öğrenme stratejilerinin, başka hangi derslerde de işe yarayabileceğini bilirim.					
7.Öğrenmede kullandığım çalışma planımı yeniden gözden geçirip gerekli düzeltmeleri yaparım.					
8.Öğrenme sırasında neyi ne kadar öğrendiğimi izlemeye pek zaman ayırmam.					
9.Bir konuyu öğrenirken kullandığım öğrenme stratejilerinin işe yaramadığı durumlarda yenilerini kullanırım.					
10.Öğrenme sırasında ne zaman yardım istemem gerektiğini bilirim					
11.Bir konuyu öğrenirken onu iyi anlayıp anlamadığımı kontrol ederim.					
12.Bir konuyu öğrenirken zamanı etkili kullanıp kullanmadığımı kontrol ederim.					
13.Bir konuyu öğrenirken sonuca ulaşıncaya kadar dikkatimi sürdürecek biçimde koşulları düzenlerim.					
14.Bir konuyu ne kadar sürede öğreneceğimi bilirim.					
15.Öğrenme sırasında yaptığım hataları belirlerim.					
16.Bir konuyu öğrenirken hangi öğrenme stratejisini nasıl kullanmam gerektiğinin farkında değilim.					
17.Derse çalışırken kullandığım öğrenme stratejilerini gözden geçirip düzeltirim.					
18.Bir konuyu öğrenirken başarısız olduysam, başarısızlığın nedenlerini araştırırım.					
19.Öğrenme sırasında öğrenilen konular arasında anlamlı ilişkiler kurmak benim için önemlidir.					
20.Kendi öğrenme özelliklerime göre bir konuyu nasıl öğreneceğimi planlamakta güçlük çekerim.					
21.Öğrenme sırasında kullandığım öğrenme stratejilerinin işe yarayıp yaramadığını değerlendiririm.					
22.Öğrenmemi nasıl organize edeceğim konusunda pek bir fikrim yoktur.					
23.Konuyu iyi şekilde öğrenmeme yardımcı olacak kaynakları ne zaman ve nasıl kullanacağımı planlarım.					
24.Öğrenme sırasında karşılaştığım güçlüğün nedenini anlamada zorlanırım.					
25.Herhangi bir şeyi öğrenirken onu en etkili şekilde nasıl öğrendiğimi araştırırım.					
26.Ders çalışmaya başlamadan önce hangi öğrenme stratejisini kullanmam gerektiğini belirlerim.					
27.Zaman zaman öğrendiklerimi gözden geçirmeyi, neyi ne kadar öğrendiğimi belirlemek açısından önemserim.					
28.Yeni öğrenmelerimi düzenlerken önceki kazandığım deneyimlerden yararlanırım.					
29.Bir konuyu çalışmaya başlamadan önce o konuyla ilgili neler öğreneceğimi belirlerim.					
30.Metin veya öğrenme birimi ile ilgili önemli bilgileri ayırt etmede zorlanırım.					

APPENDIX -2-

Sınıfınız: I. Öğretim □ II. Öğretim □

Yaşınız:……

Cinsiyetiniz: Kız □ Erkek □

Mezun olduğunuz lise türü:……

Liseye başladığınızda İngilizce seviyeniz:

Düzeyler	**Anlama**		**Konuşma**		**Yazma**
	Dinleme	Okuma	Karşılıklı konuşma	Sözlü anlatım	
Temel düzey	□	□	□	□	□
Orta düzey	□	□	□	□	□
İleri düzey	□	□	□	□	□

Üniversitede hazırlık eğitimi aldınız mı? : Evet □ Hayır □

Yabancı dil olarak İngilizce'yi öğreniyor olmaktan mutluyum: Evet □ Hayır □

Şimdiki İngilizce seviyeniz:

Düzeyler	**Anlama**		**Konuşma**		**Yazma**
	Dinleme	Okuma	Karşılıklı konuşma	Sözlü anlatım	
Temel düzey	□	□	□	□	□
Orta düzey	□	□	□	□	□
İleri düzey	□	□	□	□	□

I. dönemde aldığınız aşağıdaki derslerin vize ve final not ortalamaları:

		Bu derslere devam durumu			
Dersler	**I. dönemdeki vize ve final ortalaması**	**%80'den fazla**	**%80 - %60**	**%59 - %30**	**%30'dan az**
1.Bağlamsal Dilbilgisi I		□	□	□	□
2.İleri Okuma ve Yazma I		□	□	□	□
3.Dinleme ve Sesletim I		□	□	□	□
4.Sözlü İletişim Becerileri I		□	□	□	□

CURRICULUM VITAE

PERSONAL INFORMATION

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Place / Date of Birth : Avanos – 07.03.1987

EDUCATIONAL BACKGROUND

Undergraduate Degree : Selçuk University - 2009

Graduate Degree : Atatürk University - 2014

Foreign Language(s) : English - German

WORK EXPERIENCE

Training Courses Attended : Project Cycle Management Course

Projects :

‘’Donation Project of Kaşgarlı Mahmut Education Center’’ (TR 07H2.01-02 Lifelong Learning Program, Dosier no: LLL/83) granted by CFCU, Grant amount (€) 143.520,00

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Ardahan University Presidency, English Lecturer, 2009 - 2012
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