T.C. KOCAELİ ÜNİVERSİTESİ
SOSYAL BİLİMLER ENSTİTÜSÜ
YABANCI DİLLER EĞİTİMİ ANABİLİM DALI
İNGİLİZ DİLİ EĞİTİMİ BİLİM DALI

AN IMPLEMENTATION OF COMPUTERIZED DYNAMIC ASSESSMENT ON READING COMPREHENSION IN A TURKISH EFL SETTING

YÜKSEK LİSANS TEZİ

AYÇA ÜNAL

KOCAELİ 2021

T.C. KOCAELİ ÜNİVERSİTESİ
SOSYAL BİLİMLER ENSTİTÜSÜ
YABANCI DİLLER EĞİTİMİ ANABİLİM DALI
İNGİLİZ DİLİ EĞİTİMİ BİLİM DALI

AN IMPLEMENTATION OF COMPUTERIZED DYNAMIC ASSESSMENT ON READING COMPREHENSION IN A TURKISH EFL SETTING

YÜKSEK LİSAN TEZİ

AYÇA ÜNAL

Doç. Dr. Doğan YÜKSEL

Tezin Kabul Edildiği Enstitü Yönetim Kurulu Karar ve No:

10.03.2021/7

KOCAELİ 2021

DEDICATION

I dedicate this thesis to my mother and my sister for their unconditional love and their dedicated partnership for success in my life. Also, I dedicate it to anyone who asks me 'when will you finish your thesis?'.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

ÖZET

Dinamik Değerlendirme Vygotsky'nin Sosyo-kültürel teorisinden ve onun yakınsal gelişim alanı kavramından doğmuştur. Geleneksel değerlendirmenin aksine; Dinamik değerlendirme, değerlendirme süreci sırasında öğretim ve değerlendirmeyi bileştirir. Başka bir değişle; Dinamik değerlendirme, değerlendirme sürecine aracılar dâhil eden etkileşimli bir yaklaşımdır. Bilgisayarlı Dinamik değerlendirme ise aracıları elektronik olarak sunan son zamanlarda da popüler olan bir alandır. Böylece, öğrencilere değerlendirme esnasında hata yaptıklarında otomatik aracılar sağlar. Bilgisayarlı Dinamik değerlendirme Dinamik değerlendirmeden bazı noktalarda üstünlük sağlar örneğin, Bilgisayarlı Dinamik değerlendirme aynı anda çok sayıda öğrenciye uygulanabilir.

Bilgisayarlı Dinamik değerlendirmenin öğrencilerin performansları üzerindeki etkisini bulmaya çalışan mevcut çalışma literatürdeki Türkiye'de çalışılmış Bilgisayarlı Dinamik değerlendirme boşluğunu doldurmayı amaçlar. Bu amacı gerçekleştirmek için, hazırlık sınıfından 4. Sınıfa kadar olan Kocaeli Üniversitesi İngiliz Dili Eğitimi bölümündeki öğrencilerle çalışılmıştır. Toplamdaki 92 katılımcının 33'ü erkek, 59'u kadındır. Bilgisayarlı Dinamik değerlendirme öğrencilere Bilgisayar ve Bilişim Teknolojileri Eğitimi bölümünde yer alan 30 bilgisayarla ayrı ayrı uygulanmıştır. Uygulamadan sonra katılımcıların gerçek, aracılı ve öğrenci-potansiyel puanları hesaplanmış ve SPSS programında tablolanmıştır. Wilcoxon işaretli sıralar testi katılımcıların gerçek ve aracılı puanları arasında anlamlı farkın olup olmadığını bulmak için kullanılmıştır. Dahası, farklı sınıftaki öğrencilerin arabuluculuk seviyeleri ve öğrenci-potansiyel puanları arasındaki farklılıkları irdelemek için tanımlayıcı analiz kullanılmıştır. Wilcoxon işaretli sıralar testi bulgularına göre, gerçek ve aracılı puanları arasında istatistiksel olarak anlamlı bir fark bulunmuştur. Ancak tanımlayıcı analiz sonuçları, farklı sınıf düzeylerinin ortalamaları ve arabuluculuk seviyelerini kullanım sıklıklarının benzerliğini ortaya koymuştur.

Anahtar Kelimeler: Dinamik Değerlendirme, Bilgisayarlı Dinamik Değerlendirme, Yabancı Dil olarak İngilizce

ABSTRACT

Dynamic Assessment roots from Vygotsky's Sociocultural Theory and his concept of the zone of proximal development. Unlike the traditional assessment, Dynamic Assessment integrates assessment and instruction during the assessment process. In other words, DA is an interactive approach that includes mediation within the assessment procedure. Computerized Dynamic Assessment is a recently popular area that provides mediation electronically. So, it provides automatized mediation to the learners when they have a mistake during the assessment. C-DA outperforms DA at some point, for instance, it can be implemented to large numbers of students simultaneously.

The present study aims to make a contribution to the related literature on computerized dynamic assessment in the Turkish context which also seeks the effect of it on the performance of the students. To achieve this goal, it is conducted with the students of the English Language Teaching Department at Kocaeli University who are from the preparatory class to the 4th graders. There are 92 participants in total 33 of them are male, 59 of them are female. C-DA has applied them individually with thirty computers placed in the Computer and Information Technologies Teaching Department. After the implementation, the actual, mediated, and learner potential scores of participants are calculated and then tabulated to the SPSS program. Wilcoxon signed-rank test is used to investigate whether there is a significant difference between actual and mediated scores of the participants. Moreover, descriptive analysis was used to analyze the degree of differences among students from different grades in terms of the level of mediations, and LPSs. According to the findings of the Wilcoxon signed-rank test, there is a statistically significant difference between the actual and mediated scores of students. But the results of the descriptive analysis revealed the similarities among the students from different grades, their means of mediations, and LPS scores.

Keyword: Dynamic Assessment, Computerized Dynamic Assessment, EFL

ABBREVIATIONS

C-DA: Computerized Dynamic Assessment

DA: Dynamic Assessment

EFL: English as a Foreign Language

ELT: English Language Teaching

FL: Foreign Language

L1: First Language

L2: Second Language

SCT: Sociocultural Theory

ZAD: Zone of Actual Development

ZPD: Zone of Proximal Development

LIST OF TABLES

LIST OF EXCERPTS

LIST OF FIGURES

LIST OF APPENDICES

INTRODUCTION

Dynamic Assessment is a relatively new perspective of assessment that units teaching and learning practices instead of considering them as separate activities (Lidz & Gindis, 2003). It is considered to be first enlarged by Feuerstein who uses DA with low achievers to reveal their potential levels (Feuerstein, Rand, & Hoffman, 1979 cited in Anton, 2009) while the first assertor is Vygotsky who put forward this concept in his Sociocultural understanding. According to the interpretation of Vygotsky's Sociocultural theories, individuals' abilities develop when the needed assistance is given on the time that they cope with difficult tasks. This help can be provided by a teacher, electronic mediator, or a novice during the DA process. DA is a product that is rooted in the concepts of Sociocultural Theory. So, the present study will address the main components of Sociocultural theory in a detailed way in the next chapter.

The current study is conducted at Kocaeli University with the students of the English Language Teaching Department from different grades. They are ranging from the preparatory class to the 4th graders. The studies of review of dynamic assessment literature showed that even if there are some researches on DA in the last decade (Çalış, 2018; Şentürk, 2019; Yılmaz-Yakışık, 2012), Computerized Dynamic Assessment has not been searched enough in the Turkish context. The main goal of this application is to investigate whether C-DA has a significant effect on the performance of the learners on reading comprehension questions.

Interventionist cake format is used in the present study which provides immediate mediation when the learners struggle. Thus, the first step of this study is designing the mediations which are determined with a pre-study applied to a small number of students to analyze their difficulties in the Interactionist form. The researcher and her supervisor determined five steps for the mediation session. The C-DA implementation is administered in five sessions. After the application, the data are analyzed both quantitatively and qualitatively. The actual, mediated, and learner potential scores are calculated and a Pearson correlation is run to find out the relationship between them. Moreover, the Wilcoxon signed-rank test is applied to ascertain the significant difference between actual and mediated scores of learners. To

unravel the relation among learners from different grades, the frequencies, means of mediation scores, LPSs, actual scores, and percentages of them are calculated.

The results showed that when the learners are supported by mediations, most of them give the correct answer. Moreover, this data presents important information on the individual differences of the students in terms of their development levels in this way C-DA outperforms static assessment. The findings of the Wilcoxon signed-rank test indicate the significant difference between actual and mediated scores of students so, this is evidence for the effectiveness of the DA concept to their Zone of Proximal Developments. Furthermore, the results unveiled similarity among the students from different grades in terms of their mediations, frequency preferences, and their means of LPS scores. Contrary to what is believed the result among these scores of different graders and other variables are almost the same.

CHAPTER I

1. INTRODUCTION

1.1 INTRODUCTION

The main aims of this thesis are to find out whether the application of Computerized Dynamic Assessment in reading comprehension questions affects the scores of the students. The present chapter is formed under the six major topics such as; the background of the research, statement of the problem, the significance of the research, aim of the research, research questions, and operational definitions.

1.2. BACKGROUND OF THE RESEARCH

Assessment is categorized into three groups: pre-assessment, summative assessment, and formative assessment. The first type of assessment form is pre-assessment is applied before the instruction, formative assessment means assessment during the instruction and summative assessment is the assessment after instruction. All types of it are seen as evidence to see how well the students have learned also, they guide the teacher in deciding instructional design. According to the purpose of the assessment, two kinds of perspective to assessment shape; assessment of learning and assessment for learning. Assessment of learning is a vehicle to understand the performance of the student while assessment for learning creates feedback for the teachers to adjust their teaching.

Dynamic Assessment (hence after DA) is a new type of understanding that teaching and learning have not been considered as separate activities but instead integrated (Lidz & Gindis, 2003). The historical background of this integration dates back to the Sociocultural understanding of Vygotsky. According to Vygotsky, the

abilities of individuals come out when different types of assistance are provided to them while they are struggling with difficult tasks. Sociocultural Theory (hereafter SCT) emphasizes the importance of social interaction in the development of higher psychological functions. Lantolf and Thorne (2006) explain SCT as even though the neurobiological functions of a human being are a necessary requirement to higher-order thinking, the activities which are the most essential types of human cognitive activity enhance with the help of the social and material environments. Such social environments can be peer groups, school activities, and organized activities. In another word, all social interactions are necessary to increase cognitive ability and achieve high development.

Zone of Proximal Development (hereafter ZPD), is an abstract area in which a learner and an expert can co-construct knowledge with the help of the interaction among learners and with interlocutors or in private speech (Lightbown & Spada, 2006). In short, it is thought that learners may overcome a more demanding task when the support is provided by an adult or a peer. According to Vygotsky (1978), ZPD both indicates the measure of the students' development with the guidance of a teacher or a novice and their future unguided performances.

Mediation is an important tool to move forward within the ZPD. Vygotsky claims that mediation enhances learners' learning experiences by helping to select and shape them. SCT regards language as an important mediator (Vygotsky, 1986). The basic role of the mediator is to support the learners with prompts and hints. So, with the mediation of language, teachers can support the development of the learners.

The zone of proximal development can be defined as the concretization of the abstract concept of the zone of proximal development with the help of the scaffolding. Scaffolding is usually known as help, assistance, and guidance from novice to learners. Wells (1999) states that as a result of successful scaffolding construction, learners achieve to complete the tasks easily which they have done before, or parallel types of tasks, on their own without any guidance. Mercer (1994) explains that the zone of proximal development and scaffolding terms consider teachers as the core element of language teaching.

Having the idea of all these concepts that are mentioned above DA has become a popular area in the field of second language testing. There are lots of studies conducted on DA in related literature (e.g., Alavi & Taghizadeh, 2014; Çalış, 2018; Derakhshan & Kordjazi, 2015; Kozulin & Grab, 2001; Mardani & Tavakoli, 2011; Şentürk, 2019; Thouësny, 2010; Yılmaz-Yakışık, 2012). In recent years, Computerized Dynamic Assessment (hereafter C-DA) has been receiving increasing attention. It has been seen as a practical way of DA application. It has a mediation system that enables it to administer a large number of learners at a time and to repeat it when necessary. C-DA has been conducting mostly in the assessment of reading (Pishghadam et al. in 2011; Teo (2012); Yang & Qian (2017).

1.3 STATEMENT OF THE PROBLEM

In static assessments, students are assessed and at the end of the process they receive a test score, and most of the students are focused on the score rather than their wrong answers. Also, giving feedback and treatment on the missing points sessions are usually ignored. Grab (2009) pointed out that the goal of assessment for learning helps to enhance reading skills. So, it is important to supply feedback immediately to get higher performance. In this regard, the predetermined mediations of a dynamic assessment can help to improve reading comprehension abilities.

The studies on DA in literature are generally small-scale studies. In other words, the number of participants is limited because of the time-consuming interaction part between the mediator and students. Recent studies (e.g., Pishghadam et al., 2011; Poehner & Lantolf, 2013; Tzuriel & Shamir, 2002) showed that there is a tendency to overcome this limitation with the application of Computerized Dynamic Assessment which is using predetermined electronic mediations. In doing so, it makes it available to administer it to a large number of participants at the same time.

1.4 SIGNIFICANCE OF THE RESEARCH

To date, a limited number of DA studies have been published on the assessment of reading comprehension skills. Also, even with the increasing number of C-DA

studies abroad, there are not many studies in the national scope. The researchers in Turkish context have studied speaking skills (Yılmaz-Yakışık, 2012), grammar and metasyntactic awareness (Çalış, 2018; Şentürk, 2019). Therefore, this study aims to make a contribution to related literature by conducting preliminary research that seeks the degree of effect of C-DA application on the reading comprehension skills of students. Also, both qualitative and quantitative methods are used for the detailed analysis of the C-DA process of the participants in the Turkish context. Furthermore, this study aims to investigate the effects of C-DA application on different groups namely, from preparatory class to 4th graders. This contributes to C-DA literature in terms of analyzing its effects on a wide range of participants.

1.5. AIM OF THE RESEARCH

The present study is conducted at Kocaeli University, English Language Teaching Department. The students range from the preparatory class to the 4th graders. They have approximately 20 hours of English each week. Also, English is the medium of instruction. The review of the literature on C-DA showed that more studies were needed in this line. Inspired by the previous studies on literature, this study aims to administer the C-DA concept to Turkish EFL learners and tries to find out the significant effect on the performance of the students.

1.6. RESEARCH QUESTIONS

The present study tries to answer the questions below:

1.   What are the effects of C-DA on evaluating participants' abilities in reading comprehension questions?

2.   Is there a significant difference between the results of actual and mediated scores?

3.   Do different graders differ in their level of mediation and LPS?

1.7. OPERATIONAL DEFINITIONS

1.7.1 Dynamic Assessment

Unlike the traditional way of assessment, Dynamic Assessment combines teaching and assessment. Also, DA is not only a procedure to bring out students' actual level of development but also shows their potential level of development. Poehner and Lantolf (2005) state that "DA is mostly in line with future-in-the-giving evidence of development" (p. 237). Poehner (2008) defines that DA as a collaboration of assessment and instruction while providing spoilers of the students' development through the activities.

1.7.2 Computerized Dynamic Assessment

Computerized Dynamic Assessment integrates Interactionist and non-dynamic Assessment forms by offering mediations that students needed meanwhile not lack of statistical necessities of tests (e.g., validity) on the behalf of the standardized mediations (Poehner, 2008).

C-DA approach roots from the interventionist model of Dynamic Assessment that has the capability to administer the test to a large number of learners so in terms of this opportunity it gains an advantage over Dynamic Assessment.

1.7.3 Zone of Proximal Development

According to the most cited definition of Zone of Proximal Development, which is stated by Vygotsky (1986), the ZPD is a determinant of how their actual development which indicates their unassisted performance of learners are far away from their potential levels which shows their assisted performance (as cited in Aljaafreh & Lantolf,1994). They stated the distance between these two performances as a zone of proximal development which is a signal for the future level of students.

1.7.4 Scaffolding

The term scaffolding is defined as the help given to learners while tackling difficult tasks to construct buildings (Wood et al., 1976). In another way, the scaffolding term is explained by Wells (1999) as a way of actualization of Vygotsky's zone of proximal development metaphor.

CHAPTER II

2. LITERATURE REVIEW

2.1. INTRODUCTION

This chapter consists of a review of DA which aims to integrate assessment and instruction from a Vygotskian perspective. And then, the sociocultural theory and its components like Zone of Proximal Development, mediation, self, and other regulation are discussed. Following, the models of dynamic assessment and the studies on dynamic assessment are described. Finally, the development of reading comprehension through Dynamic Assessment and the studies in this area are reviewed.

2.2. VYGOTSKY'S SOCIOCULTURAL THEORY OF MIND

The Russian psychologist Vygotsky and his colleagues developed the Sociocultural Theory in the 1920s and 1930s. This theory emphasized the interaction between people and the culture where they live. One of the main sources of this theory was Marxist philosophy (Poehner, 2008). They accepted Marx's ideas on human beings are shaped by their environments through mediation by physical and cultural tools (Leont'ev, 1981). According to the review of Lantolf, Thorne, and Poehner (2015);

The starting point of Vygotsky's developmental studies was the three core principles of Marxist theory:

The first idea is that human consciousness is not only fundamentally biological but also social, in its nature; secondly, human activity is mediated by the symbolic tools, material artifact and psychological; thirdly, parts of investigation of the understanding human activity and development should be from a holistic perspective in nature (pp. 207-226).

Social interaction is not only the essential one in the development of cognition (Vygotsky, 1978) but also is an important factor in the process of "making meaning". Another important name on the development of cognition was the Swiss Psychologist Jean Piaget, but their ideas differed from each other at some point. Whereas Piaget believed that the development of children must go before their learning, Vygotsky (1978) claimed that "learning is a necessary and universal aspect of the process of developing culturally organized, the specifically human psychological function" (p. 90). Unlike Vygotsky, Piaget put more emphasis on physical interaction rather than social interaction. Vygotsky had also a different view on the development of cognitive skills. According to him, not only biological factors are important for mental processes but he also finds sociocultural factors important for the development of cognitive abilities. Block (2003) summarized it as:

adopting a sociocultural perspective on human development also means taking what Vygotsky termed a 'genetic' approach to the study of mental activity, taking into account changes taking place at four different but interlocking levels. The first level is phylogenesis, which refers to the development of human beings…For Cole, Wertsch, and others of a sociocultural persuasion, these artifacts are cultural in nature. They are products of the interaction between a particular group of individuals in a particular setting and physical environment. And the second level is sociohistorical. This explains the observation that while all human beings engage in cultural mediation, they have different ways of doing so. The third level of sociocultural change is called microgenesis. This refers to changes occurring in mental functioning over the span of weeks, days, hours, or even seconds. (p.100).

According to this perspective, learning is the outcome of social interaction with a tutor. For instance; children use collaborative dialogues with the more knowledgeable members of the society to learn their culture. So, there is an exchange of experiences from expert to novice. In the school environment, the teacher is an experienced one as a source of knowledge or expected behaviors. For Vygotsky, language was a tool for communicating with the outside world. He claimed that (1962) through the development of cognition, language has two important critical roles. The first one is; it helps to transmit information from adults to children and the second one

is; it is a tool for intellectual adaptation. Also, he (1987) made a classification of the three different types of language; the first one is social speech which is the way of communication provides us to talk with each other; the second one is private speech which is directed to the self; and finally, private speech which goes on unclearly in a silent way, it plays roles as a self-regulatory and is turned into silent inner speech.

Moreover, SCT has a holistic approach towards teaching so it cannot be separated into parts. According to Turuk (2008), all skills and items must be taught with their complex forms, rather than present as isolated, discrete units. Similarly, Williams and Burden (1997) state that education is viewed not only consist of instruction but also it helps learners to know how to learn, in the end, it encourages them to be autonomous learners. In that point of view, the role of the teachers rather than just an instructor who presents the rules, their aim should be to reach their students to their own highest level of development.

2.2.1 ZPD

Zone of proximal development is one of the popular terms in sociocultural theory which was defined as the place remaining between the performances of students without guidance and the performance of learners revealed with the help of a novice or more knowledgeable peers by Vygotsky (1978). Basically, the ZPD means the difference between what learners can do with and without assistance from an expert. The "proximal" term refers to the skills that the learner is "close" to mastering. It represents the potential level of development under teacher guidance. Vygotsky (1998) clarified that a person's Zone of Actual Development is determined by their performance without help and he describes it as it doesn't regard the complete picture of the students' performances in terms of future development, rather than it just consists of the parts which are unnecessary to describe their whole. Van der and Valsiner (1991) claimed that formerly the ZPD appeared to be only in the traditional intelligence testing and then it was expanded as including the problems of cognitive development and education. At the same time, it was started to use as an alternative to IQ testing. For Vygotsky, both children's scores of the ZPD were associated with their

success in school, and also ZPD score was a better predictor of school performance than IQ score.

Even though, the zone of proximal development is a changeable target that moves forward when the student progress, it also gives a clue to the teacher on the future growth of the learner. According to Vygotsky (1978, p.87), ZPD allows us to gain insight into children' present, future, and their dynamic development level. We do not only observe a child's achievement but also through ZPD we can predict their level of development. The studies briefly explain the effectiveness of ZPD one of which by Woolfolk (2000) states that ZPD is an area where the learner cannot solve the problem by himself but with the guidance of a more expert one and this is where real learning becomes possible. In second language research, Aljaafreh and Lantolf (1994) used ZPD to reveal the association of corrective feedback and language learning in terms of learner-tutor interactions in an ESL context.

2.2.2 Mediation

As Lantolf (2001) stated another popular concept of the Sociocultural Theory is mediation. Humans have the special ability to create and use symbols like a vehicle to mediate their own psychological activity (Lantolf et al., 2015). Human beings have the ability to break beyond biological limitations. We cannot swim like a fish or cannot fly like a bird but we can design a machine that helps us to surpass the other animals. The physical tool that humans create mediates our relation. Vygotsky claimed that physical tools are externally controlled while symbolic tools are internally controlled.

Vygotsky (1978) borrowed these concepts from Hegel and Marx and he reported that Marx defined the term as a human being utilizes a tool in order to move it with help of either its mechanical, chemical or physical features to accomplish his objectives. According to Kozulin (1998), as Vygotsky differentiated there are three types of mediators: material tools, psychological tools, and other human beings. The role of psychological tools is to mediate the psychological processes of humans. The third type of mediation is through another individual. Private speech is a form of the self-directed use of language which is used as a symbolic tool for cognitive regulation (Lantolf & Thorne, 2006). In education, when students being mediated by a teacher,

they can achieve higher levels of development. According to Vygotsky (1986), mediation provides children to internalize their interaction where this social interaction with the mediator offers them an example that they can reconsider to develop their abilities.

2.2.3 Self and Other Regulation

The lexical meaning of the regulation based on the dictionaries is the control of an activity or process, usually by means of rules. In Sociocultural theory, regulation is a kind of mediation addressing children's capacity to adjust their own activities. Vygotskian theory explains that human cognitive development enhances through three stages. The first one is called object-regulation that commonly used by children to utilize objects in their environment in order to think. Moreover, as some researchers such as Wertsch and Hickmann (1987) indicate, although the learners have the ability to complete tasks on their own, they cannot carry on independent action whenever the main aim is not "directly suggested by the environment" (Wertsch, 1979a, p. 89). Secondly, the other-regulation term includes implicit and explicit mediation by parents, peers, and teachers. This type of linguistic mediation is generally combined with a dialogic speech that is accepted as the primary concern of carrying out other-regulation (Wertsch, 1979a, 1979b, as stated in Frawley & Lantolf, 1985). The third one is self-regulation which means the ability to complete activities with minimal assistance. In the Piagetian perspective, the concept of self-regulation is totally different. For Piagetian, self-regulation is a concept that already occurred in the early stages of infancy. Thus, self-regulation offers children some chances to make choices and decisions by providing enough time. Piagetian claims that regulation by others may cause the prevention of children's self-regulation. Vygotsky's self-regulation concept for L1 acquisition is implemented by some researchers in the L2 context.

2.2.4 Scaffolding

The scaffolding notion is at the center of the Vygotskian sociocultural theory and the Zone of Proximal Development concept (McDevitt & Ormrod, 2002; Krause et al., 2003). It can be defined as the realization of the concept of the zone of proximal

development which was defined by Bruner (1983) as a process of providing the child to involve easily and then giving support to the child to handle activity also in time decreasing the level of this support till the child overcome this problem on his own. Similarly, according to Wells (1999), the concept of scaffolding is not only operationalization but also the implication of teaching in the zone of proximal development, Daniels (2001) suggests that the notion of ZPD is a broader term that scaffolding is not able to reveal the whole the richness of it. Bruner (1978) investigates an example of the dialogue between the mother and the child in his study and he finds out some similar patterns in the behavior of the mother while talking to her child. First of all, the mother tries to make the tasks easier for the child; secondly, she makes effort to take the attention and maintain this attention of the child; thirdly, an example for the interaction is provided by the mother; fourthly she enhances the examples with another adult; fifthly, she makes observation for the unwillingness situations of the child; and in the end, she exemplifies the solution of the struggling situation. The zone of proximal development and scaffolding reveal the crucial role of the teacher throughout a second language learning span. While Wells (1999) emphasizes the role of scaffolding to help students to complete the task, or accomplish similar kind of tasks without any assistance, Hartman (2002) pays attention to an important feature of scaffolding as a way of teaching to facilitate students to be "self-regulated and independent".

2.3 ASSESSMENT AND INSTRUCTION FROM A VYGOTSKIAN PERSPECTIVE

The sociocultural theory presented a new perspective to second language acquisition. Another contribution to this field was to integrate teaching into learning. Unlike traditional assessment procedures which consist of teaching then assess and, in the end, give feedback sessions, it integrates mediation into the assessment process. So, we can say that rather than taking a photograph of the children's development it enables us to see not just their present level but also their future development. This perspective leads to the monistic view. The holistic perspective of integrated assessment and instruction offers mediation or graded forms of guidance to students with the aim of understanding their needs and enhance their development.

2.4 DYNAMIC ASSESSMENT

Assessment can be described as an information-gathering activity (Bailey, 1996) and as a form of assessment; Dynamic assessment is rooted in Vygotsky's (1978) zone of proximal development (ZPD). Vygotsky specifically did not mention any methods to apply his idea neither on teaching nor assessment. Assumptions on his ideas can be summarized as rather than only observing and recording the products of students, the main goal should be directing the assessors and teachers to support their students' development (Lantolf & Poehner, 2011). While traditional assessment does not include feedback from the teacher to learners according to the performance of the students, in the Dynamic Assessment process assessment and instruction are integrated. Thus, the interactive DA approach includes mediation during the assessment procedure. The non-dynamic assessment is described as (Sternberg & Grigorenko, 2002):

The examiner presents items, either one at a time or all at once, and each examinee is asked to respond to these items successively, without feedback or intervention of any kind. At some point in time after the administration of the test is over, each examinee typically receives the only feedback he or she will get: a report on a score or set of scores. By that time, the examinee is studying for one or more future tests. (p. 6)

Then they describe DA as:

It takes into account the results of an intervention. In this intervention, the examiner teaches the examinee how to perform better on individual items or the test as a whole. The final score may be a learning score representing the difference between pretest (before learning) and posttest (after learning) scores, or it may be the score on the posttest considered alone. (Sternberg & Grigorenko, 2002, p.6)

One of the important differences between dynamic assessment and nondynamic assessment is that DA focuses on the whole learning process, whereas nondynamic puts emphasis on the learning products. DA has a "monistic view of assessment and instruction that aims to develop abilities through intervention" (Lidz, 1991, p. 6). There

are two important features of Dynamic Assessment; the first one, instruction and assessment are inseparable and the second one, it constructs for future development.

All in all, DA aims to reach the test takers to a future development point rather than a fixed ending point. According to Lantolf and Thorne (2006), DA not only helps teachers to discover what the students enable to do but also provides information about how much their product is modifiable. DA can identify the potential development level of the ESL/EFL thus, it is generally used in the content of the ESL/EFL programs (Killen 2005; Spady 1994).

2.5 COMPUTERIZED DYNAMIC ASSESSMENT

Computerized dynamic assessment is a popular area that provides mediation electronically. It gives automatized responses to the learners when they have a mistake. Thus, C-DA overcomes the limitations of DA such as; it can be applied to large numbers of participants and they can be assessed again and again whenever it is needed. Moreover, the performance of the participants can be reported automatically. This kind of mediation has some limitations to tune the level according to the needs of the students. C-DA has question marks on whether the outcome would change when the different types of mediations are offered.

There is an increasing number of studies in the literature which will be discussed later in the Studies on DA part such as Thouësny (2014) used computerized dynamic assessment as an assessment tool of writing skill while Teo (2013) investigated the impact of C-DA on reading skills. Kozulin and Garb (2002) made a contribution to it by developing a scoring instrument to compare the learners' ZPD and ZAD which is called Learner Potential Score.

2.6. MODELS AND FORMATS IN DYNAMIC ASSESSMENT

2.6.1 Interventionist DA vs. Interactionist DA

Interventionist and interactionist are two general approaches to DA according to Lantolf and Poehner's (2004) proposal. Interventionist DA has differences from interactionist approaches at some point (Lantolf & Poehner, 2011). While interventionist includes predetermined mediations in the form of prompts which are decided in a hierarchical way from most implicit form (e.g., indicating the utterance is wrong) to most explicit form (e.g., giving the correct answer or explaining it in details) the mediation process in interactionist DA starts with implicit prompts which tries to direct the students to discover their own errors or self-correction in order to they take more responsibility for their performance, and in the end to make them autonomous learners. Besides, the mediator or the teacher gradually tunes the level of mediation to respond to the needs of the students and accomplish their enhancement. According to Poehner and van Compernolle (2013), in the meantime the interactionist approaches usually emphasize "the instructional function of DA", interventionist approaches put forward "the assessment function" by gauging the responsiveness of students to the level of mediation. The comparison between interventionist and interactionist formats is listed below (Table 1).

Table 1

Interactionist Approach	Interventionist Approach
-the small scale of participants	-the large scale of participants
-qualitatively analyzed	-quantitatively analyzed
-spoken language	-written or spoken the language
-individual	-group or individual

2.6.2 Sandwich Format and Cake Format

One of them is a sandwich format that can fit into the interventionist approach. There are three steps in the sandwich format: pre-test, mediation, and post-test. In the first step, which is a pre-test, learners are asked to complete some activities on their own then; in the second step, which is mediation, they are given instructions in

accordance with their needs or mistakes; and in the last step that is posttest, they are asked to solve activities again. As Poehner and Lantolf (2005, p.24) describe in the sandwich format of DA, the mediations are offered to learners between pre-test and post-test sessions. According to Poehner (2008), Feuerstein fully combined assessment and instruction together so that they do not fall apart. Feuerstein (2001, cited in Hessamy and Ghaderi, 2014) states that with the help of the intervention, human cognitive abilities can be changed or developed because they are not stable. The role of mediation is in the cake form of DA to be applied the necessary prompts while the assessment session is going on. It refers to the process which offers mediation when problems occur during the application of the assessment. In the study of Sternberg and Grigorenko (2002) it is explained as "the successive hints are provided the students like successive layers of icing on a cake and the number of hints varies across participants, but not the content of them" (p.27).

2.7 STUDIES ON DA

There are so many studies in the literature about Dynamic Assessment based on different types of skills. One of these was designed by Kozulin and Grab (2001) on reading comprehension. This study aimed to reveal the effects of the application of dynamic assessment to the L2 context. The participants were from the pre-academic center in a rural area in Israel. It consisted of 23 students and the test teach test paradigm was used in the process. First of all, a static reading comprehension test was given and the teacher reviews the test to indicate the level of mediation the students needed. In the end, they re-tested to analyze how well students took advantage of the mediation. The number of the students who were benefited from the mediation and applied the acquired strategies to the new text were stated according to findings. Another study on reading skills conducted by Derakhshan and Kordjazi (2015) which was investigated the effects of dynamic assessment implementation on reading comprehension assessment of the second language learners in Iran. The participants were 19 undergraduate students in a reading comprehension course. The data collected from an experiment, an interventionist mediation program, and a structured interview. This research study was modeled in the Sandwich format. This design consisted of a pretest, mediation program, and posttest. First of all, a non-dynamic reading

comprehension test was administered to all participants. And then they enrolled in a mediation program that was aimed at supporting students' development of conceptual understandings to enable them to use the strategies appropriately. After the mediation program, the participants were given a posttest. The findings of the study showed that even though static test procedures, which were one of the most used assessment approaches in EFL programs, decreased the potential of a student. Thus, dynamic assessment even with all its practical limitations is a way of overcoming the disadvantages of traditional tests. Also, Mardani and Tavakoli (2011) used an interactionist model of DA in reading comprehension questions. The main goal of this research was to show the advantages of the implementation of Dynamic Assessment. The participants were 30 Iranian EFL learners and they were divided into experimental and control groups. The mediation process took four sessions. The mediation process was an interactionist format of dynamic assessment based on cooperative dialogues. The data collected at pre-mediation and post-mediation sessions of DA and the score were analyzed through a t-test. According to the comparison between the experimental group and the control group, the experimental group increased 2.3 scores in the post-test while the control group increased only 1.1 points. According to the findings, learners performed better after the mediation.

Likewise, Wang (2015) investigated the impact of dynamic assessment on the listening comprehension assessment. Wang used the cake model format of DA. Five technical college students took part in the study and they have answered the listening comprehension questions and verbalized their comprehending process. Then, they were mediated and asked to retell. The data collected from the notes of the learners, verbal reports of learners, and according to the conclusion, both the researcher and the participants took the advantages of dynamic assessment to gain insight into the problems during the assessment of listening. Based on the findings of the study, it was understood that dynamic assessment could integrate listening comprehension assessment and instruction. Similarly, Hidri (2014) conducted research on the listening comprehension of university EFL learners. This study compared the static and dynamic assessment of listening comprehension. Sixty Tunisian EFL students took the static and dynamic assessment parts. First of all, participants were asked to respond to a set of questions according to an audio recording of spoken interaction. This was a

static approach to assessment. The Dynamic assessment part consisted of mediation and negotiation of meaning. And then, both the participants and raters were interviewed about two types of assessments. The data analyzed qualitatively and results showed that even though dynamic assessment outperformed traditional assessment on better understanding into the cognitive process, teachers did not prefer to use it because they were unfamiliar with the concept of DA. From a different perspective, group dynamic assessment was applied to listening comprehension by Safa and Beheshti (2018). The main aim of this study was to investigate the effect of interactionist and interventionist approaches to group dynamic assessment. 90 EFL learners were divided into two groups to explore the effects of DA on TOEFL Junior Standard Test listening comprehension questions. The first group took 13 treatment sessions, and interactionist approaches were applied to them in their listening comprehension activities. The second group based on the sandwich model of the interventionist approach and they were provided with implicit to explicit prompts. The data analyzed through a one-sample t-test, ANOVA. It concluded that interactionist GDA was more effective than the interventionist model on the intermediate EFL learners' listening comprehension development.

On a different skill, Kamali, Abbasi, and Sadighi (2018) focused on the success of DA implementation to the grammar assessment on the topic of Conditional Type II to the second language learners. There were two groups each consisting of 23. They tested before and after the mediation using a grammaticality judgment task. According to the findings, the score of the experimental group was higher than the control group. Overall, the results showed that the use of DA in grammar instruction was effective. Unlike Kamali et al. (2018), Sumi and Miyazawa (2017) integrated the assessments of grammar and vocabulary. The main goal of it was to analyze the feasibility of C-DA. The participants were 14 Japanese students from a university in Kobe and they answered the 25 multiple-choice test items. This study was mainly piloted for improving the feasibility of the system so the number of students was quite small. The test that was used in this study was based on the curriculum of the university used for vocabulary and grammar teaching. A computer-based system was designed to provide students a set of graduated prompts from implicit to explicit. A graded response model (GRM) of the item response theory (IRT) was used in this study. The results illustrated

that the mediation helped students to answer correctly. More recently, Şentürk (2019) conducted a study in the Turkish context which analyzes whether Dynamic Assessment affects the tense preferences of secondary school students. The method of this study was a case study placed in a secondary school in İstanbul. The participants were three sixth graders and this study implemented the interactionist model of DA. The data collection methods were open-ended questionnaires, assessment tasks, semi-structured interviews, and teacher journals. Besides the effectiveness of the DA, another goal of the study was to reveal the opinions of the researcher and students about the implementation of the DA so open-ended questionnaires and semi-structured interviews were administered before and after the procedure of DA. The findings of the study showed that the implementation of the interactionist perspective of Dynamic Assessment significantly effective on the performance of the students. Moreover, the qualitative and quantitative data analyses revealed the positive attitudes of the mediator and students.

In 2014, the effect of dynamic assessment on Iranian students' vocabulary learning was examined by Hessamy and Ghaderi. The participants were 50 EFL learners and they were divided into two groups. Sandwich format of DA was used in the study so first of all, they took a pre-test then they were mediated, and finally, they took a post-test. The experimental group received mediation after the pre-test and the control group received no mediation. The data analysis concluded that the score of experimental groups was higher than the control group and also significantly different. All in all, the implementation of DA had a positive effect on the vocabulary learning of students. In a similar way van der Veen, Dobber and van Oers (2016) aimed to investigate the role of teacher educators in implementing DA in primary education schools in the Netherlands. They tried to assess children's vocabulary development dynamically with a specific instrument. The pre-test intervention posttest process (sandwich format) presented some of the results of the implementation of this Dynamic Assessment instrument. The researchers used a trialogical process to emphasize the relationship between teacher educators and teachers. After piloting the students' vocabulary knowledge with a vocabulary test, the activities were planned to enrich their vocabulary development. First of all, the teacher recorded the words they actively use on the pretest, and during 6 to 8 weeks, the students were involved in an

intervention period. Finally, they took a post-test to assess their vocabulary knowledge. A Wilcoxon test was used to analyze the improvement of the students' vocabulary knowledge during the intervention period. This research concluded that with the help of the interactionist mediation sessions, teachers could increase the vocabulary enhancement of students through the different concepts of tasks.

A broader perspective was adopted by Antón (2009) who used DA at the integration of all skills. This research investigated the effects of the DA application to a university-level advanced Spanish language learning course. It was conducted with third-year Spanish language learners. The dynamic assessment was implemented in second language learning contexts with the aim of illustrating the effects. The participants took a diagnostic test which was divided into five sessions consisting of the assessment of reading, writing, listening, speaking, and grammar sections. The writing and speaking parts were followed by mediation procedures to apply DA. This aimed to illustrate whether providing mediation would result in higher performance in the tasks. The data analyzed qualitatively and the results showed that dynamic assessment enabled a deeper analysis of learners' actual abilities and allowed for an individualized program according to learner's needs. Another different usage of DA was implemented by Agheshteh (2015). The main goal of this research was to reveal the effects of DA on a placement test to discover whether it was dividing into appropriate levels. The data collected from audio-recordings of the placement interviews of four teachers in the Iran Language Institute. They applied the Interactionist format of DA. And the data were transcribed to investigate whether mediation had an impact on teachers. The findings concluded that the teachers put more emphasis on DA and it helped to understand students' future performance. The implications of the study were that DA provided teachers to indicate the students both Zone of Actual Development and Zone of Proximal Development so it enables them to avoid misplacement of the students into inappropriate levels. Others have highlighted the impact of DA on students but McNeil (2018) was much more concerned with the effects of DA on teachers. This study aimed to discover the problems teachers faced during the computer-mediated DA. It consisted of two cycles that occurred one year apart. It took 15 weeks in total. The first seven weeks of it were based on computer-mediated DA and, the following week they took a mid-term exam,

the rest of the weeks centered on how they could be used in CMC with the aim of developing language. While the participants were Korean and non-Korean nationals their teacher was from the Philippines and taught English through Skype. And also, the teacher and her students had not used DA before. Cycle 1 was the action research project to gain insight into the challenges that occurred during the teachers' participation in the course unit. Data collected from the impressions of the teacher/researcher during the application procedure, a survey, and teacher reflective journals. In the end, they compared the level of the mediation between the two cycles. The level of mediation was more implicit in Cycle 2. Thus, it can be concluded that when the teachers gain experience, they can manage the levels of mediating strategies better. Not only this study clarified the possible problems that could occur during the implementation of C-DA and the solutions for overcoming the problems, but it also highlighted the important role of the teacher educators in observing their sessions.

In recent years, there has been an increasing amount of literature on Computerized Dynamic Assessment. Tzuriel and Shamir (2001) tried to compare the effect of the C-DA and DA with the examiners' cognitive development. The DA approach in this study was based on Feuerstein's mediation theory. The participants comprised of kindergarten children (n = 60). They were divided into two groups which one of them assigned to the Computer-Assisted (CA, n = 30) and the other one was Examiner Only (EO, n = 30) group. While the CA group was administered a program, which was designed for this study, the other group took the same test with only an examiner. According to the results, the effectiveness of C-DA, including mediation processes rather than the mediation with only an examiner, was proved. Moreover, the computerized dynamic assessment was used by Thouësny (2014) as an assessment tool of writing skills. This study which was based on a computerized interactionist approach was conducted in Ireland. The main goal of this web-based application was to carry out self-editing tasks with learners of French to encourage them to interact with the teacher through the use of the computer. To collect data a written text and essay-type questions were given to them. Firstly, the learners are corrected by the teacher, and then they edited their writing papers with different mediation stages. In the end, each alternative was answered by the students checked by the teacher. This study consisted of 18 university-level students. The initial usage of the web-based

implementation illustrated the pros and cons. Moreover, it stated that students had not accepted all mediations and students refused the mediation offered on some occasions (Thouësny, 2010). So, future studies are needed to make generalizations in interactionist approaches of the dynamic assessment of large-scale participants. In a similar way, Alavi and Taghizadeh (2014) conducted a study to examine the impact of dynamic assessment on the writing of the essay. The participants (n=32) were students in a state university in Iran. Each student in this study went through the pretest, mediation, and post-test procedure. Instruction on the writing skills and strategies took 3 weeks in total. The result of the study concluded that the post-test outperformed the pre-test scores of the students. According to the findings, the researchers summarized that dynamic assessment had a positive effect on the writing skills and strategies and the explicit prompt was the most effective hint in the dynamic assessment process.

2.8 COMPUTERIZED DYNAMIC ASSESSMENT OF READING SKILLS

C-DA overcomes the limitations of DA and it was generally used for reading comprehension in order to apply it to large numbers of participants and to assess again and again. There was an increasing number of studies in the literature on C-DA. One of them was designed by Pishghadam et al. in 2011. They examined the advantages of the C-DA implementation on the assessment of reading comprehension questions with intermediate-level Iranian EFL learners. There were 77 students (27 males and 50 females) and all of them took the Computerized Dynamic Reading Test. They used the interventionist approach and the software provided for each student both a non-dynamic score that showed the students' unmediated performances to answer the questions and a dynamic score that represented the students' mediated performances. According to the findings, it could be concluded that when the students were supported with graded mediations, the scores of students highly increased, thus it helped students to enhance their reading comprehension skills. The non-dynamic and dynamic reading comprehension test scores were compared. These comparison scores revealed that the implementation of the C-DA concept has positive effects on comprehending students' reading comprehension skills. Furthermore, low achievers took more advantages of this concept than high achievers.

In the same vein, Teo (2012) conducted a C-DA study to reveal the effects of mediation in a Taiwanese college. The study took a "sandwich" format of interventionist DA, so he used pre-test and post-test to show the progress of the EFL learners' inferential reading skills. The whole study took 10 weeks and 8 weeks of them were mediation phase. The passages followed by one inferential question and their responses were not correct, they were provided mediation from implicit to explicit. According to the results, students' posttest scores were significantly higher than the pretest scores. Moreover, the analysis of the learners' portfolios indicated that C-DA benefitted the metacognitive reading strategies of learners in making inferences. The most important limitation of it was in its group design, this study has just based the results of one group, so this made it difficult to prove this progress was occurred because of the frequency of the activities or the effectiveness of C-DA sessions.

In 2017, Yang and Qian conducted research to find out the problems of the students in reading comprehension and the effects of C-DA. The data collected with multiple choice questions in the reading comprehension section. There were two groups in the present study. In order to identify the difficulties in reading comprehension and to determine the level of mediations a pilot test was used and just after they completed the reading test, they took notes about the details of their deciding process. One group of learners (n=52) took part in the pilot study and another group (n=46) was in the main study. They had been studying English for about 10 years and they were freshmen students at Lingnan Normal University in China. After the test, the participants were administered a questionnaire about their thoughts on the implementation of C-DA. According to the analysis, they stated three difficulties in their reading comprehension test; the first and the biggest problem was the unknown words, the second one was putting the relevant sentences to the original passage, and the third one was inferencing the meaning of the words. The analysis of the data revealed that C-DA was effective than the traditional non-dynamic assessment for its stronger diagnostic abilities. According to the results of the questionnaire, they reflected that C-DA was helpful to build up confidence for the low achievers.

More recently, Bakhoda and Shabani (2018) investigated the difference between the scores of learners before and after the mediation in C-DA reading comprehension

questions. The participants were 183 Iranian students and they decided the type of mediation like visual, audio, and textual according to their learning styles. The purpose was to reveal whether students' learning styles change according to different mediations. The software consisted of 15 reading comprehension passages and three different types of mediations which were designed from implicit to explicit. According to the results, it was concluded that designing electronic mediations suitable to learners' individual preferences could be possible with C-DA.

CHAPTER III

3. METHODOLOGY

3.1. INTRODUCTION

This thesis intends to investigate the impacts of Computerized Dynamic Assessment on the reading comprehension skill of the students studying at the English language teaching department at Kocaeli University. This chapter is to illustrate the details about the procedure of this study. This chapter includes four sections that describe the research design, participants and context, data collection tools, and the data analysis.

3.2 RESEARCH DESIGN

This study is a case study using quantitative and qualitative data analysis. As explained by Robson in 1993, the case study is a research technique that analyzes a problem empirically within its real-life scenario collecting the data with different methods. Likewise, this study analyses the effectiveness of C-DA in a university context. The form of the present study is the interventionist cake format which offers immediate mediation when a problem arises. To achieve this goal a computerized version of TOEFL-type reading comprehension questions (see Appendix 1) was applied and mediations were provided to wrong answers.

3.3 CONTEXT AND PARTICIPANTS OF THE STUDY

The participants study in the English language teaching department at Kocaeli University ranging from preparatory class to 4th graders and they are chosen on voluntary grounds. There are 92 participants in total 59 of them are female, 33 of them are male. In Table 2, the number of students enrolled in this study from each grade is

illustrated. It is seen from Table 2 that most of the learners from third grade and female students constitute most of the participants of this study.

Table 2

Grade	Female	Male
Preparatory	15	3
1st graders	8	6
2nd graders	14	7
3th graders	22	7
4th graders	0	10

Preparatory classes are compulsory for the ELT department students and they have 23 hours of English each week. They take Grammar, Writing, Reading, Speaking, Listening, and Video courses from four different instructors. 1st Graders take Writing Skills, Reading Skills, Listening and Pronunciation, Oral Communication skills, Turkish Language, German or French Language, Educational and compulsory courses throughout this year. 2nd Graders take theoretical courses like Approaches in Learning and Teaching English, Linguistics, English Literature, Language Acquisition, and Elective courses. 3rd Graders take Teaching Language Skills, Language and Literature Teaching, Teaching English to Young Learners, and Educational Courses such as Classroom Management, Measurement, and Evaluation courses. 4th Graders take mostly School practicum courses which they observe and teach in an elementary or high school. Also, they have Theoretical and Educational courses (see Appendix 3 to see the Curriculum). Pseudo names were used in the study to name the students.

3.4 DATA COLLECTION INSTRUMENTS

This section includes Pre-study and Computerized TOEFL reading comprehension test application parts. In the Pre-study part, a computerized version of the TOEFL Reading Comprehension Test was used to determine the mediations. In the main study part, a Computerized TOEFL reading comprehension test was used.

3.4.1 Pre-Study

Designing the mediations was the first step of this study because the Interventionist form of Dynamic Assessment was used in this study. In interventionist C-DA all the prompts were given by the computer so there was no evidence that necessary prompts were used. To prevent this situation, a pre-study was applied to a small group of students to analyze their strengths and weaknesses in the Interactionist form. Two passages consisted of eight questions. Five students were chosen from available sampling and they took multiple-choice reading comprehension questions. These students took a paper pen test individually and they were wanted to say aloud the answers to the questions. When they had difficulty answering, a clue was given to the student about the passage such as the meaning of vocabulary or saying the related paragraph. The examples were illustrated in Excerpt 1 and Excerpt 2. Excerpt 1 proved that the "Can you read the question again" prompt was necessary for the questions because mostly they missed what was asked in the question.

EXCERPT 1

Student A:	Is that B?
Interviewer:	Why did you choose that?
Student A:	It mentions the Gondwanaland and Laurasia plates.
Interviewer:	Please read the question again.
Student A:	Is that A?
Interviewer:	Why did you choose that?
Student A:	The question asks "what can be INFERRED" not want the stated one.
Interviewer:	OK. You are right, go on, please.

EXCERPT 2

Student B:	Is that B?
Interviewer:	Why did you choose that?
Student B:	Because it was split off into many pieces.
Interviewer:	Well, your answer is incorrect. Please focus on the 6th paragraph.
Student B:	Is that D?
Interviewer:	Why did you choose that?
Student B:	In paragraph 6, it is now generally accepted as written.
Interviewer:	Yes, you are right.

In Excerpt 2, students needed more help to find the correct answer to the question, so the clues were provided by the interviewer gradually. In the end, the interviewer guided the student to the related paragraph.

EXCERPT 3

Student C:	I think it is A.
Interviewer:	Why?
Student C:	I don't know, ummm.
Interviewer:	No, can you please read the question again?
Student C:	B?
Interviewer:	Why did you choose B?
Student C:	Actually, I don't understand the meaning of Limners.
Interviewer:	OK. Limners are artists that paint the portraits.
Student C:	D?
Interviewer:	Yes, correct answer. Read the second question please.

In Excerpt 3, after the meaning of a very frequently occurring vocabulary in the text, student C could find the correct option. Just after they answered the question the reason why they chose that option and in the end level of passages were asked. All these procedures were videotaped and analyzed qualitatively.

The analyses of the pre-study revealed that the highest mediated score was 28 out of 32 and the lowest study was 16 out of 32 (see Figure 1). Four students answered the first question without mediation and one student answered correctly at the second mediation. The second question was answered by two students without mediation, two students answered it in the last mediation, and one student answered it at the third mediation. In the third question, there were two students who answered at the third mediation, one student answered at the fourth mediation, one student answered at the first mediation, and one student answered without mediation. At the fourth question, there were three students answered at the second stage, one student answered at the third stage and one student answered without mediation. In the second passage, five students answered the fourth question this question was a very selective question that required both vocabulary knowledge and attention to the right phase. The sixth question was answered by three students at the fourth stage, one student answered at the third and one student answered it at the second mediation. The seventh question was answered by three students at the third mediation level while one student replied it at the first level and one answered at the second mediation stage. The last question was answered by three of them at the third level, a student replied to it at the second level and one student replied without mediation.

Figure 1
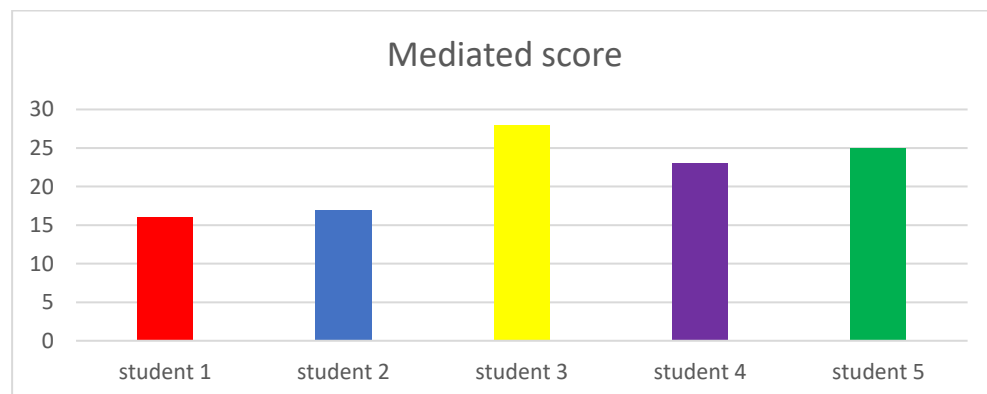
As can be understood from Figure 1, no student replied to all the questions without any mediation, some of them needed a little bit while some of them needed more help to achieve the correct answer. The pre-study revealed the necessity of the mediations, such as giving vocabulary clues, offering them to read the question again, and focusing on a specific paragraph.

3.4.2. Computerized TOEFL Reading Comprehension Test

Five reading passages used in this study were borrowed from Phillips's (2014) Longman Preparation Course for The TOEFL IBT Test book. Each had 4 or 5 questions about the text and there were 21 questions in total. The passages of this study were from different areas such as history, geography, literature, and art. The C-DA procedure was illustrated in Figure 2.

Figure 2
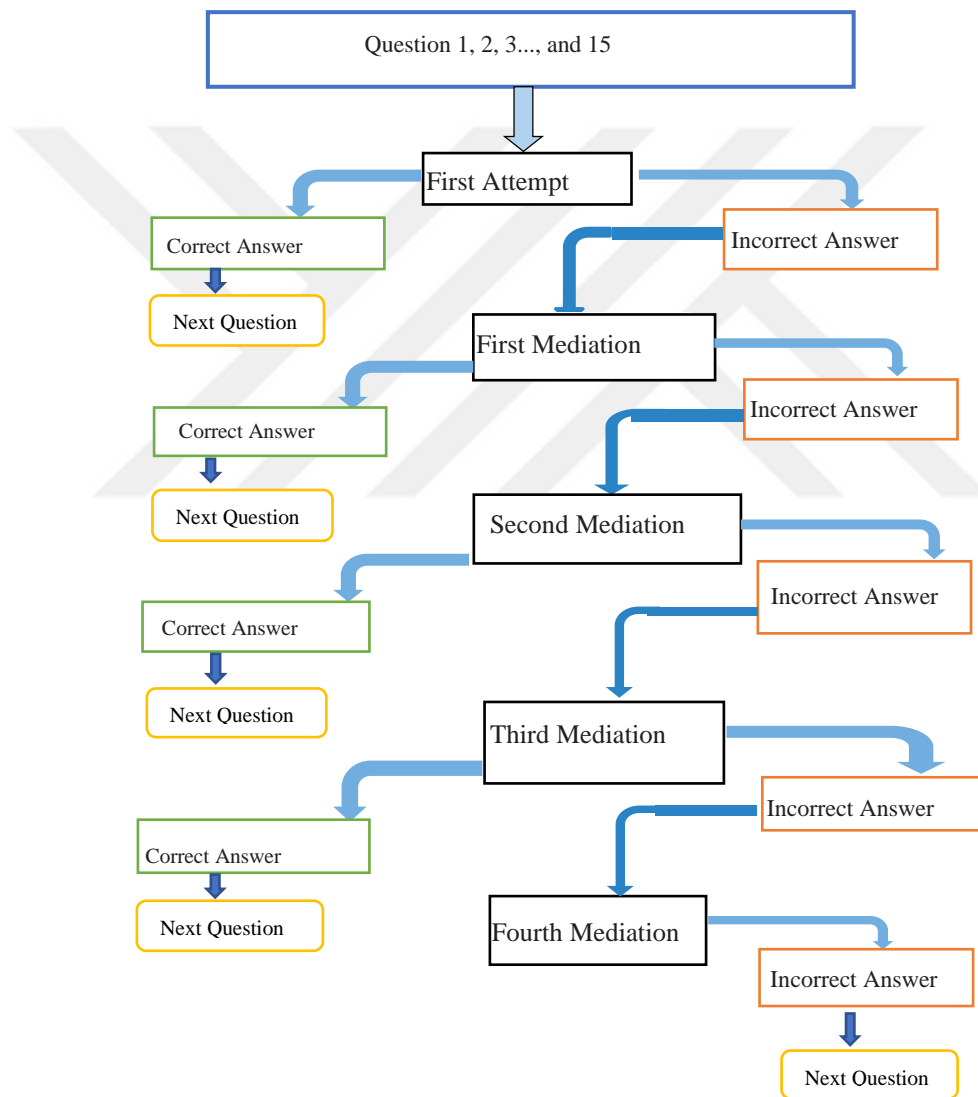
This procedure was administered to 92 students in 5 sessions which each lasted 60 minutes (calculated based on the pre-study). Third-grade students (n=29) were the first group to participate, the second group was the second graders (n=21), the third group was the preparatory class students (n=18), the fourth group was the first-grade

students (n=14), the fifth group was the fourth-grade students (n=10). They took C-DA individually with thirty computers placed in the Computer and Information Technologies Teaching Department at Kocaeli University (see Appendix 4).

3.5 DA PROCEDURE

Pre-study was implemented to determine the requirements of the mediations. The researcher and her supervisor determined five steps for the implementation of DA procedures. All procedure was explained to the participants by the researcher. And also, the instructions were provided by the software at the beginning of the test as tutorial videos. These five steps are presented below:

3.5.1 The First Step of DA

As the first step of DA, the participants read the passages and then they were required to answer the questions without any mediation (see Figures 3 and 4). This score was used to calculate their actual score as if in a static assessment. When they chose the correct answer, the next question was supplied.

Figure 3

Figure 4

As it is clearly illustrated in Figure 3, the full passage was given first to be reader-friendly. Then, both the full passage and the question were supplied as it could be needed to read it again and again. When they chose the incorrect choice, they moved forward to the next step.

3.5.2. The Second Step of DA

In the second step of DA, an auto hyperlink was organized to bound the mediations and the wrong answers. If the student chose the wrong answer, it shifted to the 1st mediation slide (see Figure 5). In the first mediation, it was wanted them to read the question again. This mediation was necessary for them to be aware of their mistake. All the mediations were graded from implicit to explicit. It was the implicit step of the mediation. They were guided to the "your answer is correct" slide when their answers were correct.

Figure 5

It can be understood from Figure 5 that the pre-determined mediations were used in a different color intentionally to take their attention. Also, each mediation was in a different color to analyze them easily at the scoring procedure.

3.5.3. The Third Step of DA

After the first mediation, students were required to click an option again. In their wrong initiation, they were addressed to the 2nd mediation slide (see Figure 6). When their answers were correct, then they were directed to the next question.

Figure 6

First of all, the related paragraph was highlighted with the green lines to take their attention to it. At that point, they reread the paragraph and chose an option again.

3.5.4. The Fourth Step of DA

In the wrong utterance, 3rd mediation was provided (see Figure 7). But in the correct utterance, they were directed to the "your answer is correct" utterance.

Figure 7

In the 3rd mediation, the line was restricted to two or three lines according to the related answer. At this time, they read and considered the more specific part of the paragraph. In the end, they chose an option with the help of this mediation.

3.5.5. The Fifth Step of DA

When they select the incorrect choice, the 4th mediation was given as a last mediation (see Figure 8). 4th mediation provided the correct answer to the related question. This was the most explicit mediation was given to students. This procedure went on in that way throughout 21 questions.

Figure 8

3.6. SCORING SYSTEM

The actual, mediated, and Learning Potential Scores (LPS) were calculated for each student to measure the effect of dynamic assessment. As it was illustrated in Table 3, students' first attempt to answer the questions without taking any mediation was calculated as their actual score. At this step, when they answered correctly to each question, they gained four points. But when they answered incorrectly, then each question was followed by pre-determined mediations. Each step of mediation provided to students decreased one point from a total of four-point to state students' mediated score.

Table 3

	Mediated Score				
	First Attempt	Second Attempt	Third Attempt	Fourth Attempt	Fifth Attempt
Score	4	3	2	1	0

Students that answer questions at the second mediation took three-point, the correct answer in their third attempt took two-point, and for the fourth attempt, they took one point. In the last attempt, the correct answer to the question was provided to students so they took zero points for this attempt. After the first attempt, all the attempts were regarded as a mediated score.

The test had 21 test items and the maximum score was 84. In the study of Poehner et al. (2015), they operationalized the formula stated in Figure 9 that the post-test score was presented as mediated score and the pre-test score for the actual score. In this study, this formula was used to calculate LPS. The scoring system of the LPS was used in the same way as in the study of Poehner et al.; high LPS was regarded if the LPS was over than .91 ($\geq$ .91), it was label as middle if it was between .71 and .90 (.71–.90), and it was considered as low LPS if it was less than .70 ($\leq$ .70).

Figure 9

$$LPS = \frac{(2 \times Mediated\ score - Actual\ score)}{Maximum\ Score}$$

3.7 DATA ANALYSIS

Quantitative and qualitative analyses were used in this study to analyze whether the application of DA was effective in the students' reading comprehension results. The actual and potential scores were calculated and a Pearson correlation was administered to analyze the relationship between them. Also, the Wilcoxon signed-rank test was used to prove the significant difference between students' actual and mediated scores to get evidence for the effectiveness of the application of the DA to their Zone of Proximal Developments. The dynamic assessment scores were analyzed using SPSS.

To answer the first and third research questions of the present study, the frequencies, mediation scores, LPSs, actual scores, means, and percentages were calculated in terms of descriptive analysis.

CHAPTER IV

4. FINDINGS

4.1. Introduction

This chapter aims to present the statistical analysis and discussion of the findings. The statistical results were collected from the implementation of DA, tabulation of its finding to the SPSS program. The findings and research questions are discussed under the analysis and evaluation of the quantitative data section.

4.2 Analysis and Evaluation of Quantitative Data

After data collection, SPSS was used to process the data. Table 4 shows the number of learners who arrived at the correct answers at which mediation.

Table 4

Questions	Without Mediation	First mediation	Second mediation	Third mediation	Fourth mediation
1st Q	66	16	5	4	1
2nd Q	58	15	7	6	2
3rd Q	59	20	6	6	1
4th Q	69	8	10	5	1
5th Q	50	22	9	9	2
6th Q	48	18	9	11	5
7th Q	69	13	3	5	1
8th Q	26	26	14	17	9
9th Q	32	29	13	12	6
10th Q	34	23	14	2	17
11th Q	65	14	3	2	2
12th Q	44	9	9	10	19
13th Q	19	17	6	6	44
14th Q	42	16	17	13	4
15th Q	23	18	26	20	5
16th Q	21	14	18	34	5
17th Q	38	22	18	11	3
18th Q	40	19	23	7	3
19th Q	27	21	22	21	1
20th Q	25	28	22	16	1
21st Q	39	44	7	0	2

First of all, numerical analyses were made. As we can understand from Table 4, the first question is the most answered one without mediation (n=66) and the thirteenth question is the least answered question without mediation (n=19). The first mediation is mostly used in the ninth question (n=9) and it was rarely used in the twelfth question (n=9). The fifteenth question is the most answered one that used the second mediation (n=26). The seventh and the eleventh questions are the least answered ones with the help of the second mediation. The third mediation is mostly used in the sixteenth question (n=34). Nobody used the third question at the last question (n=0). The thirteenth question is mostly answered with the help of the fourth mediation (n=44). The first, third, fourth, seventh, nineteenth, and twentieth questions are the least used ones at the fourth mediation.

4.2.1 The First Research Question

The first aim of this study was to find out whether the C-DA design outperformed the static assessment during the TOEFL reading comprehension questions. The related research question is provided below:

1. *What are the effects of C-DA on evaluating participants' abilities in reading comprehension questions?*

Scores of some students out of a total of 92 students were chosen. As Table 5 illustrates, learners who took the same actual scores did not have to get the identical mediated scores. For instance, Students A and B got 40 points in their actual score, for which these students were probably grouped in the same category according to static assessment. Student A got 40 points and the LPS is .90, placed into the middle range (.71–.90) of LPS according to the category of Kozulin and Garb (2002), while Student B earned 23 points, raising his LPS to .1.02, falling into the high range of LPS (≥ .91). Similar to students A and B, student C and student D had identical actual scores. While student C raised his score from 28 to 56 with mediations and placed into the high range of LPS (≥ .91), Student D got only 19 gain score and placed into the middle range of LPS (.71–.90). To sum up, the students who fell into the same group according to the static assessment were indicated into a different group based on their mediated scores

in the dynamic assessment. In this respect, dynamic assessment outperformed static assessment.

Table 5: Some Student's scores

Student	Actual score	Mediated score	Gain score	LPS
A	40	58	18	.90
B	40	63	23	1.02
C	28	56	28	1
D	28	47	19	.70
E	36	45	9	.64
F	20	46	26	.85
G	60	69	9	.92
H	40	59	19	.92

Another point worth mentioning, LPS represents a holistic way of stating the results of C-DA in comparison with the static assessment that using a single score. A higher gain score usually means a higher LPS. According to Poehner et al. (2015), when the students administer a test successfully in their independent performance, less part is left for improvement in the same test. To give a counterexample, both Student E and G gained 9 points from the C-DA results, but Student G's LPS outperformed Student E's LPS (.92>.64) because Student G got a higher actual score than Student E. Along the same line, Student C gained 28 points from mediations, Student G gained 9 points but their LPS are similar (1- .92). Similarly, Student E and F both gained alike mediated points (45-46) but the LPS for the former takes .64 while the latter increases to .85. Even they gain the same points with the help of the mediations or they have the same mediated scores, their final score is determined not only with an actual score or mediated score but with the collection of them is used to calculate the LPS.

Table 6: Mediation responses of some students

Student	1st Mediation	2nd Mediation	3rd Mediation	4th Mediation	Without Mediation
A	4	2	2	3	10
B	5	2	4	0	10
C	7	3	1	2	7
D	3	3	5	4	6
E	0	1	7	4	9
F	2	8	4	2	4
G	1	2	2	1	15
H	5	0	4	2	10

As we can interpret from Table 6, Student F chose the correct answer 8 times using the 2nd mediation, which led the student to the related paragraph. Student E used 3rd mediation 7 times to find the correct answer which highlights a specific sentence of the related paragraph. Student D and E took the last mediation which provides the correct answer. The barriers that students faced in the paragraphs are listed during the pilot study. Mainly, some learners could not find the related passage from the key information implied in the question and sometimes even they could find the key information, they still choose the wrong answer because of the misunderstanding. The findings demonstrated that if the learners supported contextual and grammatical prompts, most of them could easily reply correctly. Also, this provides the teacher with a database on the individual needs of the students. This diagnostic information shed light on planning further instruction for the teachers. C-DA provides a continuous learning chance even when the answer is wrong.

4.2.2 The Second Research Question

The aim of the second research question was to investigate the effect of mediations on the actual scores of the students. The second research question seeks an answer to the following question;

Is there a significant difference between the results of actual and mediated scores?

The results are analyzed statistically in terms of the second research question. In this study, there are no control and experimental groups because of the study design, so both actual and mediated scores were calculated according to their performances in the C-DA section. Similar to the study of Poehner et al. (2015), their attempts without any mediation regarded as their actual performance in a non-dynamic assessment. The dynamic assessment scores were analyzed using SPSS.

To decide whether to use the parametric or non-parametric test, the data was processed to the test of Normality, Histograms, Q and Q pilots, Skewness, and Kurtosis. The results are stated in Table 7.

Table 7: Statistics

		Actual score	Mediated score
N	Valid	92	92
	Missing	0	0
Skewness		-.319	-.659
Std. Error of Skewness		.253	.253
Kurtosis		-.370	.304
Std. Error of Kurtosis		.500	.500

Skewness-Kurtosis results were between +1.5 and -1.5 so the values were regarded to be normal variance according to Tabachnick and Fidell (2013).

Table 8: Test of Normality

Tests of Normality

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statitic	df	Sig.	Statistic	df	Sig.
Actual	.096	92	.036	.975	92	.072
Mediated	.096	92	.038	.965	92	.015

The results of the test of normality were stated in Table 8. According to the book of Büyüköztürk (2013), the Kolmogorov-Smirnov test was recommended to use when the sample size is large while Shapiro-Wilk was used with small sample sizes (Büyüköztürk, 2013). Thus, Kolmogorov-Smirnov test results were taken into consideration and they showed the non-normal distribution. In order to make a final decision about whether the data have the normal distribution, the histogram results and Q and Q plots were used.

Figure 10
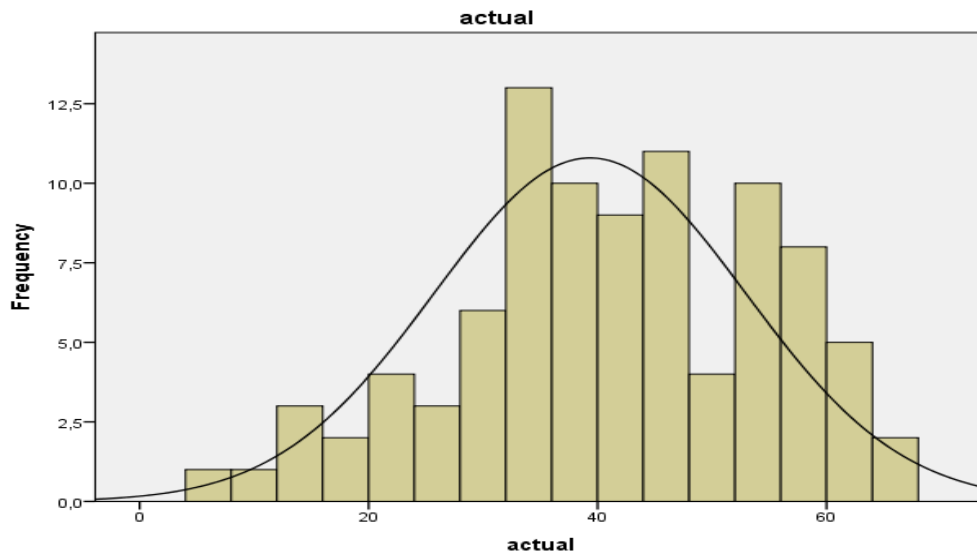
actual
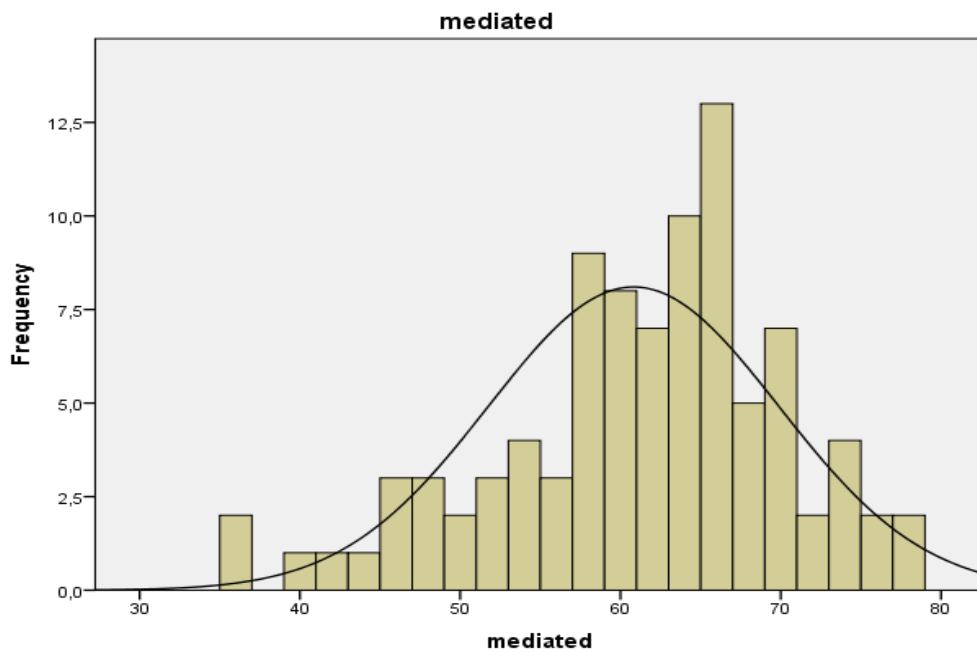
Figure 11

mediated

Figure 10 and Figure 11 showed the histograms of actual and mediated scores' distribution. According to them, the distribution of actual and mediated scores was negatively skewed.

Figure 12

Normal Q-Q Plot of actual

Figure 13
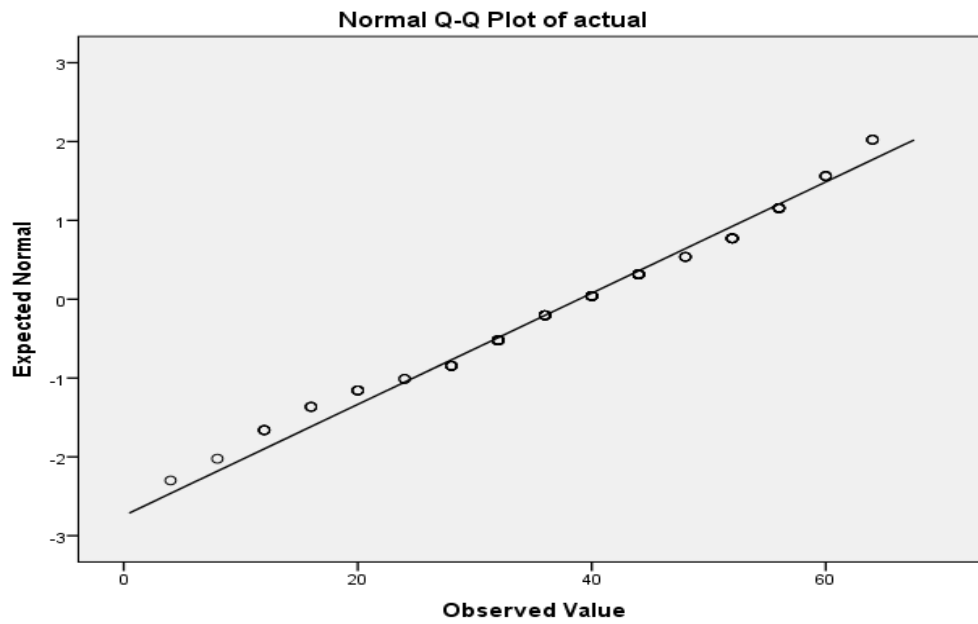
Normal Q-Q Plot of mediated
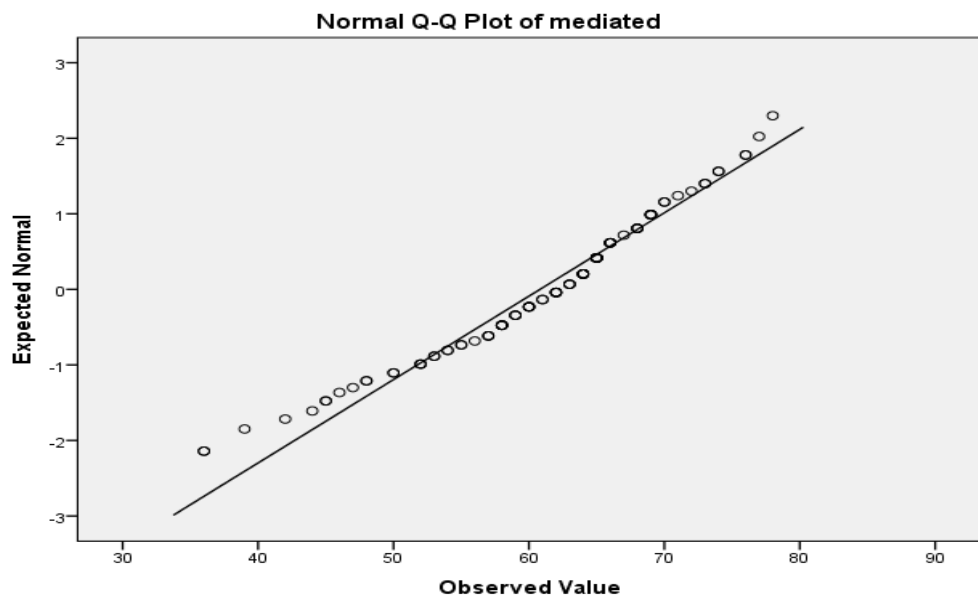
Figures 12 and 13 stated the normal Q-Q plot results of actual and mediated scores. The points were not so straightly fit to the line and there were some outliers.

Thus, the final decision was that the data were not normally distributed. Then, a non-parametric Wilcoxon signed-rank test was run.

Table 9

		N	Mean Rank	Sum of Ranks
		Ranks		
med – actual	Negative Ranks	0ª	.00	.00
	Positive Ranks	91ᵇ	46.00	4186,00
	Ties	1ᶜ		
	Total	92		
a. med < actual				
b. med > actual				
c. med = actual				

Table 10

Test Statistics	
	med – actual
Z	-8.287
Asymp. Sig. (2-tailed)	.000

According to Table 9, the mediated scores of the students were higher than their actual scores at 91 attempts and just 1 score of a student equaled to her mediated and unmediated score. As Table 10 showed, the results of the Wilcoxon signed-rank test found out a significant difference between the actual and mediated scores (Z=-8.287, p=.000). The results revealed the difference between students' actual scores and their mediated scores to prove the effectiveness of the application of the C-DA to their Zone of Proximal Developments.

In the same vein as previous studies from Kozulin and Garb (2002), Poehner et al. (2015) and Bakhoda, and Shabani (2018), the present study used the Pearson correlation to investigate the relationship between the actual scores and mediated scores of the students to find out the correlation between students' ZPD and ZAD performances. Table 11 showed a strong positive correlation between students' developing ZPD and developed ZAD performances while answering the TOEFL

reading comprehension questions (r= .893). Table 12 illustrated a strong negative correlation (r=–786) between learners' actual scores and gain scores. To sum up, these correlation results revealed that both the students with higher actual developed performance have higher mediated scores, and students with lower actual developed performance more benefited from the mediations.

Table 11

		Actual score	Mediated score
Actual score	Pearson Correlation	1	.893(**)
	Sig. (2-tailed)		.000
	N	92	92
Mediated score	Pearson Correlation	.893(**)	1
	Sig. (2-tailed)	.000	
	N	92	92

Table 12

		Actual score	Gain score
Actual score	Pearson Correlation	1	-.786(**)
	Sig. (2-tailed)		.000
	N	92	92
Gain score	Pearson Correlation	-.786(**)	1
	Sig. (2-tailed)	.000	
	N	92	92

4.2.3 The Third Research Question

The third research question aimed to reveal the difference among grades of the learner, mediational preferences, and their LPSs. The third research question seeks an answer to the following question:

3.   *Do different graders differ in their level of mediation and LPS?*

To answer the third question, the descriptive statistic was used for detailed analysis of the data. Mediation response frequencies, mean of mediations for each grade were presented. First of all, the mediational preferences of the preparatory class were analyzed to answer the third question. There were 18 students to participate in

this study from the preparatory class. Figure 14 illustrates that students answered the questions 156 times without mediation in that way this score was calculated as actual scores of them. They used 1st mediation 83 times; 2nd mediation was used 60 times; 3rd question was chosen 48 times and 4th mediation was used 26 times. The frequency of the type of mediation was decreasing respectively.

For the fact that the number of participants from each class is not equal so to compare the mediation responses of them, the mean of each type of mediation is calculated. The mean of the without mediation for the preparatory class is 8.6; the mean of the 1st mediation is 4.6; the mean of the 2nd mediation is 3.3; the mean of the third mediation is 2.6 and the mean of the 4th question is 1.4.

Figure 14: Mediation Responses of Preparatory Class
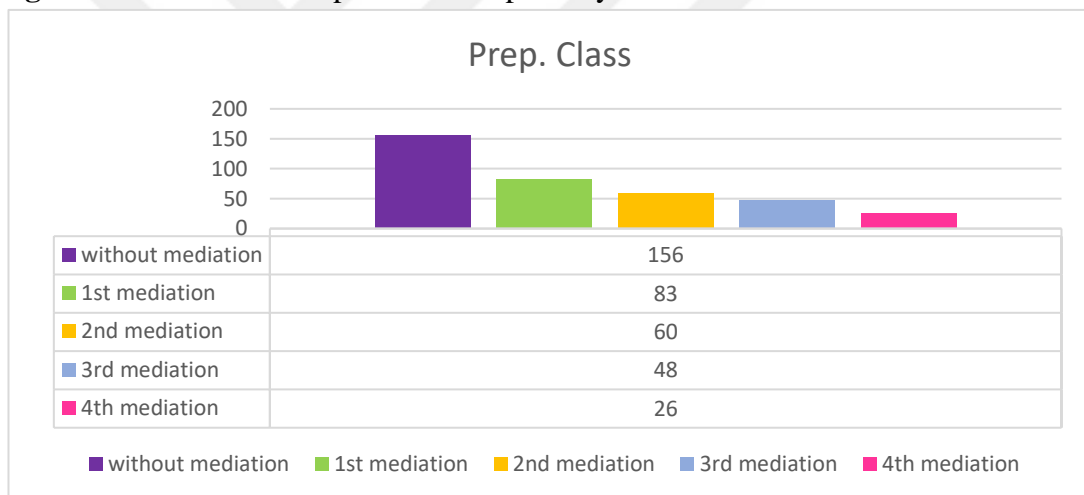
Figure 15 shows that the mean actual score is 34.5 out of 82 maximum score. The mean mediated score is 58.5. These results state that the students almost doubled the scores from the actual score to the mediated score. Also, they are regarded as high LPS scores ($\geq$ .91) according to the categorization of Poehner et al. (2015).

Figure 15: Learner Potential Score of Preparatory Class

Prep. Class	
■ mean actual score	34.5
■ mean mediated score	58.5
■ mean gain score	24
■ LPS	0.99
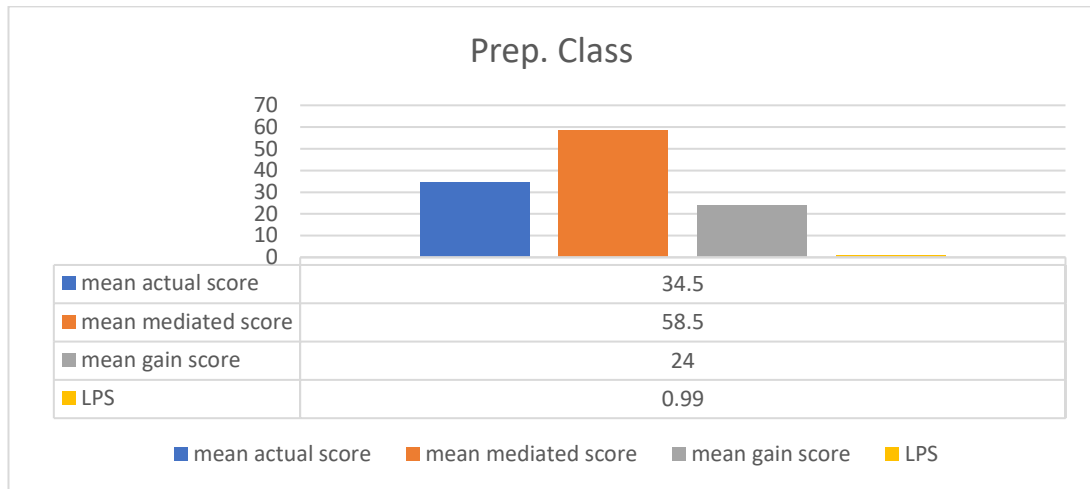
14 students were applied to this study from the 1st Graders. Figure 16 shows that students chose the correct answer 143 times without mediation. 1st mediation was used 62 times; 2nd mediation was used 28 times; 3rd mediation was used 34 times and 4th mediation was used 26 times. 1st Graders mostly answered without receiving any mediation and then they chose the correct answer at the 1st mediation at nearly half of without mediation frequency. The 2nd mediation and 4th mediation were used at a pretty much similar rate. Also, they used 3rd mediation more than 2nd and 4th mediation. The mean of without mediation is 10.2; the mean of the 1st mediation is 4.4; the mean of the 2nd mediation is 2; the mean of the 3rd mediation is 2.4; the mean of 4th mediation is 1.9.

Figure 16: Mediation Responses of 1st Graders

1st Graders	
■ without mediation	143
■ 1st mediation	62
■ 2nd mediation	28
■ 3rd mediation	34
■ 4th mediation	26
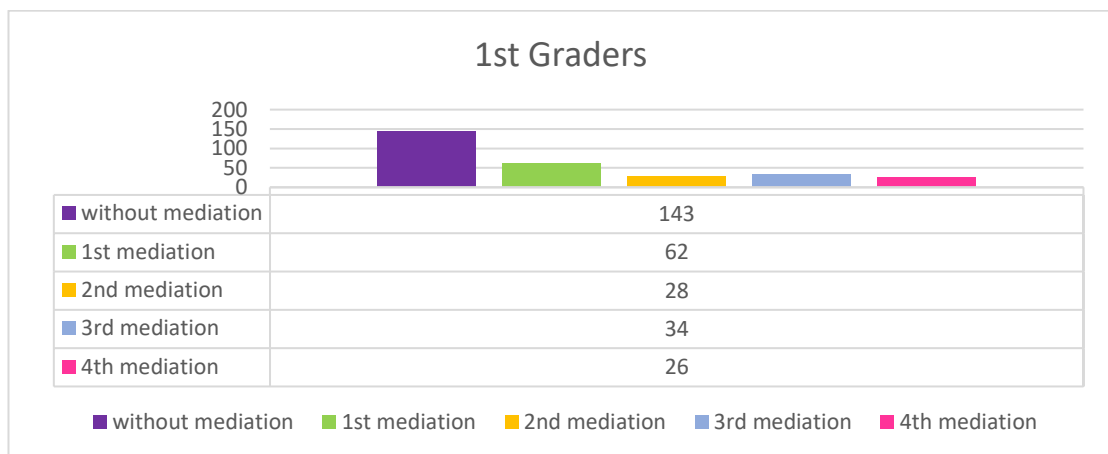
Figure 17 demonstrates that 1st Graders' mean actual score is 41 out of 82 points. The mean mediated score is 61 and the gain score is 20. Even though the mean of actual scores of the 1st Graders is higher than the preparatory class students, the LPS of the Preparatory class is higher than the 1st Graders (.99>.95). It can be concluded that Preparatory Class students take more advantages of mediation than the 1st graders.

Figure 17: Learner Potential Scores of 1st Graders

1st Graders	
■ mean actual score	41
■ mean mediated score	61
■ mean gain score	20
■ LPS	0.95
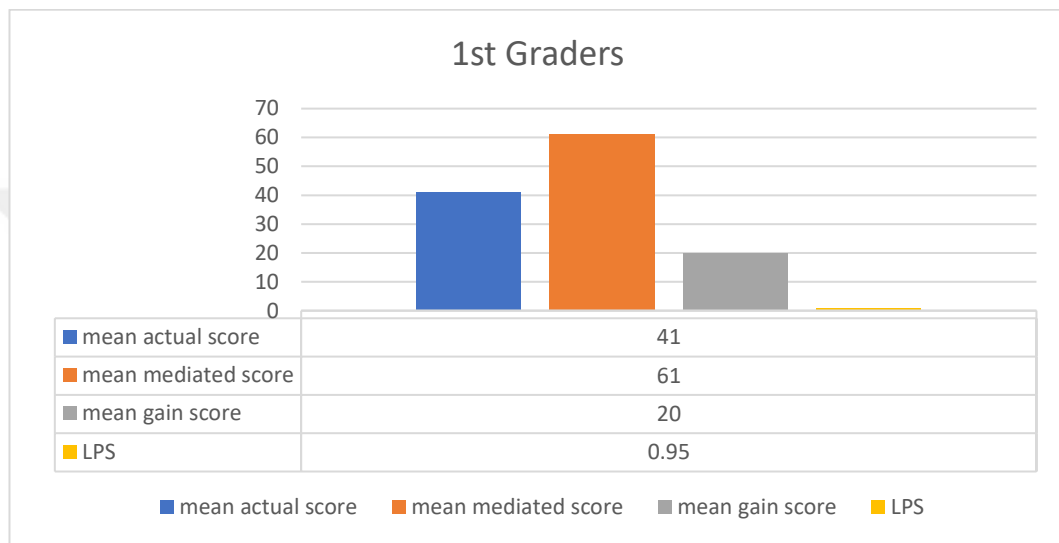
Figure 18 illustrates the frequency of each type of mediation of 2nd Graders. There were 21 2nd Graders in the present study. 85 learners tackled the correct answer through 1st mediation. They used 2nd mediation 61 times. 3rd mediation was used 48 times and 4th mediation was used 26 times. Similar to preparatory class students, the frequency of each type of mediation was decreasing respectively. The mean mediations are calculated as; 7.4 for without mediation, 4 for 1st mediation, 3 for 2nd mediation, 2.2 for 3rd mediation, 1.2 for 4th mediation.

Figure 18: Mediation Responses of 2nd Graders

◼ without mediation	156
◼ 1st mediation	85
◼ 2nd mediation	61
◼ 3rd mediation	48
◼ 4th mediation	26
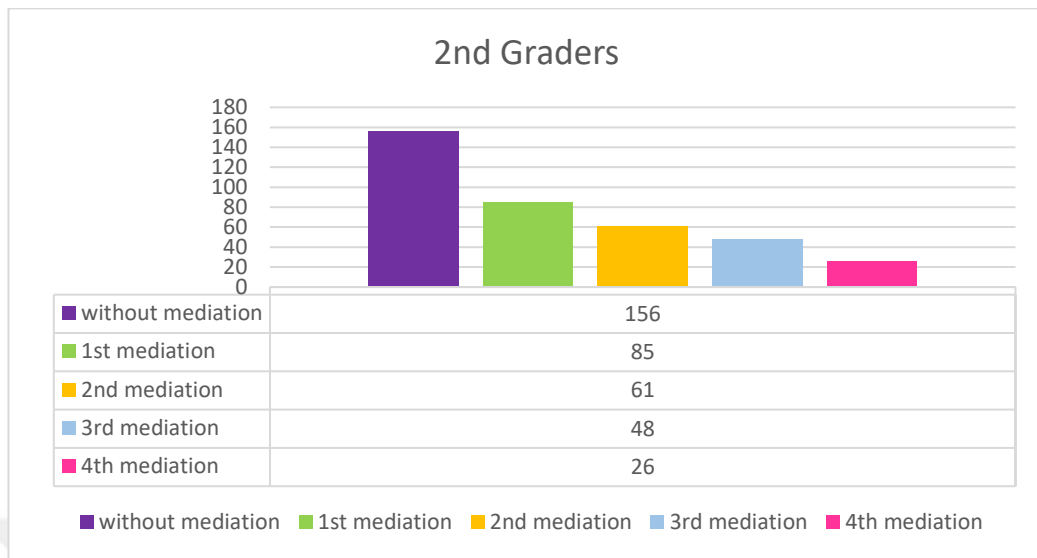
Figure 19: Learner Potential Score of 2nd Graders

◼ mean actual score	41
◼ mean mediated score	62
◼ mean gain score	21
◼ LPS	0.97
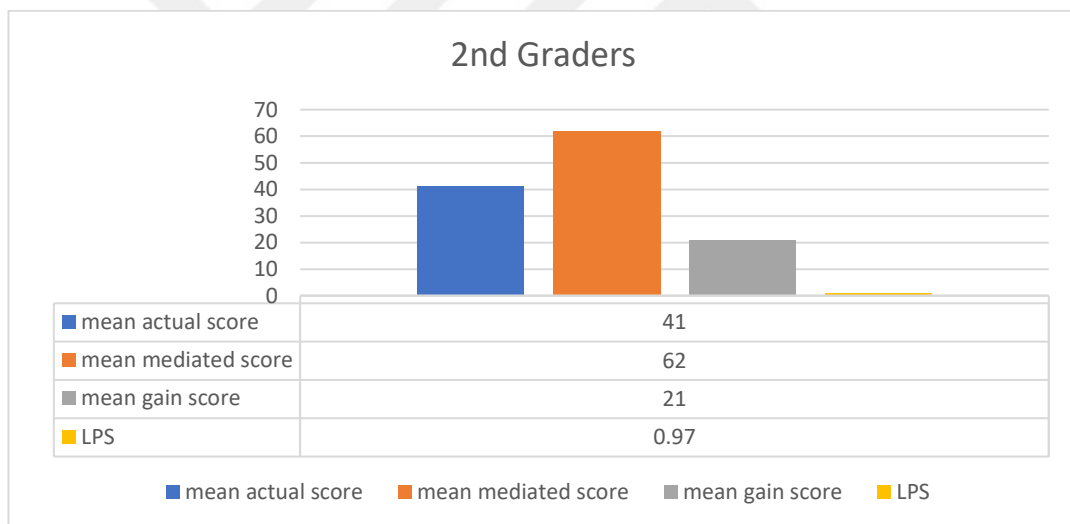
Figure 19 points out that the 2nd Graders' mean of the actual scores is 41 out of 82 points. The mean mediated score is 62 and the gain score is 21. The means of the actual score (41) are the same and mediated scores (61 and 62) are very similar to 1st graders but the LPS of 2nd graders is higher than the 1st graders ((.97>.95). This result indicates that the gain score precisely affects on LPS point.

3rd Graders' mediation frequencies are represented in Figure 20. There were 29 participants from 3rd Graders. They chose the correct answer 279 times at the first attempt without receiving any mediation. They received the first mediation 125 times,

the second mediation 85 times, the third mediation 61 times, and the fourth mediation 26 times. Likely to frequencies of preparatory students, second graders, and third graders, the usage rate of mediations is decreasing gradually from without mediation to fourth mediation. The mean of without mediation is 9.6, the mean of first mediation frequency is 4.3, second mediation's frequency mean is 2.9, third mediation's mean is 2.1 and the mean of fourth mediation is .9.

Figure 20: Mediation Responses of 3rd Graders

3rd Graders	
■ without mediation	279
■ 1st mediation	125
■ 2nd mediation	85
■ 3rd mediation	61
■ 4th mediation	26
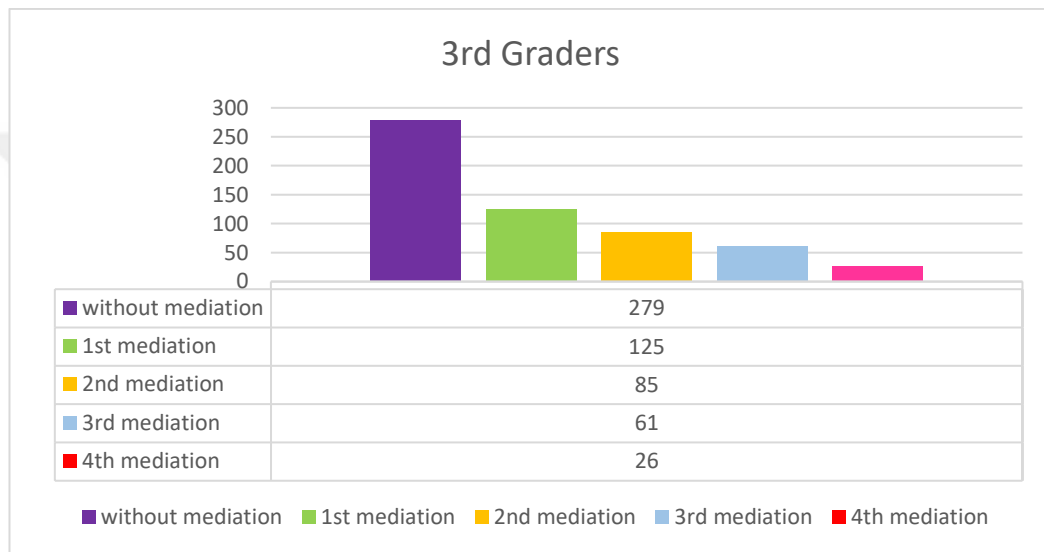
Figure 21 illustrates the 3rd Graders' mean of actual, mediated, and LPS scores which are respectively; 40, 61, and 21 out of 82 points. The findings show that the mean of the scores is the same as the 2nd Graders (.97=.97).

Figure 21: Learner Potential Score of 3rd Graders

3rd Graders	
■ mean actual score	40
■ mean mediated score	61
■ mean gain score	21
■ LPS	0.97
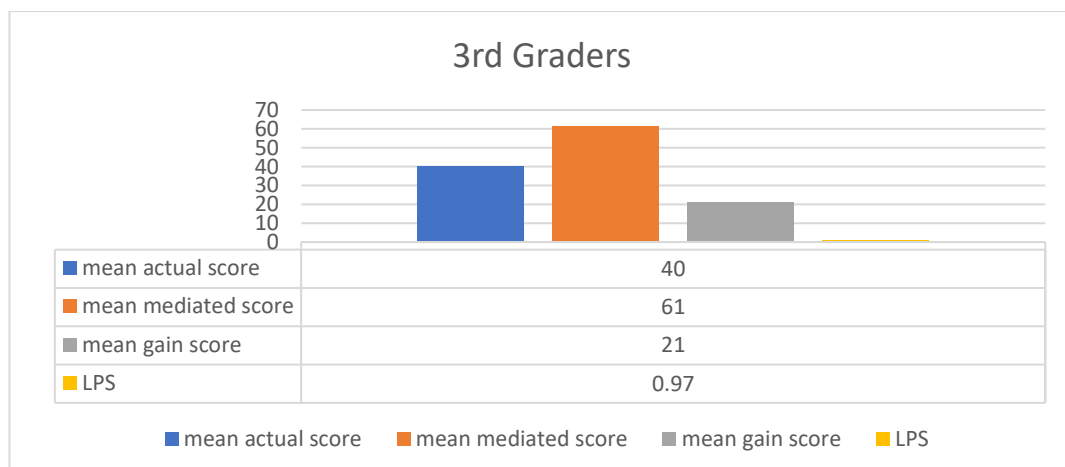
Figure 22 shows the mediation frequencies of 10 students from 4th Graders. The participants answered the questions 99 times at the without mediation phase. They used the first mediation 51 times, the second mediation 22 times, the third mediation 24 times, and the fourth mediation 26 times. Similar to 1st graders, the frequencies of 4th graders are not decreasing gradually from without mediation to fourth mediation. The usage of the fourth mediation is higher than the second and third mediation. The mean of without mediation is 9.9, the mean of first mediation frequency is 5.1, second mediation's frequency mean is 2.2, third mediation's mean is 2.4 and the mean of fourth mediation is 2.6.

Figure 22: Mediation Responses of 4th Graders
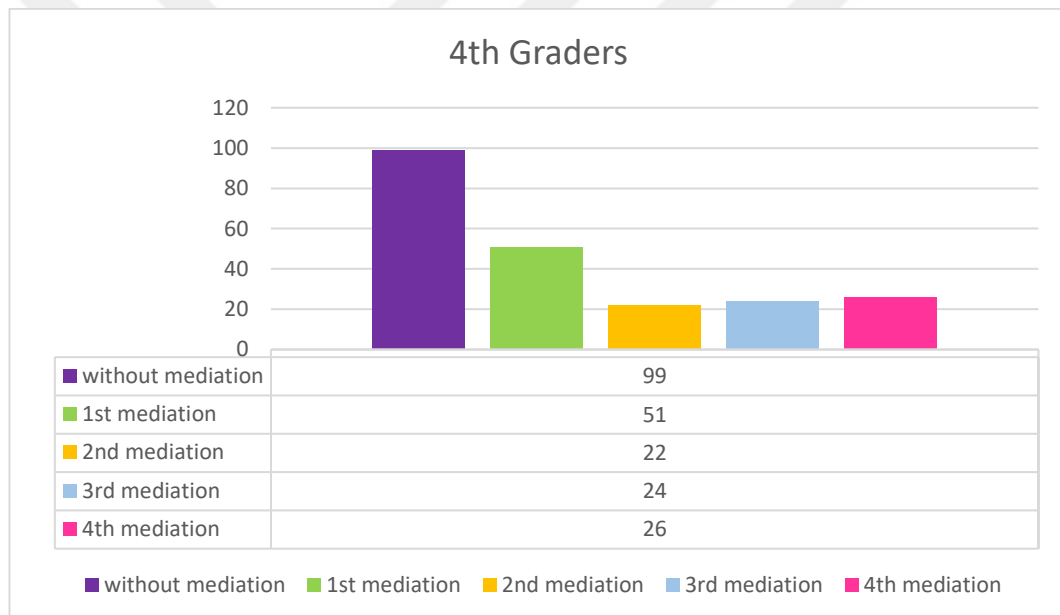
According to Figure 23, the mean actual score of fourth graders is 40 out of 82. The mean of actual scores of fourth-graders is the same as the third graders. While their mediated scores are 62 and 61 respectively, so the mean of LPS of fourth-graders is higher than the third graders.

Figure 23: Learner Potential Score of 4th Graders
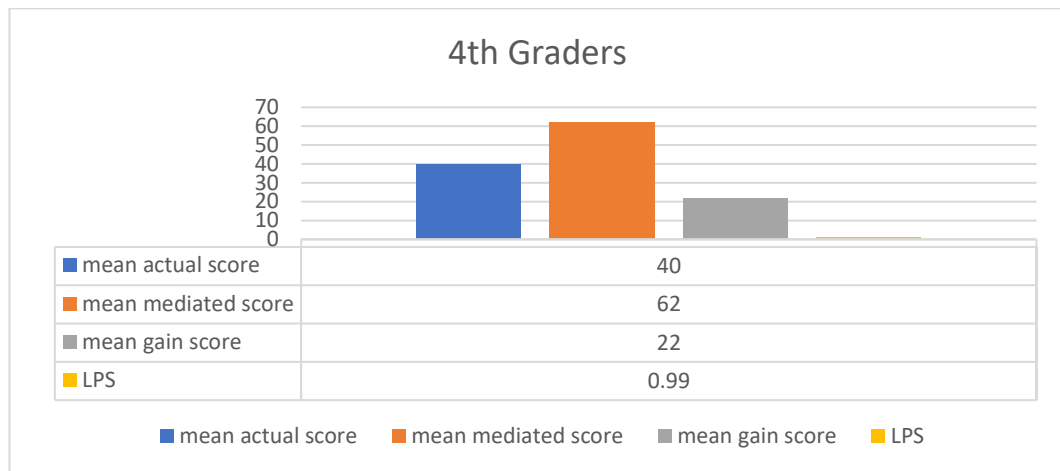
The means of the mediation frequencies of all grades are summarized in Table 13 in order to compare them. The first graders have the highest mean of without mediation (m=10.2), while second graders have the lowest frequency of without mediation (m=7.4). The first mediation is the most frequently used by the fourth graders (m=5.1); the least frequently used by the second graders (m=4). Preparatory class students have the highest mean of second mediation usage (m=3.3) while first graders have the lowest mean (m=2). Third mediation is the most frequently used by preparatory class students (m=2.6), the least frequently used by third-grade students (m=2.1). Fourth mediation usages' mean of fourth-grade students has the highest frequency (m=2.6) while third-graders have the lowest mean (m=.9). First graders have the highest and third graders the lowest frequency of overall types of mediations which is 10.2 and .9 respectively.

Table 13: The mean of the Mediation Frequencies

	Prep.	1	2	3	4
Without	8.6	10.2	7.4	9.6	9.9
1st	4.6	4.4	4	4.3	5.1
2nd	3.3	2	3	2.9	2.2
3rd	2.6	2.4	2.2	2.1	2.4
4th	1.04	1.9	1.2	.9	2.6

According to Figure 24, preparatory class and fourth graders have the highest Learner Potential Scores (.99). Second graders and third graders have the second-highest LPSs (.97). The lowest LPS score belongs to first graders (.95). These findings showed that the mean LPS of each grade has a high LPS score (≥ .91).

Figure 24: Learner Potential Scores of all Graders
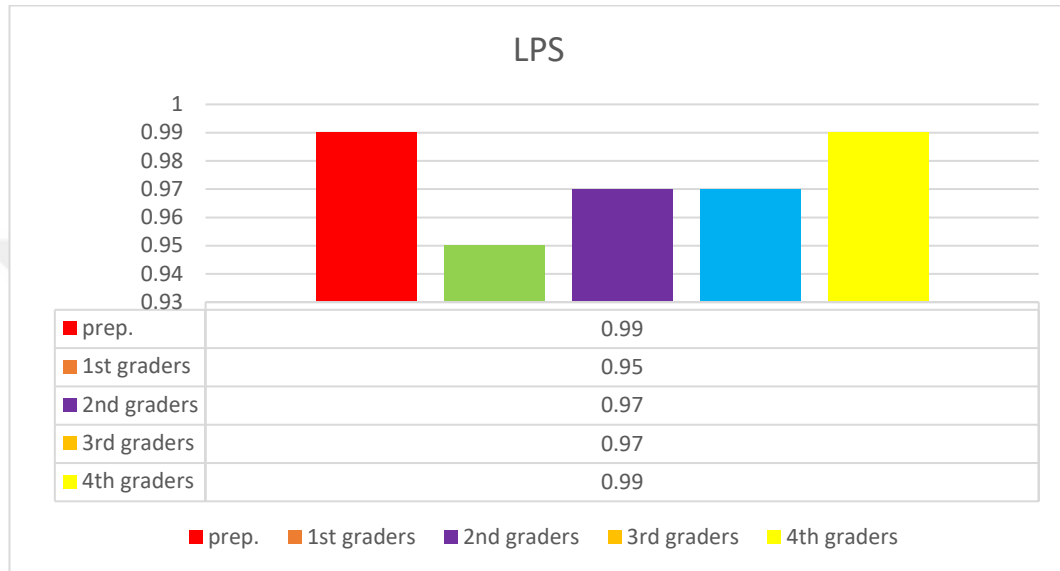
While Figure 24 shows the mean of the LPSs of each grade, Figure 25 illustrates the categorization of LPSs of all students. The categorization of LPS is based on the study of Poehner et al. (2015): "high LPS (≥ .91), mid LPS (.71–.90), and low LPS (≤ .70)".

Figure 25 states that most of the students achieved a high level of LPS. The x-axis shows the cores of LPS and the y-axis states the number of students. According to the y-axis, there are 71 students receiving a high level of LPS, 19 students under the middle category, and 2 students in the low category.

Figure 25
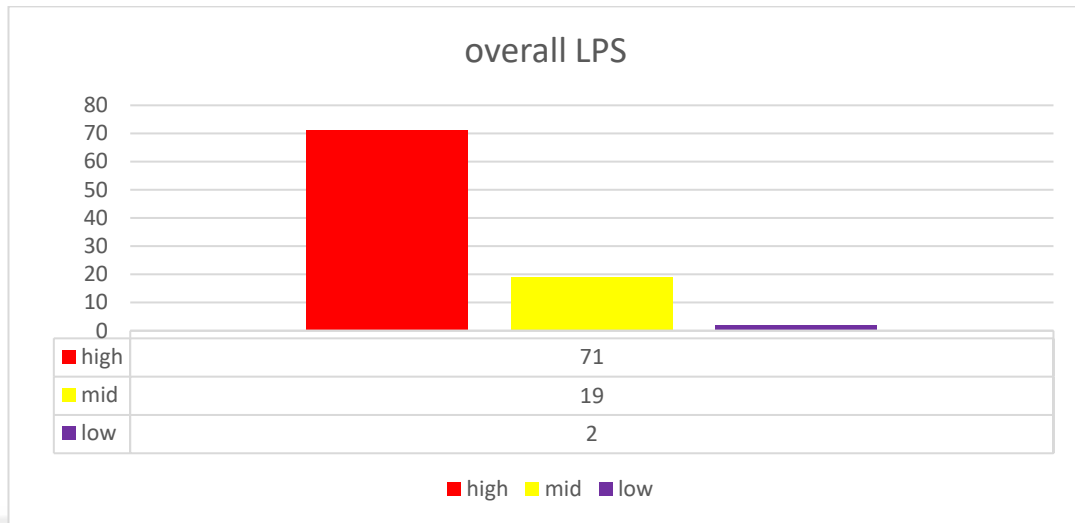
4.3 Conclusion

The present chapter includes the results of the statistical analysis and the discussion of them both quantitatively and qualitatively. The actual score was calculated from the results of the learners' first attempt to answer the questions without taking any mediation. Pearson correlation was administered to analyze the association between the actual and potential scores. In order to prove the significant difference between students' actual and mediated scores, the Wilcoxon signed-rank test was used. The significant difference was evidence for the effectiveness of the application of the DA to their Zone of Proximal Developments. Both for the first and third research questions of this study; mediation scores, actual scores, LPSs, the frequencies, and percentages of them were used in terms of descriptive analysis. Additionally, it was shown that the students from different grades almost had similar Learner potential scores and mediational levels. This resembles could be associated with the fact that they were placed to the universities with similar scores from the university entrance exam and it was more or the less the same each year. Thus, the closeness in their actual score and the high LPS levels could be explained so. When we consider the highest score, 40 mean of the actual score out of 82 was at the moderate level. But after a similar starting score, they got benefit from the mediations depending on the students' individual differences.

Basically, Dynamic Assessment considered the development of students as much as their needs instead of numerical judgment. On the other hand, it facilitated the students who had the potential but falling behind the others giving more opportunities for enhancement. Unlike the traditional static assessment which just took into account the final score and taking only 'screenshots' of the students' performances, DA offered metaphorically 'video recording' of their developments also allowing intervention of the teacher. Thus, it enabled both the detailed analysis of available and future performances of the students.

CHAPTER V

5. DISCUSSION AND CONCLUSION

5.1. INTRODUCTION

The present chapter covers the summary of the study and the review of research questions in relation to the relevant literature. Moreover, it presents the implications for further research and the limitations of this study.

5.2. SUMMARY OF THE STUDY

5.2.1. General Review of C-DA

Sociocultural Theory based on the Marxist principles that reject the idea of human consciousness is affected by only biological factors. According to sociocultural theory, all social interactions are important to develop cognitive ability. When the necessary support is provided by an expert, learners may overcome a more demanding task and they can reach the maximum zone of proximal development. Mediation from an expert is an important tool to move forward within the ZPD. According to Wells (1999) scaffolding is "a way of operationalizing Vygotsky's concept of working in the zone of proximal development" (Shabani et al., 2010, p. 241).

DA is an interactive type of assessment that includes mediations. According to the definition of Poehner (2008), DA is basically a combination of assessment and instruction on the behalf of the development of the child. Lantolf and Poehner (2004) explain the reasons for using DA as:

• DA is good both for assessing participants' general knowledge and their future potentials.

• DA is better to find out the reasons for unsuccessful performance on standardized tests.

• DA states the strength and weaknesses of participants (p.2).

Computerized dynamic assessment is a recently popular area that includes electronic mediation within the assessment procedure. C-DA provides standardized mediations to the students when they have a mistake. On the contrary to DA, C-DA can be applied to large numbers of participants. Even though C-DA is a new approach to assessment, previous studies have shown that it is widely used for the assessment of reading skills. With the help of the electronic mediations, continuous interaction was provided during the reading assessment to all participants simultaneously. This study bases on the idea of Lantolf and Poehner (2004) that implying DA improves the abilities of students through Vygotsky's notion of ZPD, in which teacher and student interacted with each other to complete the assessment.

5.2.2. Review of the Findings- Research Question 1

The main aim of this study was to compare the participants' C-DA and non-dynamic assessment performances. The relevant research question is as follows:

1. *What are the effects of C-DA on evaluating participants' abilities in reading comprehension questions?*

Before applying C-DA a pre-study was implemented to investigate students' mediation requirements. Then, the researcher and her supervisor determined five mediation steps for the implementation of DA procedures. According to the results of this implementation the actual, mediated, and Learning Potential Scores (LPS) were calculated for each student to reveal the effect of dynamic assessment. The scoring system of the LPS was similar to the study of Poehner et al. (2015); if the LPS was over than .91 ($\geq$ .91) high LPS was regarded, it was label as middle if it was between .71 and .90 (.71–.90), and it was considered as low LPS if it was less than .70 ($\leq$ .70).

Scores of eight students out of a total of 92 students were chosen. The results of these 8 students showed that the learners who had the same actual scores did not have to take the identical mediated scores. The students who were in the same group according to the static assessment fell into a different group based on their mediated scores in the dynamic assessment. Unlike the static assessment that using a single score, LPS represents a holistic way of stating the results of C-DA. The results showed that when the students supported with mediations, mostly they gave the correct answer. Moreover, this database reports important information on the individual needs of the students. All in all, the effectiveness of C-DA outperforms static assessment in these regards.

5.2.3. Review of the Findings- Research Question 2

The second aim of the study was to reveal the statistical difference between static and dynamic assessment. To meet the purpose of the study, this research question is provided:

2. *Is there a significant difference between the results of actual and mediated scores?*

Both non-dynamic and dynamic reading assessment scores were calculated with the aim of investigating the null hypothesis claims that there is no significant difference between actual and mediated scores. Computerized dynamic assessment scores were analyzed using SPSS. A Wilcoxon signed-rank test was run to reveal the difference between actual scores and mediated scores of participants.

According to the test results, there was a significant difference between the two scores (Z=-8,287, p=.000). While the standard deviation decreases from the actual to the mediated score, the mean scores increase from the actual score to the mediated score. These results statistically proved the students' gain score as proof of cognitive achievements which depends on the students' developing potential, not their scores. A Pearson correlation coefficient was run between students' actual scores and their mediated scores to probe the relationship between assisted ZPD and unassisted ZAD

performance of students. A strong positive correlation was proved between ZPD and ZAD performances of students (r= .893) while a strong negative correlation (r=–786) was elicited between learners' actual scores and gain scores. These findings stated that the C-DA procedure was more helpful for the learners with lower actual scores.

5.2.4. Review of the Findings- Research Question 3

The latest aim of this study was to reveal if the students from different grades were different or similar at the mediational needs and LPS scores. The research question for this goal was:

3.   Do different graders differ in their level of mediation and LPS?

The level of mediations of all grades from the preparatory class to the fourth grade was analyzed descriptively to answer the third research question. The mean of each level of mediation is calculated in order to compare the mediation responses of all grades because the number of participants from each grade is not equal. Accordingly, preparatory class students have the highest mean of second mediation usage and the third mediation is the most frequently used by them. The first graders have the highest mean of without mediation and they have the lowest mean of second mediation usage. Second graders have the lowest frequency of without mediation and the first mediation was the least frequently used by the second graders. Second mediation was the least frequently used by third-grade students and they have the lowest mean at the fourth mediation. The mean of fourth-grade students' fourth mediation usages is the highest frequency and first mediation is the most frequently used by the fourth graders. While first graders have the highest frequency of overall types of mediations, third graders the lowest frequency of overall types of mediations.

When the grade-based comparison of Learner Potential Scores was used, preparatory class and fourth-grade students have the same and the highest LPSs (.99). Second graders and third graders were following them with .97 scores of LPS while first graders had the lowest LPS score (.95). According to findings, the mean of LPS

scores of each grade was at a high level of LPS score categorization (≥ .91). To sum up, each student could differ in terms of the effectiveness of mediations.

5.3. DISCUSSION OF THE FINDINGS

The main concern of the present study was to reveal whether C-DA outperformed traditional assessment in terms of evaluating students' abilities in reading comprehension questions. Based on Vygotsky's (1987) distinction of ZAD and ZPD terms, the assumption was that the actual scores of students did not specify the potential of the students. The scores of selected eight students proved that the students who had identical actual scores did not have to take the same mediated scores (see, 4.2.1). For example; both Student C and Student D had the same actual scores but Student C had a higher mediated score than Student D. Thus, Student C outperformed Student D in terms of gain score. The gain score of Student C was 28 and he was placed in the high range of LPS (≥ .91), but the gain score of Student D was only 19 and he was placed in the middle range of LPS (.71–.90). The contrast between their scores could be explained with individual differences among learners. As explained by Kozulin and Garb (2002) and Poehner et al. (2015) students are distinctive at the zone of proximal developments.

Another example was the results of Student G and Student F. the actual score of Student G was 60 and he gained 9 points from mediations, so raised his mediated score from 60 to 69 while Student F had 20 actual scores and gained 26 points, so raised his mediated score from 20 to 46. That is also why the lower actual score benefits more from mediations. Thus, Student D went further in his zone of proximal development than Student C. Based on these examples in the study, it was asserted that the C-DA implementation was not only practical also useful in gathering information on the cognitive potential of students. It was notable that students who had identical actual scores showed a different level of capacities in terms of grasping the meaning and interpret the reading passages. After the implementation of DA, the main concern of testing was transferred from getting high scores to developing abilities with the help of integrating instruction and the assessment process. From a similar perspective, Valsiner and Van der (1993) supported the idea that trying to

enhancement in ZPD both aimed to develop the cognitive functions and to stimulate the development of new learning abilities. Poehner et al. (2014) made a contribution by expressing the main concern of C-DA was not only to maximize the scores of the learners as well as to catch the ZPD of them in order to differentiate the zone of actual and potential development levels. As for the actual score, it represented the participants' unmediated performance, so this score just describes their present performance, not their potentials. Per Vygotsky, mediation response attitudes of students could uncover their ZPD which gives diagnostic information for the instruction. This is among the strengths of C-DA over traditional non-dynamic assessment.

In the same vein as these findings, Pishghadam et al. (2011) concluded that the C-DA procedure was successful in distinguishing the reading comprehension skills of students. Moreover, C-DA made a contribution to low achievers more than high achievers. These results were in accordance with those prior studies of C-DA (e.g., Poehner & Lantolf, 2013; Poehner et al., 2015; Shabani, 2012; Teo, 2012). These results confirmed the effect of DA revealing the students' potential level and improving ability. Accordingly, Kozulin and Garb (2002) clarified that in giving insights about the ability of students, DA was better than traditional assessment empowering us to have a clear idea about their skills. Likewise, Yang and Qian (2017) stated in their study the effectiveness of C-DA which has more powerful diagnostic abilities than non-dynamic assessment. Also, their results explained that C-DA was useful in providing support for the low achievers.

The second research question addressed the differences between dynamic and nondynamic assessment. According to the research of Poehner et al. (2015), in a non-dynamic assessment, students' tries without any mediation were seen as their actual performances. In order to compare the actual and mediated performances, their scores in the C-DA section were calculated. The comparison between actual and mediated scores was analyzed using SPSS. For the statistical analysis, the Wilcoxon signed-rank test was run to reveal the difference between students' actual scores and their mediated scores to prove the significant difference statistically. The findings showed that from the actual score to the mediated score, the mean score rises and the standard deviation

declines from the actual to the mediated score. The Wilcoxon signed-rank test reported that there was a significant difference (Z=-8.287, p=.000) between the two scores. As the test results confirmed gain score was evidence of students' cognitive development. This enhancement was not about their scores but it referred to the students' developing abilities. As mentioned earlier (see.2.4), DA had the goal of reaching the learners to a potential development zone rather than a predetermined ending point. Through Vygotsky's ZPD definition, mediated scores represented the ZPD of students with the presentation of electronic media.

The related studies from literature found out similar results to the second research question of the present study. For instance, the study of Kozulin and Grab (2002) proved the effects of DA implementation in terms of student development. These results were in accordance with the study of Mardani and Tavakoli (2011), which collected the data from with and without mediation sections on reading comprehension questions. According to the findings of the Wilcoxon signed-rank test, the positive effects of mediation sections on the performances of students were revealed. A year later, Naeini and Duvall (2012) provided evidence that DA outperformed the non-dynamic assessment. These results can be expanded by the findings of previous studies from Albeeva (2008), Anton (2009), Pishgadam et al. (2011), Sadeghi et al. (2011), Yılmaz-Yakışık, (2012), Hidri (2014), Wang (2015), Yang and Qian (2017) and other researchers which compared dynamic and nondynamic assessments.

Furthermore, the relation between gain score and ZPD was crucial in the C-DA so this study was run the Pearson correlation between mediated scores and actual scores of them. The correlational analyses among actual, mediated, and gain scores found out that there was a positive correlation between actual and mediated scores of the participants (r= .893) but a negative correlation (r=–786) between actual scores and gain scores of the students. Thus, the relation was unveiled between ZPD and ZAD performances of students over the findings of the reading comprehension questions. Based on these findings, it could be concluded that the participants with higher actual scores had the tendency to get higher mediated scores, and the mediations were more helpful to students with lower actual scores. The study of Pishgadam, Barabadi, and

Kamrood (2011) reported that dynamic assessment of reading comprehension questions tended to be greater support for the low achievers than for the high achievers. The findings of Kozulin and Garb (2002), Poehner et al. (2015), Bakhoda (2015), and Shabanii (2018) were consistent with these results.

For the last research question, to investigate the difference among all graders the mean of LPSs and mediations were analyzed. So mediation response frequencies, mean of mediations for each grade were used to analyze them descriptively. While the highest LPSs (.99) belonged to preparatory class and fourth graders, the second-highest LPS (.97) belonged to second graders, and third graders and first graders had the lowest LPS score (.95). According to classification based on the mean LPS of each grade, they were at the high LPS score level ($\geq$ .91). The findings also concluded that even if the participants were individually different in their potential scores and mediational preferences, the mean of learner potential scores and mediation levels were close to each other also some of them were the same.

From the perspective of Vygotsky, mediational differences among individuals were both due to uniqueness in their zones of proximal development and their differences in cognitive and social development. In different circumstances, according to Aljaafreh and Lantolf (1994), Anton (2003), and Bakhoda and Shabani (2017), mediated scores and LPS scores were revealed independent future performances of students so the similarities among the means of grades were related to the closeness of the distance to their future performances.

Similar to the present study, the upshot of the study of Antón (2009) was that dynamic assessment allowed teachers to detailed information about the abilities of students and this provided them to apply the suitable approach for the needs of students. Moreover, Anton stated that when they just interpret the results of traditional tests, teachers may misunderstand the abilities of learners. Likewise, Agheshteh (2015) asserted that contrary to traditional assessment, DA enabled deeper analysis both on their present and future performances thus, DA prevented students from being placed into inappropriate levels.

In a nutshell, the present study was significant in terms of filling the gap in the literature on computerized dynamic assessment in the Turkish context which aimed to both develop and assess the reading comprehension skills of students. This study highlighted the role of mediations during the assessment for the students and teachers so it provided a blueprint for future studies. Implications for language teachers, limitation of the study, and implications for further research are presented below.

5.4. IMPLICATIONS FOR LANGUAGE TEACHERS

The main contribution of the current study was the application of the concepts of DA to a large number of participants. C-DA is a concept that combines the DA tenets with the advantages of computer technology. There are so many educational implications of C-DA and DA for language teachers. According to Isavi (2012), one of the crucial implications of DA is that it guides teachers to help their students for going beyond their current level and assist them to teach how to reach their proximal development. As Mardani and Tavakoli (2011) reported the studies claimed that there could be other explanations for increasing performances of students, namely the automatized mediations whenever they need, provide them to analyze the profile of each student so, C-DA enables students to the self-assessment. Haywood and Lidz (2007) state in their study that DA is an idiographic attempt in which each student's performances are not compared to performances of other students, rather than their development throughout time is regarded.

DA is not only a formative assessment but also DA is a pedagogical approach that is supported by Sociocultural theories of mind and development considering the participants' psychological handicaps too. In the study of Hessamy and Ghaderi (2014) one of the advantages of DA is explained that it enables highly involvement of students in the process of learning. Moreover, thanks to the implementation of DA, students who have non-intellective conditions such as lack of confidence, motivation can benefit more and it creates a more learner-friendly environment during the assessment.

5.5. LIMITATIONS OF THE STUDY

This study has some limitations in terms of the implementation of C-DA. The findings of this study are limited to just one university context. Thus, in terms of generalizability of results, replication of the current study can be designed with a large number of students from different universities to validate the present results.

The second limitation is the advantage of content knowledge of students during the assessments. Even if strategies-based reading comprehension passages were chosen intentionally as a text for the assessment, the absence of the element of content knowledge is still impossible. In short, students who have better vocabulary and grammar knowledge can reach a higher development level.

The third limitation is the C-DA format is applied in just one session in this study. Further researchers are recommended to expand the sessions of implementation to observe the advantages of C-DA on enhancing learner development.

The fourth limitation is the number of the groups in our research are heterogeneous. So, the statistical tests were not preferred and descriptive analysis is used to summarize the data in terms of frequencies and means of them.

The final limitation is the researcher are not the teacher of the participants. A teacher as a researcher can interpret better the progress of her own learners also, she could be benefited more from the results of the study for future lesson plans.

5.6. FURTHER RESEARCH

Further studies can focus on the limitations and results of the present study. First of all, the format of questions is multiple choice in this research for its applicability to large-scale studies. The open-ended-question format can be applied to upcoming small-scale studies of C-DA.

Secondly, we examined only reading comprehension skills in this study, but further researchers can investigate the other skills such as writing, listening, and speaking. Also, further researchers can reveal more comprehensive results regarding the students' individual differences in second language reading comprehension questions.

Thirdly, researchers should try to examine the effect of mediation by comparing different types of mediators such as electronic mediation and teacher as a mediator. In other words, a study can be conducted to analyze the reliability of LPSs from different assessment sessions applied by different mediators in future researches.

Fourthly, further researches are needed to confirm the predictive validity of the Learner Potential scores of students. One of the possible recommendations for future researches can be conducting a study with different groups of learners categorized according to their different LPS to validate the teaching effect of C-DA. In this scenario, when scores of students who have high LPS levels are better than the low LPS group's scores, the results prove the validity of LPS in predicting future potential development of students.

Fifthly, one way or another all assessments are associated with the content knowledge of students. The students who are good at grammar rules and vocabulary knowledge are expected to have higher scores. A vocabulary size, vocabulary depth, and grammar level test can be integrated into the study in order to discover and make a comparison between the developments of the students.

Sixthly, the limited time is not enough to observe the internalization of the students' learnings so a longitudinal case study is recommended to prove the transfer and positive effects of C-DA. Thus, it provides the teachers to prepare learning plans suitable for the language development levels of students.

Seventhly, C-DA studies can be combined with eye-tracking technology which records the participants' eye movements while they are reading the written text and

gives a record of these movements. This data can be used as guidance in order to prepare the mediations and make a detailed analysis of their assessments.

Finally, inquiring on the opinions of the stake-holders like mediators or students can reveal different results. C-DA is a recent interest in literature, so further studies are needed to validate its applicability and effectiveness in the assessment of the second language.

CONCLUSION

The present study examined the effects of C-DA on advanced level university students in reading comprehension questions. In order to prove the assumptions, the following research questions were addressed also to make a contribution to the Turkish context: (1) What are the effects of C-DA on evaluating participants' abilities in reading comprehension questions? (2) Is there a significant difference between the results of actual and mediated scores? (3) Do different graders differ in their level of mediation and LPS? LPS, actual score, and mediation scores of eight students out of a total of 92 students were compared with each other to answer the first research question. For the second research question, the Wilcoxon signed-rank test was applied through SPSS. To answer the third research question, means of mediational levels and LPSs of each grade were used to get more detailed information.

According to the findings of this study, when the needed support was offered to the learners with the help of the mediations, most of them gave the correct answer. For the results of the first research question, the findings of the eight students revealed that the students differed in their actual and mediated scores. In other words, the students who were in the same category based on the results of the traditional assessment were placed into different groups based on the evidence of their mediated scores in the computerized dynamic assessment. From this perspective, dynamic assessment outperformed traditional static assessment. The results of the second research question indicated that according to the findings of the Wilcoxon signed-rank test, there was a significant difference between actual and mediated scores of the students. Moreover, a Pearson correlation was run and a positive correlation was found out between actual scores and mediated scores of students while a strong negative correlation was revealed between actual scores and gain scores of students. According to the interpretation of results, while the students with high actual scores had high mediated scores, students with low actual scores took more advantage of the mediations. As for the third research question, the quantitative analysis of findings with reference to their mediational levels and frequencies of the results of students from different grades were compared.

In a nutshell, the result of the present study made a contribution to the relevant literature. For instance; the same as the result of this study, Pishgadam, Barabadi, and Kamrood (2011) proved in their study that dynamic assessment of reading skills helped more for the students with low scores than for the students with high scores. This finding was consistent with these studies (e.g., Bakhoda, 2015; Kozulin and Garb, 2002; Poehner et al., 2015 and Shabanii, 2018). Furthermore, one of the results of this study was DA outperformed the traditional assessment. This result was in accordance with the findings of previous studies from Albeeva (2008), Anton (2009), Pishgadam et al. (2011), Sadeghi et al. (2011), Naeini and Duvall (2012), Yılmaz-Yakışık, (2012), Hidri (2014), Wang (2015), Yang and Qian (2017). Also, this finding could be expanded with those prior studies of C-DA such as Shabani (2012), Teo (2012), Poehner and Lantolf (2013), Poehner et al. (2015).

REFERENCES

1. Books

Albeeva, R. (2008). "The effects of dynamic assessment on L2 listening comprehension". In J. P. Lantolf & M.E. Poehner (Eds.), *Sociocultural theory and the teaching of second languages* (pp.57-58). London: Equinox.

Block, D. (2003). *The social turn in second language acquisition*. Edinburgh: Edinburgh University Press.

Bruner, J. S. (1978). "The role of dialogue in language acquisition". In A. Sinclair, R. J. Jarvelle & W. J.M. Levelt (Eds.), *The Child's Concept of Language*. New York: Springer-Verlag.

Bruner, J.S. (1983). *In search of mind: Essays in autobiography*. Cambridge: Harvard University Press.

Büyüköztürk, Ş. (2013). *Sosyal bilimler için veri analizi el kitabı* (18th ed.). Ankara: PegemA Yayıncılık

Daniels, H. (2001). *Vygotsky and pedagogy*. NY: Routledge-Falmer.

Grab, W. (2009). *Reading in a second language*. Cambridge: CUP.

Hartman, H. (2002). *Scaffolding and cooperative learning: Human learning and instruction.* New York: City College of the City University of New York.

Haywood, H. C., & Lidz, C.S. (2007). *Dynamic Assessment in Practice: Clinical and Educational Applications*. Cambridge: Cambridge University Press.

Killen, R. (2005). *Programming and assessment for quality teaching and learning*. Southbank Victoria: Thomson Social Science Press.

Kozulin, A. (1998). *Psychological tools: A sociocultural approach to education.* Cambridge, MA: Harvard University Press.

Krause, K., Bochner, S. & Duchesne, S. (2003). *Educational psychology for learning and teaching*. Australia: Thomson.

Lantolf, J., Thorne, S. L., & Poehner, M. (2015). "Sociocultural theory and second language development". In B. van Patten & J. Williams (Eds.), *Theories in Second Language Acquisition* (pp. 207-226). New York: Routledge.

Lantolf, J.P., & Thorne, S. L. (2006). *The sociogenesis of second language development.* Oxford: Oxford University Press.

Lantolf. J. P. (2001). *Sociocultural theory and second language development*. Oxford: Oxford University Press.

Leont'ev, A. N. (1981). *Problems in the development of the mind.* Moscow, Russia: Progress.

Lidz, C. S. (1991). *Practitioner's guide to dynamic assessment*. New York: Guilford Press.

Lidz, C.S. & Gindis, B. (2003). "Dynamic assessment of the evolving cognitive functions in children". In Kozulin, A., & Gindis, B., & Ageyev, V.S., & Miller, S.M. (Eds.), *Vygotsky's educational theory in cultural context* (pp. 99–118). Cambridge: Cambridge University Press.

Lightbown, P., & Spada, N. M. (2006). *How languages are learned.* Oxford: Oxford University Press.

McDevitt, T.M., & Ormrod, J.E. (2002). *Child Development and Education*. Upper SaddleRiver, NJ: Merrill Prentice Hall.

Mercer, N. (1994). "Neo-Vygotskian theory and classroom education". In B. Steirer & J. Maybin (Eds.), *Language, literacy and learning in educational practice* (pp. 97-121). Clevedon, Avon: Multilingual Matters.

Phillips, D. (2014). *Longman preparation course for the TOEFL IBT test with answer key 3rd edition.* London: Pearson Publishing.

Poehner, M. E. (2008). *Dynamic assessment: A Vygotskian approach to understanding and promoting second language development*. Berlin: Springer Publishing.

Robson, C. (1993). *Real world research: A Resource for social scientists and practitioner researchers*. Blackwell Publishers Inc., Oxford.

Spady, W. G. (1994). *Outcome based education: Critical issues and answers*. Arlington, VA: American Association of School Administrators.

Sternberg, R. J., & Grigorenko, E. L. (2002). *Dynamic testing: The nature and measurement of learning potential*. Cambridge: Cambridge University Press.

Tabachnick, B. G., & Fidell, L.S. (2013). *Using multivariate statistics* (sixth Ed.). Pearson, Boston.

Valsiner, J. & Van der Veer, R. (1993). The encoding of distance: The concept of the zone of proximal development and its interpretations. In R.R. cocking and K.A. Renninger (Eds.), *The development and meaning of psychological distance* (pp.35-62). Hillsdale, NJ: Lawrence Erlbaum Associates.

Van der Veer, R. & Valsiner, J. (1991). *Understanding Vygotsky.* Oxford: Blackwell.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Vygotsky, L. S. (1998). *The problem of age.* New York: Plenum.

Vygotsky, L.S. (1986). *Thought and language*. Newly Revised and Edited by A. Kozulin. Cambridge, MA: MIT

Wells, G. (1999). *Dialogic inquiry: Towards a sociocultural practice and theory of education.* New York: Cambridge University Press.

Wertsch, J. V. (1979b). *The Regulation of Human Action and the Given-new Organization of Private Speech*. New York: J. Wiley and Sons.

Wertsch, J.V., & M. Hickmann. (1987). "Problem-solving in social interaction: a micro genetic analysis". In. M. Hickmann (Eds), *Social and Functional Approaches to Language and Thought* (pp.111-132). San Diego, CA: Academic.

Williams, M., & Burden, R. (1997). *Psychology for language teachers: A social constructivist approach.* Cambridge University Press, Cambridge.

Woolfolk, A. E., Winne, P. H., & Perry, N. E. (2000). *Educational psychology, Canadian Edition*. (pp. 42-48); Cognitive Development and Language. Scarborough: Allyn and Bacon Canada.

2. Journal Articles, Conference Papers

Agheshteh, H. (2015). "Dynamic assessment for better placement: Implications of Vygotsky's ZAD and ZPD". *International Journal of Applied Linguistics & English Literature*, 4(5), 190-197.

Alavi, M.S., & Taghizadeh, M. (2014). "Dynamic assessment of writing: The impact of implicit/explicit mediations on L2 learners' internalization of writing skills and strategies". *Educational Assessment*, 19(1), 1-16.

Aljaafreh, A., & Lantolf, J.P. (1994). "Negative feedback as regulation and second language learning in the zone of proximal development". *The Modern Language Journal*, 78(1), 465–483.

Anton, M. (2009). "Dynamic assessment of advanced second language learners". *Foreign Language Annals*, 42(3), 576-598.

Bailey, K. (1996). "Working for washback: a review of the washback concept in language testing". *Language Testing*, 13 (3), 257–279.

Bakhoda, I., & Shabani, K. (2018). "Bringing L2 learners' learning preferences in the mediating process through computerized dynamic assessment". *Computer Assisted Language Learning*, 32(3), 210-236. DOI: 10.1080/09588221.2018.1483950

Çalış, S. (2018). The impact of the implementation of dynamic assessment on students' metasyntactic awareness. Unpublished MA Thesis, Çağ University, Institute of Social Sciences.

Derakhshan, A., & Kordjazi, M. (2015). "Implications of dynamic assessment in second/foreign language context". *English Linguistics Research*, 4(1), 41-48.

Frawley, W., & Lantolf, J. P. (1985). "Second language discourse: A Vygotskian perspective". *Applied Linguistics*, 6(1), 19-44. http://dx.doi.org/10.1093/applin/6.1.19

Hessamy, G. & Ghaderi, E. (2014). "The role of dynamic assessment in the vocabulary learning of Iranian EFL learners". *Social and Behavioral Sciences*, 98(1), 645-652.

Hidri, S. (2014). "Developing and evaluating a dynamic assessment of listening comprehension in an EFL context". *Language Testing Asia*, 4(4), 1-19.

Isavi, E. (2012). The effect of dynamic assessment on Iranian L2 writing performance. Retrieved from http://eric.ed.gov/?id=ED530902

Kamali, M., Abbasi, M., & Sadighi, F. (2018). "The effect of dynamic assessment on L2 grammar acquisition by Iranian EFL learners". *International Journal of Education & L2 Literacy Studies*, 6(1), 72-78.

Kozulin, A., & Garb, E. (2001). *Dynamic assessment of EFL text comprehension*. Paper presented at the 9th Conference of the European Association for Research on Learning and Instruction. Fribourg, Switzerland, August.

Kozulin, A., & Garb, E. (2002). "Dynamic assessment of EFL text comprehension of at-risk students". *School Psychology International*, 23(1), 112–127.

Lantolf, J. P., & Poehner, M. E. (2011). "Dynamic assessment in the classroom: Vygotskian praxis for L2 development". *Language Teaching Research*, 15(1), 11–33.

Lantolf, J.P. & Poehner, M.E. (2004). "Dynamic assessment of L2 development: bringing the past into the future". *Journal of Applied Linguistics*, 11(1), 49–72.

Mardani, M., & Tavakoli, M. (2011). "Beuonf reading comprehension: The effect of adding a dynamic assessment component on EFL reading comprehension". *Journal of Language Teaching and Research*, 2(3), 688-696.

McNeil, L. (2018). "Understanding and addressing the challenges of learning computer-mediated dynamic assessment: A teacher education study". *Language Teaching Research*, 22(3), 289-309.

Naeini, J., & Duvall, E. (2012). "Dynamic assessment and the impact on English language learners' reading comprehension performance". *Language Testing in Asia, 2*(2), 22-31. http://dx.doi.org/10.1186/2229-0443-2-2-22

Pishghadam, R., Barabadi, E., & Kamrood, A. M. (2011). "The differing effect of computerized dynamic assessment of L2 reading comprehension on high and low achievers". *Journal of Language Teaching and Research*, 2 (6), 1353-1358.

Poehner, M. E., & Lantolf, J. P. (2013). "Bringing the ZPD into the equation: Capturing L2 development during computerized dynamic assessment". *Language Teaching Research*, 17(3), 323–342.

Poehner, M. E., Zhang, J., & Lu, X. (2015). "Computerized dynamic assessment (C-DA): Diagnosing L2 development according to learner responsiveness to mediation". *Language testing*, 32(3), 337–357.

Poehner, M.E., & Lantolf, J.P. (2005). "Dynamic assessment in the language classroom". *Language Teaching Research, 9*(3), 1–33.

Poehner, M.E., & van Compernolle, R.A. (2013). "L2 development around tests: Learner response processes and dynamic assessment". *IRAL- International Review of Applied Linguistics in Language Teaching,* 51(4), 353-357.

Sadeghi, K., & Khanahmadi, F. (2011). "Dynamic assessment of L2 grammar of Iranian EFL learners: The role of mediated learning experience". *International Journal of Academic Research*, 3(2), 931-936.

Safa, A., & Beheshti, S. (2018). "Interactionist and interventionist group dynamic assessment (GDA) and EFL learners' listening comprehension development". *Iranian Journal of Language Teaching Research*, 6(3), 37-56.

Şentürk, Y. (2019). Dynamic assessment of secondary school EFL learners' tense preferences in writing activities. Unpublished Master Thesis, Kocaeli University, Institute of Social Sciences.

Sumi, S., & Miyazawa, Y. (2017). "Application of the graded response model of item response theory to computerized dynamic assessment in L2 English education". *The Journal of Information and Systems in Education*, 16(1), 18-25.

Teo, A. (2012). "Promoting EFL students' inferential reading skills through computerized dynamic assessment". *Language Learning & Technology*, 16(3), 10–20.

Thouësny, S. (2010). Assessing second language learners' written texts: An interventionist and interactionist approach to dynamic assessment. In proceedings of the World Conference on Educational Multimedia, Hypermedia and Telecommunications (ED-MEDIA). Toronto, Canada, 3517-3552.

Thouësny, S. (2014). How systematic and random are errors and mistakes in texts written by language learners of French? Proceedings of the 4th International Conference on foreign Language Teaching and Applied Linguistics (FLTAL). Sarajevo, Bosnia and Herzegovina, 2071-2079.

Turuk, M., C. (2008). "The relevance and implications of Vygotsky's sociocultural theory in the second language classroom". *ARECLS*, 5(1), 244-262.

Van der Veen, C., Dobber, M. & and van Oers, B. (2016). "Implementing dynamic assessment of vocabulary development as a trialogical learning process: A practice of teacher support in primary education schools". *Language Assessment Quarterly: An International Journal*, 13(4), 329-340.

Wang, P. (2015). "The effect of dynamic assessment on the listening skills of lower-intermediate EFL learners in Chinese Technical College: A pilot study". *Journal of Language Teaching and Research*, 6(6), 1269-1279.

Wertsch, J. V. (1979a). From social interaction to higher psychological processes: A clarification and application of Vygotsky's theory. *Human Development*, 22(1), 1-22.

Wood, D., Bruner, J. S., & Ross, G. (1976). "The role of tutoring in problem solving". *Journal of Child Psychology and Psychiatry*, 17(1), 89–100.

Yang, Y., & Qian, D.D. (2017). "Assessing English reading comprehension by Chinese EFL learners in computerized dynamic assessment". *Language Testing in Asia*, 7(1), 1-15.

Yılmaz-Yakışık, B. (2012). Dynamic assessment of ELT students' speaking skills. Unpublished Doctoral Thesis, Gazi University, Institute of Educational Sciences.

APPENDICES

APPENDIX I: Reading Comprehension Questions

The Neanderthals

Relatively recent archeological finds have brought about a considerable alteration in perception about the Neanderthals. Neanderthals had previously been characterized more as primitive beasts than as intelligent and compassionate human ancestors. However, evidence suggests that they may have been more sophisticated than previously thought.

A Neanderthal skeleton was first discovered in 1829 near Enis, Belgium. Workers uncovered an incomplete skeleton consisting of a skull cap, two femur bones, three bones from the right arm and two from the left arm, fragments of the shoulder blades, and ribs. The workers thought that these remains were of a bear and turned them over to a local, amateur naturalist. But it would not be until 1856 that Neanderthals would be identified as being a distinct species of hominid by Johann Karl Fuhlrott. Although it is debated exactly how and when Neanderthals went extinct, it is conservatively accepted that Neanderthals lived during a period that extended from at least 40,000 to 100,000 years ago in a variety of environments ranging from relatively warm and arid to extremely frigid areas. Neanderthals are thought to have died out from competition with Homo sapiens, although some scientists have suggested they were wiped out by climate change.

The Neanderthals can be distinguished from modern man in that they had a more robust skeleton and stronger facial structure with a more protruding brow, a broader nose, and larger teeth. Casts made of Neanderthal skulls by archeologists indicate that Neanderthal cranial capacity was as large as modern humans, suggesting little difference in brain size.

A clearer picture of Neanderthals has come about recently as archeologists have determined that, in addition to the known ability to develop and use tools in a rather skilled way, Neanderthals also exhibited evidence of beliefs and social rituals, aspects of life that were newly introduced by Neanderthals and that provide evidence of humanlike thoughts and feelings.

Neanderthal cemeteries have been discovered in numerous places and the remains in these cemeteries have provided proof of social organization and ritual among the Neanderthals. One skeleton of a Neanderthal was found with a crushed skull: the blow on the top of the head, perhaps from a falling boulder, had quite obviously been the cause of death. What was interesting was that study of the skeleton showed that while he had been alive this man had been seriously handicapped with a defect that had limited use of the upper right side of his body, and that he was blind in one eye. The fact that he had survived well into old age was a strong indication that others had been helping to care for him and to provide him with food rather than

allowing him to die because he was no longer physically fit. Other skeletal remains of Neanderthals indicate the practice of burial rituals. Another skeleton of a grown male was found surrounded by pollen from eight different flowers, including ancestors of today's hyacinth, bachelor's button, and hollyhock: experts are convinced that the flowers could not have been growing in the cave where they were found and that the pollen had been deliberately arranged around the body.

1.   According to passage, recent archeological discoveries have suggested that Neanderthals were

A   less intelligent than other predecessors of modern human beings

B   more skillful hunters of big game animals than previously assumed

C   more complex creatures than they were traditionally believed to be

D   lacking the compassion that later humans possessed

2.   It can be inferred that the first discovery of Neanderthal bones was not identified as a distinct species of hominid because

A   they were misidentified as animal remains

B   the skeleton was missing several important bones

C   the exact date of the Neanderthals' extinction was being debated at the time

D   there was no existing technology that could accurately date the remains

3.   The author discusses "Neanderthal cemeteries" in order to

A   indicate that Neanderthals buried their dead in the same manner as their predecessors did

B   illustrate the ways that Neanderthals' thoughts about death were evolving

C   contrast Neanderthals' burial rituals with their predecessors' burial rituals

D   introduce an example of a social ritual practiced by Neanderthals

4. **According to passage, the fact that the skeleton with the crushed skull was from a person who lived well into old age suggests that**

A his handicap did not limit his mobility.

B the limited use of the right side of his body did not prevent him from providing himself with food.

C he was assisted by others because he was physically unable to take care of himself.

D the falling boulder was not the cause of his death.

Seventeenth-Century Dutch Painting

The seventeenth century is generally acknowledged as the golden age of Dutch painting. At this time the Netherlands was the most prosperous nation in Europe, leading the continent in commerce, scientific advancements, and the arts. In the Netherlands, most of the inhabitants of the rich merchant towns adhered to the tradition of good craftsmanship, and consequently there was a proliferation of distinct branches of painting. The majority of painters of this period had to concentrate on a certain branch of painting, constituting the bulk of their artistic output.

The most important of these branches was portrait painting. Most portraits of this period were commissioned (the artist was hired to paint the subject) or were at least the product of negotiation between the artist, the sitter, and a patron. Many merchants desired to have their likeness represented in a painting to pass on to their descendants, or elected officials commissioned portraits to indicate the importance of their office. In addition, there were many local committees or governing boards-so dominant in Dutch civil life-that followed the tradition of having group portraits painted that would adorn the meeting rooms of the companies. A painter whose style appealed to the public could reasonably expect a steady income. However, no matter how successful a painter may have been, once his style ceased to be fashionable or in the face of an economic downturn, he could experience severe financial hardship. For example, Rembrandt van Rijn (1606-1669), the most renowned Dutch painter of the seventeenth century, had his greatest financial success as a portrait painter in Amsterdam, but in his later years had considerable difficulty earning a living. As the popularity of his paintings declined, Rembrandt went into debt and eventually his creditors sold his house and liquidated his art collection at auction.

Painters of this period who had no inclination or talent for portrait painting turned to less esteemed genres. Once an artist found a certain degree of success in painting in a specific genre, such as landscapes, still life, or battle scenes, he would repetitively and without originality, stick with that genre. Unlike portrait painters, the genre painters had to paint their pictures first, and then try to find prospective buyers for their works. To some degree many of these artists were happy to be relieved of the burden of having to please a patron, who often dictated what the artist was to create. However, once freed from the patronage system, the genre painter was at the mercy of the changeable tastes of the buying public. These painters had to either go into the market places and sell directly to their customers, or rely on middlemen who would

buy paintings in bulk from an artist at a reduced price and then later sell the paintings at a considerable mark-up.

Moreover, competition among genre painters was intense. It has been estimated that approximately 1.3 million paintings were produced over a 20-year period. Because of the sheer volume of production, the price of paintings was relatively low with the exception of the most fashionable painters of the times, whose works could sell for considerable sums of money. These factors often forced less-skilled painters into a restrictive degree of specialization, producing essentially the same painting repeatedly to ensure a stable but meager income.

5. **According to passage, most of the Dutch artists of the seventeenth century**

A   had experience in the fields of business and science

B   were unaware of the adherence to traditional craftsmanship

C   created works in traditional branches of painting

D   produced most of their work in a specific genre

6. **According to passage, all of the following were reasons for people to commission portraits EXCEPT**

A   to decorate their offices with the portraits

B   to hand down the portraits to later generations of their family

C   to give the portraits as gifts during business negotiations

D   to indicate the level of their political power

7. **According to passage, even the most successful artists could experience**

A   restrictions on the number of patrons they were allowed to have

B   being prohibited from serving on local committees or governing boards

C   their art not being included in prestigious collections

D   financial setbacks due to changes in the public's taste

8.   **It can be inferred that portrait painters**

A   were not overly concerned about pleasing their patrons

B   were more likely to paint in different genres than less skilled painters

C   had arranged for their payment before they started a painting

D   painted their works in order to satisfy prospective customers

9.   **According to passage, because of the high volume of paintings being produced in the seventeenth century**

A   artists were freed from having to paint the same kind of paintings repeatedly.

B   the financial survival of artists depended on their specialization in a narrow range of paintings.

C   most artists were forced out of financial necessity to produce more fashionable paintings.

D   most artists could receive considerable sums of money from the sale of their paintings.

The Silent Era

The first thirty-five years of motion picture history are called "the silent era," even though films were accompanied by music or live narration-from the Japanese benshi (narrators) crafting multi-voiced dialogue narratives, and original musical compositions performed by pianists or organists, to symphony-size orchestras-because there was no mechanical means for recording and playing back recorded dialogue or music in synchronization with the reel of film. Films of this era progressed from very rudimentary to much more elaborate in the years that bookended the era of silent films, 1894 to 1928.

The silent era of motion pictures began when the Kinetograph and the Kinetoscope, inventions created in Thomas Edison's New Jersey laboratory in 1892 to film and to view short sequences respectively, were used to create and present 30-second films of novelty acts to American and European audiences in 1894. The Kinetoscope was a cabinet that was designed for a single viewer; the viewer would look through an eyepiece in the cabinet and watch a short series of moving pictures. Edison's decision not to pursue international patents on his devices led to many improvements by European inventors on Edison's initial ideas. One such improvement is the Cinématographe, which was developed by the French brothers Auguste and Louis Lumière. The Cinématographe was a three-in-one device that could record, develop, and most notably, project motion pictures for a large audience, and it was this machine that turned the motion picture into a worldwide phenomenon. The Lumières held the first public screening of their motion pictures at the Grand Café in Paris in

1895. Their debut was received enthusiastically and had a significant impact on popular culture at that time. For the next few years, the films created were rather brief and often cited as the first primitive documentaries: each film consisted of a single shot from a lone stationary viewpoint. By 1897 the initial enthusiasm for the Lumière films faded as audiences desired something more entertaining.

A transitional period from 1908 to 1917 was an era in which motion pictures changed from a primitive documentary medium to a more expressive art form. Actors developed their ability to convey ideas without words and creative inter-titles provided written commentary between sections of the moving images. Filming techniques were developed, with the introduction of such stylistic devices as alternating closeups and long shots. Films became longer, and the range of genres expanded considerably from the earlier documentaries. The French filmmaker Georges Méliès, whose uncanny ability for creating imaginary worlds in his films, pioneered the emerging genre of science fiction.

By 1917, a major shift in the film industry had occurred. France had been the world's leading exporter of films prior to World War I, but the destructive effects of the war had decimated the film industry in France. By 1917, the United States had assumed leadership in the motion-picture industry, and the sleepy town of Hollywood, California, which had been used as a winter shooting site for filmmakers from the east coast of the United States as early as 1907, had become the center of the filmmaking industry. D.W. Griffith's film, The Birth of a Nation (1915), was a milestone during this period of both technical advancement in cinematography and inventive narrative technique. Griffith's The Birth of a Nation is considered by many not only to be the motion picture industry's first blockbuster, breaking all previous box office records, but also the first feature-length movie (having a running time of over an hour), and paved the way for the eventual dominance of the feature-length movie in subsequent years.

10.	**Despite the fact that there was no mechanical means of playing back recordings synchronized to movies**
A	early silent movies continued to become more complex
B	compositions performed by pianists or organists became increasingly elaborate
C	narratives became more important than the music that accompanied some silent movies
D	efforts were made to add sound to silent movies by other means

11. **In what way was the Cinématographe an improvement on the Kinetoscope?**

A The Cinématographe weighed less and was therefore more portable.

B The Cinématographe was presented to the general public before the kinetoscope was.

C The Cinématographe allowed a larger audience to view a motion picture at one time.

D The Cinématographe was received more enthusiastically than the Kinetoscope was.

12. **All of the following are characteristics of the transitional period from 1908 to 1917 EXCEPT**

A more expressive acting

B new camera techniques

C a greater number of documentaries about scientific topics

D greater variety of types of movies being made

13. **It can be inferred that the film industry in the United States**

A was not affected by competition with the French film industry before World War I.

B was adversely affected by World War I.

C was not the most internationally dominant film industry before World War I.

D tried to destroy the French film industry during World War I.

Plate Tectonics

The Earth's plates vary considerably in size, as some are estimated to be continental or even hemispheric in size, while others are believed to be much smaller. Though the actual boundaries and sizes and shapes of the plates are not known for sure, it has been postulated that there are six major plates and somewhere around the same number of smaller ones. Most of the plates consist of both sial (continental) and sima (oceanic) crust. They are in continuous movement, though at an extremely slow pace, and this shifting causes frequent interactions between plates.

For the time being, scientists have identified three different types of boundaries between plates. At a divergent boundary, plates are moving away from each other. This type of boundary usually occurs at an underwater mountain range, or mid-ocean ridge, where new material is being added to the seafloor-known as seafloor spreading-from deeper within the Earth. Volcanic islands are the result of this type of plate boundary, as the gap that the diverging plates leave behind can be filled with molten

lava, which rises from the Earth's mantle. Eventually, the lava builds to such an extent that it breaches the surface of the water. Shallow earthquakes and underwater volcanoes are also associated with this type of plate activity.

At a convergent boundary, plates are moving toward each other and collide, causing vast folding and crumpling along the edges of the plates, or in many cases, one of the plates may slowly tuck under the other. In the first kind of convergent boundary, the two plates that crash into each other are both composed of continental, or sial crust. This is where large mountain ranges, such as the Himalayas, form. Other convergent boundaries occur when an oceanic plate collides with either a continental plate or another oceanic plate. In both cases, one crust will be forced under the other (usually it is the oceanic crust that does this). Though this subduction is slow, it can nonetheless be quite catastrophic as the crustal material of the submerging plate gradually melts into the fiery hot depths below. The surrounding crust is usually relatively unstable and is characterized by numerous deep earthquakes and a significant amount of volcanic activity. The boundaries between convergent plates are generally found around the edges of ocean basins and are sometimes associated with deep ocean trenches.

The concept of plate tectonics provides an understanding of the massive rearrangement of the Earth's crust that has apparently taken place. It is now generally accepted that the single supercontinent known as Pangaea indeed existed, that it subsequently broke apart into two giant pieces, Gondwanaland in the south and Laurasia in the north, and that the continents attached to the various crustal plates separated and drifted in various directions. The landmass that is today known as India was originally part of Gondwanaland in the Southern Hemisphere, but it broke off approximately 200 million years ago and drifted north to collide with part of Laurasia, to create the world's tallest mountains.

14.   According to passage, it is certain that the Earth's plates

A   are much smaller than previously believed.

B   are all the size of the hemispheres.

C   have well known boundaries and shapes.

D   often come in contact with one another.

15.   It is implied in the passage that mountain ranges

A   are the result of volcanic islands forming

B   are never found on the ocean floor

C   only form when sial crusts converge

D   can get tucked under a continental plate

16. **What can be inferred about the supercontinent Pangaea?**

A   It collided with the Northern Hemisphere.

B   It eventually split off into many pieces.

C   It ended up in many different places.

D   This theory was not always regarded as true.

17. **All of the following are mentioned about subduction EXCEPT**

A   It is usually the result of an oceanic plate that is forced to submerge.

B   Severe earthquakes and volcanic eruptions are common effects of subduction.

C   It can happen quite abruptly, causing cataclysmic natural disasters.

D   Trenches in the depths of the ocean are sometimes located in subduction zones.

Limners

The earliest known American painters, who were active in the latter part of the seventeenth century and the early part of the eighteenth century, were described in documents, journals, and letters of the time as limners. Most of the paintings created by limners were portraits, and they were unsigned because the finished pieces did not belong to the limners who created them but were instead the possessions of the subjects in the portraits. These works today are named after the subjects portrayed in them, and a particular artist is known only as the creator of a particular portrait; thus a piece is named Mrs. Elizabeth Freake and Baby Mary after the people in the portrait, and the limner who created it is known only as the Freake Limner. Art historians who specialize in art from this era have been able to identify clusters of portraits painted by each of a number of limners but, in many cases, do not know the name of the actual artist.

As can be seen from the fact that portraits created by limners went unsigned, limners were regarded more as artisans or skilled tradesmen than as artists and as such, they earned their living like many did at the time: as itinerant workers moving from town to town offering their services to either those who could pay or, more likely, to those who had goods or services to offer in return. They were able to paint portraits for those desiring to have a tangible representation of a family member for posterity; they also did a variety of other types of painting jobs to stay employed, such as painting the walls of buildings, signs for businesses, and even furniture.

Some of the early portraitists most likely received their education in art or trained as artisans in Europe prior to their arrival in America and then trained others in the new world in their craft; because they were working in undeveloped or minimally developed colonial areas, their lives were quite difficult.   They had little

access to information about the world of art and supplies were limited and difficult to obtain, so they needed to mix their own paints and make their own brushes and stretched canvasses.   They also needed to be prepared to take on whatever painting jobs were needed to survive.

There seem to be two broad categories of painting styles used by the portraitists, the style of the New England limners and the style of the New York limners. The former used a decorative style with flat characters, ones that seemed to lack mass and volume. This is not because the New England limners had no knowledge of painting techniques but was instead because they were using the style of Tudor painting that became popular during the reign of Queen Elizabeth I, a method that included subjects with a two-dimensional woodenness, yet with the numerous highly decorative touches and frills popular in the English court.

The New York limners had a rather different approach from their New England cousins, and this was because New York had a different background from the rest of New England. Much of New England had been colonized by the English, and thus the basis for the style of the New England limners was that which was popular among the English monarchy and nobility. However, the Dutch had settled the colony of New Amsterdam, and though it became an English colony in 1664 and was renamed New York, the Dutch character and influence was strongly in place during the era of the limners. The New York limners, as a result, were influenced by the Dutch artists of the time rather than the Tudor artists. Dutch art, unlike the more flowery Tudor art, was considerably more sober. In addition, the New York limners lacked the flat portrayals of characters like those from the New England variety, and instead made use of light and shade to create more lifelike portraits.

18.   According to the passage, a limner was

A   someone who wrote in many documents

B   someone who was not respected by the elite

C   a portrait artist in the colonial United States

D   an artist who refused to sign a work of art

19.   What is true about the living conditions of limners in America?

A   Limners were forced to paint the underdeveloped colonies where they lived.

B   Because life was hard, their art could not be very good.

C   Working on other jobs to stay alive kept most limners from their art.

D   A severe lack of resources made becoming a successful limner a challenge.

20. **What can be inferred about the way that limners earned their living?**

A   They often did things that were distasteful in order to survive.

B   They worked as artisans and skilled tradesmen rather than as artists.

C   They could only survive by painting portraits of wealthy families.

D   They usually bartered their art in exchange for things they needed to live.

21. **It can be inferred from passage that some limners originally from Europe**

A   would not possibly have had any formal preparation

B   were quite knowledgeable about the world of art

C   were held in high esteem by the population

D   were all formally trained as art instructors

APPENDIX II: Curriculum

Eğitim Fakültesi Yabancı Diller Eğitimi Bölümü İngilizce Öğretmenliği Hazırlık Programı											
2019-2020 Eğitim-Öğretim Yılı Güz Dönemi 1.Öğretim Haftalık Ders Programı											
			Sınıf 1	Derslik	Sınıf 2	Derslik	Sınıf 3	Derslik	Sınıf 4	Derslik	
Gün	No	Saat									
											D-A
Pazartesi	1	08:00-08:50									
Pazartesi	2	09:00-09:50	Grammar (A)-Neslihan Atabey / Listening (B)-Serkan Gürkan	D-9 / TD							
Pazartesi	3	10:00-10:50	Grammar (A)-Neslihan Atabey / Listening (B)-Serkan Gürkan	D-9 / TD							
Pazartesi	4	11:00-11:50	Grammar (A)-Neslihan Atabey / Listening (B)-Serkan Gürkan	D-9 / TD							
Pazartesi	5	12.00-12:50	Grammar (A)-Neslihan Atabey / Listening (B)-Serkan Gürkan	D-9 / TD							
Pazartesi	6	13:00-13:50									
Pazartesi	7	14:00-14:50									
Pazartesi	8	15:00-15:50	Grammar (B)-Mehmet Altay	TD							
Pazartesi	9	16:00-16:50	Grammar (B)-Mehmet Altay	TD							
Salı	1	08:00-08:50									
Salı	2	09:00-09:50	Speaking (A)-Neslihan Atabey	D-9							
Salı	3	10:00-10:50	Speaking (A)-Neslihan Atabey	D-9							
Salı	4	11:00-11:50	Speaking (A)-Neslihan Atabey	D-9							
Salı	5	12.00-12:50	Speaking (A)-Neslihan Atabey	D-9							
Salı	6	13:00-13:50	Listening (A)-Serkan Gürkan / Speaking (B)-Neslihan Atabey	TD / D-9							
Salı	7	14:00-14:50	Listening (A)-Serkan Gürkan / Speaking (B)-Neslihan Atabey	TD / D-9							
Salı	8	15:00-15:50	Reading (A)-Serkan Gürkan / Speaking (B)-Neslihan Atabey	TD / D-9							
Salı	9	16:00-16:50	Reading (A)-Serkan Gürkan / Speaking (B)-Neslihan Atabey	TD / D-9							
Çarşamba	1	08:00-08:50									
Çarşamba	2	09:00-09:50	Reading (A)-Serkan Gürkan	TD							
Çarşamba	3	10:00-10:50	Reading (A)-Serkan Gürkan	TD							
Çarşamba	4	11:00-11:50									
Çarşamba	5	12.00-12:50									
Çarşamba	6	13:00-13:50	/ Writing (B)-Gökçe Bayraktar	/ D-9							
Çarşamba	7	14:00-14:50	/ Writing (B)-Gökçe Bayraktar	/ D-9							
Çarşamba	8	15:00-15:50	Listening (A)-Serkan Gürkan / Writing (B)-Gökçe Bayraktar	TD / D-9							
Çarşamba	9	16:00-16:50	Listening (A)-Serkan Gürkan / Writing (B)-Gökçe Bayraktar	TD / D-9							
Perşembe	1	08:00-08:50									
Perşembe	2	09:00-09:50	Writing (A)-Gökçe Bayraktar	D-9							
Perşembe	3	10:00-10:50	Writing (A)-Gökçe Bayraktar	D-9							
Perşembe	4	11:00-11:50	Writing (A)-Gökçe Bayraktar / Grammar (B)-Mehmet Altay	D-9 / TD							
Perşembe	5	12.00-12:50	Writing (A)-Gökçe Bayraktar / Grammar (B)-Mehmet Altay	D-9 / TD							
Perşembe	6	13:00-13:50	Video (A)-Gökçe Bayraktar / Reading (B)-Serkan Gürkan	TD / D-9							
Perşembe	7	14:00-14:50	Video (A)-Gökçe Bayraktar / Reading (B)-Serkan Gürkan	TD / D-9							
Perşembe	8	15:00-15:50	Video (A)-Gökçe Bayraktar / Reading (B)-Serkan Gürkan	TD / D-9							
Perşembe	9	16:00-16:50	Video (A)-Gökçe Bayraktar / Reading (B)-Serkan Gürkan	TD / D-9							
Cuma	1	08:00-08:50									
Cuma	2	09:00-09:50	/ Video (B)-Gökçe Bayraktar	/ TD							
Cuma	3	10:00-10:50	/ Video (B)-Gökçe Bayraktar	/ TD							
Cuma	4	11:00-11:50	/ Video (B)-Gökçe Bayraktar	/ TD							
Cuma	5	12.00-12:50	/ Video (B)-Gökçe Bayraktar	/ TD							
Cuma	6	13:00-13:50									
Cuma	7	14:00-14:50									
Cuma	8	15:00-15:50									
Cuma	9	16:00-16:50									

Eğitim Fakültesi Yabancı Diller Eğitimi Bölümü İngilizce Öğretmenliği
2019-2020 Eğitim-Öğretim Yılı Güz Dönemi 1.Öğretim Haftalık Ders Programı

Sınıf 1	Derslik	Sınıf 2	Derslik	Sınıf 3	Derslik	Sınıf 4	Derslik
						Özel Eğitim-Ayşe Uysal	D-15
						Özel Eğitim-Ayşe Uysal	D-15
Yazma Becerileri 1(A)-Gökçe Bayraktar	D-6			Sınıf Yönetimi-Soner Polat			
Yazma Becerileri 1(A)-Gökçe Bayraktar	D-6			Sınıf Yönetimi-Soner Polat			
Eğitim Sosyolojisi-Belgin Özaydın	D-15	Dikkat Eksikliği ve Hip. Bozukluğu-Ayşe Uysal	D-16			Yabancı Dil Öğretiminde Materyal İnceleme ve Geliştirme (A)-İrfan Kuran	
Eğitim Sosyolojisi-Belgin Özaydın	D-15	Dikkat Eksikliği ve Hip. Bozukluğu-Ayşe Uysal	D-16	Edebiyat ve Dil Öğretimi (B)-Mehmet Altay	D-10	Yabancı Dil Öğretiminde Materyal İnceleme ve Geliştirme (A)-İrfan Kuran	
				Edebiyat ve Dil Öğretimi (B)-Mehmet Altay	D-10	Yabancı Dil Öğretiminde Materyal İnceleme ve Geliştirme (A)-İrfan Kuran	
Eğitime Giriş-Ufuk Sünbüle	D-15	Dilbilimi 1(A)-Serkan Gürkan	D-8	Edebiyat ve Dil Öğretimi (B)-Mehmet Altay	D-10		
Eğitime Giriş-Ufuk Sünbüle	D-15	Dilbilimi 1(A)-Serkan Gürkan / Eleştirel Okuma ve Yazma (B)-İrfan Kuran	D-8 / D-6				
		/ Eleştirel Okuma ve Yazma (B)-İrfan Kuran	/ D-6			Okul Deneyimi (D)-Serkan Gürkan / Okul Deneyimi (D)-İrfan Kuran	
Bilişim Teknolojileri-Evren Şumuer	BLAB-1			/ Özel Öğretim Yöntemleri 2-Doğan Yüksel	/ D-13	/ Yabancı Dil Öğretiminde Materyal İnceleme ve Geliştirme (B)-İrfan Kuran	
Bilişim Teknolojileri-Evren Şumuer	BLAB-1	/ İngilizce Öğrenme ve Öğretim Yaklaşımları (B)-Mehmet Altay	/ D-10	/ Özel Öğretim Yöntemleri 2-Doğan Yüksel	/ D-13	/ Yabancı Dil Öğretiminde Materyal İnceleme ve Geliştirme (B)-İrfan Kuran	
Bilişim Teknolojileri-Evren Şumuer	BLAB-1	/ İngilizce Öğrenme ve Öğretim Yaklaşımları (B)-Mehmet Altay	/ D-10	/ Özel Öğretim Yöntemleri 2-Doğan Yüksel	/ D-13	/ Yabancı Dil Öğretiminde Materyal İnceleme ve Geliştirme (B)-İrfan Kuran	
				/ Özel Öğretim Yöntemleri 2-Doğan Yüksel	/ D-13		
		İngiliz Edebiyatı 1(A)-İrfan Kuran	D-8	Edebiyat ve Dil Öğretimi 1(A)-Mehmet Altay	D-6	İngilizce Öğretiminde Sinemanın Kullanımı-Belgin Özaydın	
Türk Dili 1-Şua Kolçak	D-15	İngiliz Edebiyatı 1(A)-İrfan Kuran	D-8	Edebiyat ve Dil Öğretimi 1(A)-Mehmet Altay / Dil Becerilerinin Öğretimi 1(B)-Doğan Yüksel	D-6 / D-10	İngilizce Öğretiminde Sinemanın Kullanımı-Belgin Özaydın	
Türk Dili 1-Şua Kolçak	D-15	Öğretim İlke ve Yöntemleri-Belgin Özaydın	D-15	Edebiyat ve Dil Öğretimi 1(A)-Mehmet Altay / Dil Becerilerinin Öğretimi 1(B)-Doğan Yüksel	D-6 / D-10	Karşılaştırmalı Ses,Biçim,Tümce ve Ant. Bilgisi-Serkan Gürkan	
Türk Dili 1-Şua Kolçak	D-15	Öğretim İlke ve Yöntemleri-Belgin Özaydın	D-15			Karşılaştırmalı Ses,Biçim,Tümce ve Ant. Bilgisi-Serkan Gürkan	
						Okul Deneyimi (A)-Gökçe Bayraktar / Okul Deneyimi (B)-Neslihan Atalay	
Okuma Becerileri 1 (A)-Gökçe Bayraktar / Dinleme ve Sesletim 1 (B)-İrfan Kuran	D-10 / D-8			Çocuklara Yabancı Dil Öğretimi 1(A)-Neslihan Atalay / Dil Becerilerinin Öğretimi 1(B)-Doğan Yüksel	D-5 / D-6		
Okuma Becerileri 1 (A)-Gökçe Bayraktar / Dinleme ve Sesletim 1 (B)-İrfan Kuran	D-10 / D-8			Çocuklara Yabancı Dil Öğretimi 1(A)-Neslihan Atalay / Dil Becerilerinin Öğretimi 1(B)-Doğan Yüksel	D-5 / D-6		
/ Yazma Becerileri (B)-Gökçe Bayraktar	D-10	Eleştirel Okuma ve Yazma (A)-İrfan Kuran	D-6			/ Atatürk İlkeleri ve İnkılap Tarihi 1-Gülten M. Sofuoğlu	
/ Yazma Becerileri (B)-Gökçe Bayraktar	D-10	Eleştirel Okuma ve Yazma (A)-İrfan Kuran	D-6			/ Atatürk İlkeleri ve İnkılap Tarihi 1-Gülten M. Sofuoğlu	
Dinleme ve Sesletim 1(A)-İrfan Kuran	D-6	/ Dilbilimi 1(B)-Serkan Gürkan	/ D-10	Dil Becerilerinin Öğretimi 1(A)-Doğan Yüksel / Çocuklara Yabancı Dil Öğretimi 1(B)-Neslihan Atalay	D-6 / D-5		
Dinleme ve Sesletim 1(A)-İrfan Kuran	D-6	/ Dilbilimi 1(B)-Serkan Gürkan	/ D-10	Dil Becerilerinin Öğretimi 1(A)-Doğan Yüksel / Çocuklara Yabancı Dil Öğretimi 1(B)-Neslihan Atalay	D-6 / D-5		
Atatürk İlkeleri ve İnkılap Tarihi 1-Gülten M. Sofuoğlu	D-15			Dil Becerilerinin Öğretimi 1(A)-Doğan Yüksel / Çocuklara Yabancı Dil Öğretimi 1(B)-Neslihan Atalay	D-6 / D-5		
Atatürk İlkeleri ve İnkılap Tarihi 1-Gülten M. Sofuoğlu	D-15			Dil Becerilerinin Öğretimi 1(A)-Doğan Yüksel / Çocuklara Yabancı Dil Öğretimi 1(B)-Neslihan Atalay	D-6 / D-5		
				/ Drama (B)-Feviziye Dolunay Cuğ	/ D-5	Okul Deneyimi-F.Gökçe Bayraktar	
		İnsan Hakları ve Demokrasi Eğitim-Gülcan Yılmaz / Türk İşaret Dili-Late Demirbilek	D-10 / D-5	İngilizce Öğretmenliğinde Öğretmen Eğitimi-Serkan Gürkan / Görev Temelli Dil Öğretimi-Mehmet Altay	D-6 / D-8	Rehberlik-Feviziye Dolunay Cuğ	
		İnsan Hakları ve Demokrasi Eğitim-Gülcan Yılmaz / Türk İşaret Dili-Late Demirbilek	D-10 / D-5	İngilizce Öğretmenliğinde Öğretmen Eğitimi-Serkan Gürkan / Görev Temelli Dil Öğretimi-Mehmet Altay	D-6 / D-8	Rehberlik-Feviziye Dolunay Cuğ	
		Sosyopolitizim ve Dil Öğretimi-Serkan Gürkan / Dünya İngilizceleri ve Kültür-İrfan Kuran	D-6 / D-5			Rehberlik-Feviziye Dolunay Cuğ	
Yabancı Dil 1(Almanca)-Hidayet Oskan / Yabancı Dil 1(Fransızca)-Permin Maşçok	D-4 / D-10	Sosyopolitizim ve Dil Öğretimi-Serkan Gürkan / Dünya İngilizceleri ve Kültür-İrfan Kuran	D-6 / D-5				
Yabancı Dil 1(Almanca)-Hidayet Oskan / Yabancı Dil 1(Fransızca)-Permin Maşçok	D-4 / D-10	/ İngiliz Edebiyatı 1(B)-İrfan Kuran	/ D-6	Çocuklara Yabancı Dil Öğretimi 1(A)-Neslihan Atalay	D-5	Yabancı Dil 1(Almanca)-Hidayet Oskan / Yabancı Dil 1(Fransızca)-Permin Maşçok	
		/ İngiliz Edebiyatı 1(B)-İrfan Kuran	/ D-6	Çocuklara Yabancı Dil Öğretimi 1(A)-Neslihan Atalay	D-5	Yabancı Dil 1(Almanca)-Hidayet Oskan / Yabancı Dil 1(Fransızca)-Permin Maşçok	
				Yabancı Dil 1(Almanca)-Hidayet Oskan / Yabancı Dil 1(Fransızca)-Permin Maşçok	D-6 / D-8		
				Yabancı Dil 1(Almanca)-Hidayet Oskan / Yabancı Dil 1(Fransızca)-Permin Maşçok	D-6 / D-8		
Sözlü İletişim Becerileri 1(A)-Çağhayan Erdönmez	D-5			Drama (A)-Feviziye Dolunay Cuğ	OI		
Sözlü İletişim Becerileri 1(A)-Çağhayan Erdönmez	D-5			Drama (A)-Feviziye Dolunay Cuğ	OI		
/ Sözlü İletişim Becerileri 1(B)-Çağhayan Erdönmez	D-5	Öğretim Teknolojileri-Evren Şumuer	D-15	/ Drama (A)-Feviziye Dolunay Cuğ	/ OI		
/ Sözlü İletişim Becerileri 1(B)-Çağhayan Erdönmez	D-5	Öğretim Teknolojileri-Evren Şumuer	D-15	/ Drama (B)-Feviziye Dolunay Cuğ	/ OI		
/ Okuma Becerileri 1-Gökçe Bayraktar	D-10	İngilizce Öğrenme ve Öğretim Yaklaşımları (A)-Mehmet Altay	D-8	Drama (B)-Feviziye Dolunay Cuğ	D-6		
/ Okuma Becerileri 1-Gökçe Bayraktar	D-10	İngilizce Öğrenme ve Öğretim Yaklaşımları (A)-Mehmet Altay	D-8	Drama (B)-Feviziye Dolunay Cuğ	D-6		

APPENDIX III: Application of CDA (photographs)

CURRICULUM VITAE

Personal Information

Name Surname:	Ayça ÜNAL
Date of Place and Birth:	▮
Language(s):	English, Spanish (B1)
Phone/ e-mail:	▮

Educational Background (Institution and Year)

High-School:	Akyazı Anatolian Teacher Training High School (2009-2013)
Bachelor's Degree:	Dokuz Eylül University (2013-2017)
Master's Degree:	Kocaeli University (2018-2020)

Publications:

Unal, A. & Bural, E. (2018). Eye-tracking as a measure of analysis in classroom discourse. In Yüksel, B., Avcı, Y., & Küçük, S. (Eds.), Proceedings of International Language Education and Teaching Symposium IV (97). Valahia University Press.

Unal, A. (2020, December 4-5). *Washback effects of KPSS exam on academics*. IMASCON 2020: Kocaeli, Turkey.