



T.C.

UFUK UNIVERSITY

GRADUATE SCHOOL OF SOCIAL SCIENCES

DEPARTMENT OF FOREIGN LANGUAGE EDUCATION

DIVISION OF ENGLISH LANGUAGE TEACHING

**RECOGNITION OF [æ] AND [ɛ] VOWELS OF ENGLISH BY TRANSLATION
AND LITERATURE STUDENTS**

MASTER'S THESIS

KEMAL TRKAY

SUPERVISOR

PROF. DR. MEHMET DEMİREZEN

ANKARA

2020

T.C.
UFUK UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
DEPARTMENT OF FOREIGN LANGUAGE EDUCATION
DIVISION OF ENGLISH LANGUAGE TEACHING

**RECOGNITION OF [æ] AND [ɛ] VOWELS OF ENGLISH BY TRANSLATION
AND LITERATURE STUDENTS**

MASTER'S THESIS

KEMAL TÜRKAY

SUPERVISOR
PROF. DR. MEHMET DEMİREZEN

ANKARA
2020

BİLDİRİM

Hazırladığım tezin tamamen kendi çalışmam olduğunu ve her alıntıya kaynak gösterdiğimi taahhüt eder, tezimin kâğıt ve elektronik kopyalarının Ufuk Üniversitesi Sosyal Bilimler Enstitüsü arşivlerinde aşağıda belirttiğim koşullarda saklanmasına izin verdiğimi onaylarım:

- Tezimin tamamı her yerden erişime açılabilir.
- Tezim sadece Ufuk Üniversitesi yerleşkelerinden erişime açılabilir.

05.06.2020

K. Türkay

[Tarih ve İmza]

Kemal TÜRKAY



*To my nephew Cihan and my niece Zeynep,
I thank them for making me feel so great to be their uncle!*

ACKNOWLEDGEMENTS

To begin with, I would like to thank my supervisor Prof. Dr. Mehmet Demirezen for guiding me well throughout my study from selecting the title to finding the results. His immense knowledge in various study areas, humanitarian support and belief in me have made my spirit more motivated and helped me move forward with my research.

I would also like to thank the members of the examining committee, Asst. Prof. Dr. Mustafa KIRCA and Asst. Prof. Dr. Ceyhun KARABIYIK for taking part in my jury and for their precious constructive feedback they have provided me with.

In addition, I would like to express my very special appreciation to the students, who voluntarily participated in the study and allocated their valuable time during my data collection.

Eventually, I owe my greatest debt and deepest gratitude to Prof. Dr. Nalan BÜYÜKKANTARCIOĞLU for her valuable suggestions on my questionnaire development process and one more time Asst. Prof. Mustafa Kırca for his great contributions during my treatment session and data collection.

ABSTRACT

TÜRKAY, Kemal. Recognition of [æ] and [ɛ] Vowels of English by Translation and Literature Students, Master's Thesis, Ankara, [2020]

The present research was carried out to investigate the recognition of [æ] and [ɛ] vowels of English by Translation and Literature students at a foundation university in Turkey, consisting of freshmen and senior students. Only two of the North American English vowels are the main concern of this study. They are [æ] and [ɛ]. Additionally, the main objective of this study is to reveal if non-native EFL students are adequately conscious of these two vowels in the recognition tests, and if not, whether they are treatable or not. 57 non-native EFL learners took part in the research with their different backgrounds. All undergraduate students, from 1st grade to the 4th, voluntarily participated as testees. A 40-question test was given to collect data as the instrument. A pre-test and a post-test, and a treatment session between them were implemented on the target audience. The numerical data gotten from the tests were analyzed with SPSS.25 program. The findings indicated that the students from the Departments of English Language and Literature and Translation and Interpreting Studies (English) gained awareness on the recognition of these two vowels. The most difficult part of the recognition test was the one asking the participants to find the option with two occurrences of [ɛ] sound. The second most difficult was the part testing the recognition of one occurrence of [ɛ] sound. As for the recognition of [æ] sound, the participants relatively did better. Similar to the part including [ɛ] sound, for the [æ] sound, one occurrence of it was easier to recognize for the participants.

Keywords: English Vowels, recognition, pronunciation, monophthongs, phonemes, North American English, GA, fossilization, neutralization, audio-articulation method

ÖZ

TÜRKAY, Kemal. İngilizce'deki [æ] ve [ɛ] Seslerinin Tercümanlık ve Edebiyat Öğrencilerince Algılanması, Yüksek Lisans Tezi, Ankara, [2020]

Bu çalışma Türkiye'de bir vakıf üniversitesinde lisans düzeyinde öğrenim gören Mütercim Tercümanlık (İngilizce) ve İngiliz Dili ve Edebiyatı Bölümü öğrencilerinin İngilizce'deki [æ] ve [ɛ] seslerini algılamadaki başarılarını incelemek amacıyla yapılmıştır. Sadece [æ] ve [ɛ] Kuzey Amerikan Sesleri değerlendirmeye alınacaktır. Bu çalışmanın bir başka amacı da İngilizce'yi bir yabancı dil olarak öğrenen öğrencilerin bu iki ses hakkında yeterli derecede farkındalıklarının olup olmadığını ve eğer yoksa bir farkındalık kazandırmanın mümkün olup olmayacağını ortaya çıkarmaktır. Bu çalışmaya farklı eğitim geçmişlerine sahip 57 kişi katılmıştır. Gönüllü olarak katılım sağlayan bu öğrencilerin sınıfları lisans düzeyinde olup 1. sınıf ile 4. Sınıf arasında değişmektedir. Veri toplama aracı olarak katılımcılara 40 sorudan oluşan bir test verilmiştir. Hedef kitleye öntest ve sontest verilmiş olup bu ikisi arasında bir de kısa eğitim verilmiştir. Elde edilen sayısal veri SPSS 25 programında analiz edilmiştir. Elde edilen bulgular İngiliz Dili Edebiyatı ve Mütercim Tercümanlık (İngilizce) Bölümü öğrencilerinin bu iki sesi algılamaları üzerine bir farkındalık kazandığını göstermiştir. Katılımcıların testte en çok zorlandıkları bölüm [ɛ] sesinin iki adet bulunduğu sorulardan oluşan kısım olmuştur. Bunun ardından bir adet [ɛ] sesinin algılanmasını ölçen kısım da ikinci en çok zorlandıkları kısım olmuştur. [æ] sesini algılamada ise katılımcılar nispeten daha başarılı olmuşlardır. Aynı [ɛ] sesinin bulunduğu kısımda olduğu gibi, [æ] sesinin bir adet bulunduğu kısımda katılımcılar daha az zorlanmışlardır.

Anahtar sözcükler: İngiliz seslileri, algılama, telaffuz, tek ünlü hece, sesbirim, Kuzey American İngilizcesi, Genel Amerikan İngilizcesi, fosilleşme, nötrleşme, işitsel-sesletim yöntemi

TABLE OF CONTENTS

KABUL VE ONAY.....	II
BİLDİRİM.....	III
ACKNOWLEDGEMENTS.....	V
ABSTRACT.....	VI
ÖZ.....	VII
TABLE OF CONTENTS.....	VIII
ABBREVIATIONS.....	XII
LIST OF TABLES.....	XIII
LIST OF FIGURES.....	XV
CHAPTER 1	
INTRODUCTION.....	1
1.1. Introduction.....	1
1.2. Purpose of the Study.....	3
1.3. Research Questions.....	6
1.4. Significance of the Study.....	7
1.5. Definition of Terms.....	8
1.6. An Evaluation of the Chapter.....	9
CHAPTER 2	
LITERATURE REVIEW.....	10
2.1. An Overview of the Chapter.....	10
2.2. An Analysis of [æ] and [ɛ] Vowel Sounds of English.....	10
2.2.1. Phonetics.....	18
2.2.1.1. International Phonetic Alphabet.....	20
2.2.2. North American English (NAE) Vowels.....	21
2.2.3. Turkish Vowel System.....	24

2.2.4. A Comparison of American English Vowels and Turkish Vowels.....	26
2.3. Teaching Pronunciation.....	27
2.3.1. The Significance of Explicit Teaching of Pronunciation.....	28
2.3.2. Factors Affecting Pronunciation Learning.....	30
2.3.2.1. Types of Phonetic Errors in English.....	32
2.3.2.2. Sources of Pronunciation Errors.....	32
2.3.3. Rehabilitation of Fossilized Pronunciation Errors.....	33
2.3.3.1. Fossilization.....	34
2.3.3.2. Rehabilitation Models for the Defossilization of Pronunciation Errors.....	35
2.3.3.2.1. Audio-Articulation Method.....	36
2.3.4. An Evaluation of the Chapter.....	37

CHAPTER 3

METHODOLOGY.....	38
3.1. An Overview of the Chapter.....	38
3.2. Setting.....	38
3.3. Participants.....	39
3.4. Instruments.....	43
3.4.1. The Recognition Test.....	43
3.5. Training with Audio-Articulation Method.....	46
3.6. Data Collection Procedure.....	50
3.7. Data Analysis.....	52
3.8. The Evaluation of the Chapter.....	52

CHAPTER 4

RESULTS AND DISCUSSION.....	53
4.1. An Overview of the Chapter.....	53
4.2. Internal Consistency of the Instrument (KR20).....	53
4.3. Research Question 1: Is There a Meaningful Difference between the Pre-test and the Post-test Results?.....	54

4.4. Research Question 2: What is the Success Percentage of Overall Perception of [æ] and [ɛ] Sounds?.....	55
4.5. Research Question 3: What is the Rate of Success in the Single Perception of the [æ] Sound?.....	56
4.6. Research Question 4: What is the Rate of Success in the Perception of the Two [æ] Sounds?.....	60
4.7. Research Question 5: What is the Rate of Success in the Single Perception of the [ɛ] Sound?.....	62
4.8. Research Question 6: What is the Rate of Success in the Perception of the Two [ɛ] Sounds?.....	65
4.9. Research Question 7: Do the Participants Need a Further Treatment?.....	67
4.10. Research Question 8: What is the General Success of Literature Students & Translation Students?.....	69
4.11. An Evaluation of the Chapter.....	70

CHAPTER 5

CONCLUSION.....	71
5.1. An Evaluation of the Chapter.....	71
5.2. The Summary of the Study.....	71
5.3. The Implications and Suggestions for Future Studies.....	77
5.4. Pedagogical Implications.....	78
5.5. Limitations of the Study.....	80
5.6. An Evaluation of the Chapter.....	81
REFERENCES.....	82
APPENDICES.....	95
APPENDIX-A: Consent Form.....	95
APPENDIX-B: Demographic Questionnaire.....	96
APPENDIX-C: The Recognition Test of [æ] and [ɛ] Vowel Sounds of English...	98

APPENDIX-D: Power Point Slide Sample Used in the Training: Application of the Audio-Articulation Method.....	101
APPENDIX-E: Özgeçmiş.....	117
APPENDIX-F: Etik Kurul İzni.....	118



ABBREVIATIONS

AAM: Audio-Articulation Method

EFL: English as a Foreign Language

ELL: English Language and Literature

ELT: English Language Teaching

ESL: English as A Second Language

GA: General American

IPA: International Phonetic Alphabet

KR-20: Kuder and Richardson Test - 20

L1: First Language

L2: Second Language

MONE: Ministry of National Education

NAE: North American English

SLA: Second Language Acquisition

SLM: Speech Learning Method

PE: Pre-test

PO: Post-test

SPSS: Statistical Package for the Social Sciences

TAP: Test Analysis Program

TETs: Turkish English Teachers

TINS: Translation and Interpreting Studies

LIST OF TABLES

Table 1. Research Questions and Instruments.....	6
Table 2. Distribution of English Vowels Mispronounced by the Participants with Percentages	16
Table 3. Count and Rate of the Incorrect Pronunciation of Words	17
Table 4. Corpus Items of the Recognition Test with Their Frequencies.....	45
Table 5. The List of Minimal Pairs Prepared for the Treatment Session.....	48
Table 6. The Procedure of Collecting Data.....	50
Table 7. KR20 Values of the Written Pre-test Scores.....	53
Table 8. KR20 Values of the Written Post-test Scores.....	54
Table 9. Paired Samples T-Test for Pre-Test and Post-Test Scores.....	54
Table 10. Success Level Scores for the Recognition Tests.....	55
Table 11. The Overall Pre-test and Post-test Scores of the Participants.....	55
Table 12. The Descriptive Statistics of the Correct Answers for the Questions between 1 and 10 in the Pre-test and the Post-test.....	58
Table 13. TAP Results for the Questions 1-10.....	59
Table 14. The Descriptive Statistics of the Correct Answers for the Questions between 11 and 20 in the Pre-test and the Post-test.....	61
Table 15. TAP Results for the Questions 11-20.....	61
Table 16. The Descriptive Statistics of the Correct Answers for the Questions between 21 and 30 in the Pre-test and the Post-test.....	63
Table 17. TAP Results for the Questions 21-30.....	64

Table 18. The Descriptive Statistics of the Correct Answers for the Questions between 31 and 40 in the Pre-test and the Post-test.....	66
Table 19. TAP Results for the Questions 31-40.....	66
Table 20. Descriptive Statistics for the Sections as Individual and Overall.....	68
Table 21. Group Statistics in terms of Departments.....	69
Table 22. Independent Samples Test: Levene's Test for Equality of Variances...	69



LIST OF FIGURES

Figure 1: Model of Learners' Acquisition of L2 Sounds.....	14
Figure 2: The Cardinal Vowel System.....	19
Figure 3: IPA Phonemic Figure for English Vowels.....	21
Figure 4: The Contrastive Positioning of [æ] and [ɛ] Sounds.....	23
Figure 5: The Contrastive Positioning of [ɛ] and [ɪ] Sounds.....	23
Figure 6: The Contrastive Positioning of [æ] and [ʌ] Sounds.....	23
Figure 7: The Contrastive Positioning of [æ] and [ɑ] Sounds.....	24
Figure 8: Vowels of Turkish.....	25
Figure 9: Gender Distribution of the Participants.....	39
Figure 10: The Years of Birth of the Participants.....	39
Figure 11: The Categorization of the Participants in terms of Their Departments...	40
Figure 12: The Years of University Education Experience of the Participants....	40
Figure 13: The Percentage of the Participants Having Taken a Course Teaching Pronunciation Before.....	41
Figure 14: The Frequency of Participants' Cheching the Correct Pronunciation of the New Vocabulary Items in the Dictionary.....	41
Figure 15: The Perception of the Participants on the Importance of the Correct Pronunciation of Words During a Conversation.....	42
Figure 16: The Participants' Self-Perceptions on Their Pronunciation Skills.....	42
Figure 17: The Percentage of the Participants' IPA Literacy.....	43
Figure 18: Minimal Pair Samples with Visuals from the Treatment PPT.....	48
Figure 19: The Frequency of the Correct Answers for the Questions between 1 and 10 in the Pre-test.....	57

Figure 20: The Frequency of the Correct Answers for the Questions between 1 and 10 in the Post-test.....	57
Figure 21: The Frequency of the Correct Answers for the Questions between 11 and 20 in the Pre-test.....	60
Figure 22: The Frequency of the Correct Answers for the Questions between 11 and 20 in the Post-test.....	60
Figure 23: The Frequency of the Correct Answers for the Questions between 21 and 30 in the Pre-test.....	62
Figure 24: The Frequency of the Correct Answers for the Questions between 21 and 30 in the Post-test.....	63
Figure 25: The Frequency of the Correct Answers for the Questions between 31 and 40 in the Pre-test.....	65
Figure 26: The Frequency of the Correct Answers for the Questions between 31 and 40 in the Post-test.....	65

CHAPTER 1

INTRODUCTION

1.1. Introduction

This research primarily aims at revealing the level of recognition of [æ] and [ɛ] vowels of North American English, in the written form, by the non-native students of Translation and Interpreting Studies and English Language and Literature Departments at a foundation university in Turkey. The main focus of the study is to illuminate the students' written perceptions on these two distinct sounds and whether that recognition level can be increased by some theoretical teaching of these sounds and providing them with well-designed practices to increase their awareness on the phonemes under question.

To diagnose the rate of recognition of the target audience, the questionnaire designed and developed by the author of this thesis will be utilized, and for the treatment sessions, Demirezen's audio-articulation method (2005) will be implemented. Since these two sounds may differ in other dialects of English, only North American English has been taken into consideration throughout the study to prevent any confusion that might possibly occur.

In this context, answers and explanations will be sought on teaching pronunciation, dealing with the fossilization, the reasons behind the pronunciation errors of the foreign language learners and the methods and techniques to handle those pronunciation errors of non-native EFL learners. Regarding the main difficulties that Turkish EFL learners face in their speeches, [æ] and [ɛ] sounds are taken under investigation. The reason behind choosing these two vowels is due to their special cases for Turkish EFL learners. In Turkish vowel system, these two vowels are non-existent and both are perceived as [e] sound which is the most similar one; therefore, they have much more difficulty in uttering these two vowels. This is called 'neutralization' problem in linguistics (Butcher, 1995, p.10; Berger, 2015, p.256; Demirezen, 2006, p.162).

Various studies have been conducted to hunt the errors of EFL learners so far on the students of English Language Teaching Department both in undergraduate and graduate level, and even with the EFL teachers; nonetheless, no

studies have been conducted on the students of the Faculty of Arts and Sciences such as the ones like Literature and Translation. One can primarily consider only the students majoring in English Language Teaching are to be teachers in the future, yet translation and literature graduates also become EFL teachers, and their number may even exceed the number of ELT graduates in some of the universities in Turkey. English language is not just a tool for translation and literature students; it is the core of their professions, so they should be more knowledgeable at this point.

In the spring term of 2005-2006 academic year, Demirezen conducted a research on diagnosing the pronunciation problems coming along with [æ] and [ɛ] sounds on the graduate students of him by using the diagnostic test made by Baker (1993, p.134) and found out that the majority of English Language Teaching M. A. students from both state and foundation universities have extreme difficulty in perceiving [æ] and [ɛ] sound. The majority of them receive these two sounds as [e] sound in Turkish.

Being proficient in pronunciation is not only a concern for teachers, but it is also vital for Literature and Translation students. They should utter accurate and intelligible speech while communicating (Akyol, 2012, p.1457). For Kentworthy (1987, p.13), if one is understood in a limited time for communication, then it means that s/he can convey, get the message clearly and have a comprehensible pronunciation. Correct pronunciation for specific sounds like vowels is the cornerstone of an intelligible communication.

Besides, these learners may not be aware of this problem until they get explicitly exposed to the situation. This problem is so complicated for them that they even do not understand where they are making mistakes, which constantly interrupt their fluency, or why they have poor communication skills. Some learners of the language are aware of the problem, but they are unwilling to rehabilitate it. Or maybe they are not sure if they can or how and where to start with. These learners apparently need guidance.

Phonemes in a language are very similar to stars in the universe. All of them look separate from each other as individuals yet somehow bound up with each other. To illustrate, when a star dies or when a supernova explodes, from the nearest to

the furthest, all starts are affected respectively. That's why dealing with pronunciation of a foreign language is not an easy task to handle. There are some specific rules on the relations between the phonemes on what is going to happen when they precede or follow after, but they are not always regular. In the application of these rules, we tend to see exceptions smashing this order.

Many scholars agree on the idea that pronunciation errors strictly impede the learners from uttering intelligible discourse, yet little has been done to tackle with this phenomenon. This might widely be due to Selinker's assertions. He puts forward that once language learners have passed the critical period, their pronunciation becomes inevitably fossilized (Selinker, 1972, p.210). The common belief in this idea might have prevented a great deal of academics of linguistics or the teachers from paying the attention to pronunciation that it deserves. The assertion that adult learners will have difficulty in having a native-like pronunciation does not mean that rehabilitating it is impossible. Although not many methods have verified to defossilize the pronunciation errors, the audio-articulation method of Demirezen has displayed some affirmative results indicating that the fossilized pronunciation errors can be cured via implementing this model effectively.

In this study, the author has attempted to explore the recognition level of [æ] and [ɛ] vowels of English by Turkish students of Translation and Literature Departments and also whether those participants are aware of these North American [æ] and [ɛ] sounds, and if they are not, whether this problem can be remedied by some training sessions. The written perception of the participants on [æ] and [ɛ] sounds is the subject-matter of this thesis. The difference between the pre-test and the post-test results will enlighten us, and hopefully the participants will have a much better recognition level of these two sounds in the end.

1.2. Purpose of the Study

It is obvious that pronunciation teaching is the orphan child of EFL curricula in Turkey. Its place in MONE currently lacks a real parental care. Only a few institutions in Turkey design teaching programs in their syllabi and implement them in their language classes. Learning a new vocabulary item comes along with

learning its meaning first, and then its collocations, contextual boundaries, alternative word formations and finally its pronunciation. If the learner knows its meaning, then s/he can understand a reading text. If s/he can spell it right, then s/he can use it in the written assignments, but if s/he does not know its pronunciation, then s/he cannot comprehend what s/he listens to or cannot utter that new vocabulary item in a conversation sufficiently. This might be one of the answers for one of the most popular problems among Turkish language learners, which is “Teacher, I can understand, but cannot speak”.

Among all the preparatory schools of Turkish universities, only a few of them evaluate the learners’ speaking competency in their proficiency exams. Even some of the most qualified universities in Turkey unfortunately lack the speaking section in their testing system. This leads to a multi-dimensional problem. Demircioğlu (2013, p.2985) asserts “the number of Turkish English teachers who are willing to teach pronunciation and articulation is decreasing day by day because of the lack of motivation in students.” This might be one reason. The learners do not have adequate motivation to study pronunciation. But why do they not have this motivation? And can this condition be a plausible reason for teachers’ lack of motivation?

Turkish learners who study or live abroad in Europe generally observe and experience the fact that in comparison with the other European countries’ citizens, they have critical pronunciation mistakes which impede them from having intelligible communication. They constantly face the situation of repeating their utterances since they are not comprehensible in the first attempt like “do you mean ‘love’ or ‘low’ or ‘law’?” These may pave the way for huge misunderstandings. They even prevent them from socializing with their colleagues or classmates due to continuous interruptions during the communication. Nonetheless, without this experience, the learners staying in Turkey generally cannot be aware of this situation. Perhaps that is why they neglect the significance of pronunciation. Or maybe they have not been introduced to any studies on beautifying their pronunciation skills before.

Most of the EFL learners are not aware of IPA (International Phonetic Alphabet). In order to learn the pronunciation of a new word from a text, the learner must check its IPA transcription in the dictionary. Without knowing how to read IPA, improving one's pronunciation ability does not seem very possible unless they get exposed to native conversation. In linguistics departments and some of the ELT departments, there are both compulsory and voluntary phonology or phonetics courses where the learners can learn IPA and be aware of the target language's pronunciation system. And in the academic literature, we can see that there are many researches conducted indicating this situation. Nevertheless, these classes including pronunciation teaching are not quite available in English Language and Literature and Translation and Interpreting Studies (English) Departments.

Generally, the studies are done with the teacher candidates and there is such a presumption that only ELT students are the candidates to be English teachers. However, among the language instructors working at universities, the number of these two departments' graduates can exceed the number of the ones who graduated from ELT departments. And these students are certified to be English Language teachers or instructors through getting an educational formation from education faculties yet without getting a proper pronunciation education.

The primary purpose of this study is to raise an awareness of those students of Translation and Interpreting Studies (English) and English Language and Literature Departments on English vowels, specifically [æ] and [ɛ] sounds because they change meaning. Learners have difficulty in recognizing the difference between these vowels, so they pronounce both of them as [e] sound in Turkish. This situation can sometimes lead to a change in the meaning of the word completely. A lot of misunderstandings occur due to this wrongly articulated or perceived sounds during conversations. For these learners, "Mary", "merry", and "marry" can be perceived as the same, yet their meanings are not alike at all. In this study, the recognition level of the learners for each of these two sounds will be found out therefore.

The last purpose of the study is to see whether the low recognition of these sounds can be cured by some well-planned treatment sessions. Although many

scholars advocate the idea that the pronunciation mistakes of the learners become fossilized errors which cannot be helped after a certain age, the author of this paper believes in the idea that no matter what the age of the learner is, if they are exposed to some well-designed treatment sessions, they all can improve their pronunciation skills to some extent with a trustable guidance and long-lasting practices.

1.3. Research Questions

The following research questions will be addressed in this research:

Table 1

Research Questions and Instruments

1. Is there a meaningful difference between the pre-test and post-test results?	Pre-test & post-test
2. What is the success percentage of overall perception of [æ] and [ɛ] sounds?	Pre-test & post-test
3. What is the rate of success in the single perception of the [æ] sound?	Pre-test & post-test
4. What is the rate of success in the perception of the two [æ] sounds?	Pre-test & post-test
5. What is the rate of success in the single perception of the [ɛ] sound?	Pre-test & post-test
6. What is the rate of success in the perception of the two [ɛ] sounds?	Pre-test & post-test
7. Do the participants need a further treatment?	Pre-test & post-test
8. What is the general success of literature students and translation students?	Pre-test & post-test

1.4. Significance of the Study

The most notable significance of this study is its providing a clear picture of the awareness and knowledge level of the target audience and to improve them, if it is possible at all. A study like this has been implemented on ELT learners or teachers in Turkish MONE (Ministry of Turkish Education), yet it has never been done on this group of learners in Turkey, and the results of this study will shed a light on the current problematic situation and perhaps will be a sample model for all the state and foundation universities in the country. Only two phonemes are taken into consideration in this study, but they must be considered as samples for other studies that can be done on other sounds such as long vowels, diphthongs, or consonants.

Pennington (1994, p.105) puts forward that teachers tend to view pronunciation as a component of linguistics rather than a necessity for fluency. Many instructors share this idea in the other philology departments in Turkey. There is almost no deliberate teaching of these sounds in the target departments. The instructors expect the learners to figure out the pronunciation patterns of the sounds throughout the learning process unconsciously or subconsciously. The pronunciation teaching is generally performed at the beginning of the reading classes. The instructors make the learners read the text aloud and correct the mispronunciations randomly without any specific planning. In speaking classes these days, the fluency is regarded as more significant than the accuracy, so when learners make a mistake, they are most of the time not corrected instantly since instructors think that it will break the fluency and make the learner less motivated to continue. What happens eventually after the speech is that those occurrences of mispronunciation are forgotten and gone uncorrected.

The instructors' feedbacks on pronunciation during the speaking performances is crucial; however, since both the teacher and the learner are not native speakers of English and share the same mother tongue, they can somehow understand each other; and therefore, having native-like pronunciation is neglected most of the time. As a result of this situation, the pronunciation problems become ghosts. They are always there but mostly invisible for the learners. Most of the learners are not even aware of the existence of a sound such as [æ] in North

American English. They sense the existence of a problem but cannot identify it since they have not been introduced to this sound deliberately before. Since this [æ] sound is not available in Turkish learners' inventory, they neutralize it to the [e] sound of Turkish language, which is the most similar sound in their mother tongue to it.

1.5. Definition of Terms

The following terms will be utilized in this study.

Ash: The near-open front unrounded vowel, or near-low front unrounded vowel, is a type of vowel sound, used in some spoken languages. The symbol in the International Phonetic Alphabet that represents this sound is [æ].

Complementary distribution: It is the mutually exclusive relationship between two phonetically similar segments. It exists when one segment occurs in an environment where the other segment never occurs.

Consonants: They are speech sounds produced by occluding with or without releasing [p], [b], [t], [d], [k], [g], diverting [m], [n], [ŋ], or obstructing [f], [v], [s], [z], etc. the flow of air from the lungs.

Epsilon: It is the name of the phonetic symbol [ɛ] in IPA that represents the open-mid front unrounded vowel.

Error: It is the use of a word, speech act or grammatical items in such a way it seems imperfect and significant of an incomplete learning.

Fossilization: It refers to the process in which incorrect linguistic features become a permanent part of the way a person speaks and writes a new language, especially when not learned as a young child.

Free variation: It is the interchangeable relationship between two phones, in which the phones may substitute for one another in the same environment without causing a change in meaning.

Mistake: It is described as a deviation in the speakers' language that occurs when the speakers, although familiar with the rule, fail to perform according to their competence.

Phoneme: It is the smallest unit that can make a difference in meaning. (Trask, 1996, p.356).

Phonemic contrast: It refers to a minimal phonetic difference, that is, small differences in speech sounds, that makes a difference in how the sound is perceived by listeners, and can therefore lead to different mental lexical entries for words.

Phonetic transcription: It (also known as phonetic script or phonetic notation) is the visual representation of speech sounds (or phones) by means of symbols. The most common type of phonetic transcription uses a phonetic alphabet, such as the International Phonetic Alphabet.

Semi-vowels: They are speech sounds such as [y], [w], or [r] that have the articulation of a vowel but shorter in duration and are treated as consonants in syllabication.

Syllabic consonant: It is a consonant that forms a syllable on its own, like the [m], [n] and [l] in the English words “rhythm”, “button” and “bottle”, or is the nucleus of a syllable, like the [r] sound in the American pronunciation of work.

Vowels: They are the speech sounds articulated when a voiced airstream is shaped using the tongue and the lips to modify the overall shapes of the mouth (Kelly, 2000, p.29).

1.6. An Evaluation of the Chapter

In this chapter, the subject-matter of [æ] and [ɛ] vowels of English and the pronunciation problems regarding them have been analyzed and depicted. The major purposes of this study have been explicated. The research questions to guide this study have been listed in Table 1. The significance of the study has been discussed. The abbreviations and basic terms to be used in this study have been pointed out.

CHAPTER 2

LITERATURE REVIEW

2.1. An Overview of the Chapter

In this chapter, the reader will find the previous studies on the subject-matter of this study and some other closely related topics lying at the background of the main concern of it. The analysis of [æ] and [ɛ] vowels of English, common pronunciation mistakes made by Turkish learners, fossilization, speech therapies, the difficulties in learning English vowels by EFL learners, and many other satellite topics revolving around the subject matter will be revealed, and the results of those studies will be examined and discussed here.

Additionally, the author of the study will elaborate on the American English vowels in detail, particularly monophthongs since the main concern of this study is two monophthong phonemes in NAE, namely [æ] and [ɛ]. Turkish vowel system will also be analyzed to pave the way for a comparative discussion between Turkish and English vowels with a special focus on monophthongs. A description and definition of phonetics and its relationship to our subject matter will also be set out.

Finally, various issues regarding teaching pronunciation will be discussed in the present chapter. They are fossilization, neutralization, factors behind pronunciation errors, the main difficulties that Turkish EFL learners have on pronunciation, how to rehabilitate them, and finally audio-articulation method, which is a model to cure pronunciation errors designed by Demirezen.

2.2. An Analysis of [æ] and [ɛ] Vowel Sounds of English

Many studies have been carried out on the analysis of English vowels, and among all of them, the most related one to the subject-matter of this study is Demirezen's study in 2006. For him, one of the most common errors committed by the majority of English teachers and learners in Turkey is the recognition of [æ] and [ɛ] vowel sounds of English (Demirezen, 2006, p.162). He asserts that the primary reason for this error by Turkish learners is that these two sounds are not coded in the Turkish vowel chart. That's why Turkish learners articulate both of these phonemes as the [e] sound in Turkish vowel chart since it is the most relevant version in contemporary standard Turkish, and this process is called *neutralization*.

He applied a diagnostic test on 14 M.A. degree students at Hacettepe University ELT Department and found out that all of the participants had extreme difficulty in recognizing [æ] and [ɛ] vowel sounds of English.

Kahraman (2012, p.380) carried out another study to test the written recognition of [æ] sound by 16 lecturers in a Foreign Language Department at a university in Turkey. They had all proved their proficiency to be a lecturer by the examinations given by the state as scoring over 85%. All of the lecturers were graduated from ELT departments, and none of them had had abroad experience before. The participants read a text aloud including 43 [æ], 14 [e], and 5 [ʌ] vowel phonemes. A treatment session of one lesson hour between the pre-test and the post-test was given to the participants, and it was found out that there was a meaningful difference between their performances in the pre-test and the post-test.

Demirezen (2017, p.268) conducted another study on [æ] and [ɑ] vowel fossilization in the pronunciation of ELT students at a foundation university in Turkey. He did a research project on a pretest-posttest design which was administered to evaluate the recognition of these two phonemes. 39 ELT students had a survey to identify the sounds uttered by their lecturer and matched them with their correct IPA symbols. Students participated in audition, recognition, and pronunciation sessions given by the owner of the study. A five alternative multiple choice test was given to the students with an interval of two weeks. He found that [ɑ] phoneme was more problematic for the participants of the study than [æ] phoneme.

The [æ] and [ɛ] vowel sounds of English are not a problem for only Turkish learners. Wheelock (2016, p.41) administered an error analysis of English pronunciation by Italian learners of English with the aim of identifying the most common pronunciation errors fossilized by the target audience of the paper and designing effective teaching materials to provide a cure for those most common errors detected. The participants of the study were 27 advanced level learners of English. In her study, she used the online *lingorado.com/ipa/* to create a model of North American English transcription of a reading text. She recorded six most common vowel malformations produced by the participants. They were [ɑ], [oʊ],

[æ], [ɛ], [ɪ], and [i]. She concluded that the participants who spent time in English-dominant countries had considerably less malformations of these vowels than the ones who had no or relatively very little residency in any of the English-speaking countries.

Aktuğ (2015, p.104) analyzed the common English pronunciation errors of elementary level EFL students in Turkey. She designed a study to investigate the vowel quality, the common pronunciation problems among those 82 students from three different 7th grade learners with the help of both qualitative and quantitative data collections. According to her statistical analysis and the interview discussion performed with 5 English language teachers, Turkish learners had much trouble internalizing the English vowels. They insistently vocalized English vowels as they did in Turkish. They also noted that their course books had not been designed to encourage the pronunciation skills. Teachers mentioned they used to spare a very little part of the lesson for the pronunciation activities or skip them most of the time.

Lin (1997, p.22) investigated to what extent Chinese people have trouble pronouncing five front vowels of American English. The researcher found out the acoustic differences in the production of American vowels by native American people and non-native Chinese people. He compared the results employed with a two-tailed t-test. A significant difference was found between the [ɛ] sound production by Chinese people and American people since [ɛ] sound does not exist in Mandarin Chinese language. [æ] sound is also not similar to any sounds in Chinese language, but the acoustic difference between native and non-native speakers was statistically lower than it was in the [ɛ] sound.

Another phonetic problem on vowels of English was detected by Habibi (2016, p.45) as diphthongization in Indonesia. This study was administered to Indonesian advanced level EFL students to find the most common pronunciation mistakes generated by them. A descriptive qualitative inquiry was employed to describe the incorrectly pronounced segmental sounds by the research subjects. According to the results of the study, Indonesian EFL learners had a tendency to replace [ɪ] and [ə] sounds with [ɛ] sound. To illustrate, they had a fossilized replacement for the word “examine” [ɪg'zæm.ɪn] as [ɛg'zæm.ɪn] and for the word

“sequence” [ˈsiːkwəns] as [ˈsiːkwəns]. They also substituted the sound in the initial syllable with [ɛ] sound, so a great number of students uttered [ˈsekwəns]. This is neutralization. Since their mother tongue inventory do not include those vowels of English, they substitute most of them with [ɛ] sound or [ei]. An example to this is the replacement of “said” [sɛd] with [seid]. This is also called diphthongization in phonetics.

A closely similar study to the previous one was conducted by Ababneh (2018, p.250). He investigated the pronunciation errors committed by Saudi Arab students who majored in English Department at a state university. In his both qualitative and quantitative study, he obtained the data about pronunciation mistakes of those 50 participants and found out that the learners had a considerable confusion on English vowels, especially with the incorrect replacement of [ɛ], [ei], and [æ] sounds. They had difficulty in making a distinction between the articulation of “sell” and “sale” words. Instead of the word “sell” which is articulated as [sɛl], they articulated many wrong utterances such as [seil], [sɪl], [sæɪ], or [sæɪl]. What is more, for the word “lab”, only 9 out of 25 advanced level participants could pronounce it correctly as [læb].

Vergun (2006, p.13) administered a highly distinctive longitudinal case study on the acquisition of American English vowels by a Spanish EFL learner. He tried to find answers for three questions. The first one was on to what extent the learner was restricted to his L1 categories at the beginning of his L2 learning process, and findings proved that he was extremely limited to his L1 inventory. His second research question was on comparing the quality of his utterances of English vowels in terms of whether the target vowel was similar to those present in his L1 or completely new. The conclusion was that the new vowel was pronounced similarly to the target one. And lastly, he asked if the data supported the Speech Learning Model regarding new and similar vowels. The result was that the subject did not create a new category for the new vowel. He pronounced [ɛ] sound as [e] and [æ] sound as [ɑ]. In Figure 1, the categorization process of the target vowel can be seen.

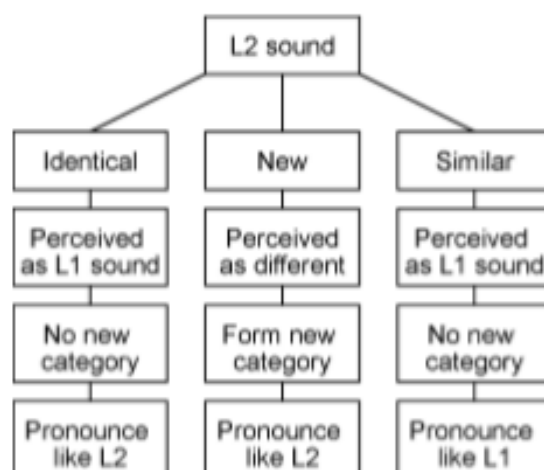


Figure 1. Model of learners' acquisition of L2 sounds (Vergun, 2006, p.13).

In his research, he also made a comparison between the American English vowels and the vowels of some other European Languages such as Dutch, German, and Spanish. To sum his study up, the subject participating in his study did not form any new categories though [æ] and [ɛ] sounds were completely new to him.

As for the acoustic analysis of [æ] and [ɛ] sounds, Wang and Heuven (2006, p.247) had a descriptive study on the pronunciation of English vowels by Chinese, Dutch, and American speakers. In this research, the authors collected data from randomly chosen participants from the abovementioned countries to study on. What they found out was that for Chinese speakers, there was almost no difference between the acoustic quality of [æ] and [ɛ] sounds. Unlike Chinese people and unlike what had been recorded in a research conducted by Collings and Mees in 1981, Dutch speakers showed a clear separation between [æ] and [ɛ] sounds in their utterances. They regarded this result as an achievement of the pronunciation education in the Netherlands's education system. Traditionally, that vowel pair had been mentioned as a learning problem for Dutch, but eventually, a notion of difference was established.

Similarly, Ivanova (2016, p.3) designed and conducted a research to disclose the problems that native Russian speakers face in the acquisition of American English monophthongs based on his predictions by the Speech Learning Model designed by Flege in 1987. According to SLM, new target language phonemes will be acquired by the ESL and EFL learners more easily than the ones which are

similar to their mother tongue phonemes. In this context, the expectation was that the contrasts between [i-ɪ], [u-ʊ], [ɛ-æ], and [ɑ-ʌ] phonemes of American English would be troublesome for the Russian learners. For Flege (2005, p.9), the new phonemes of target language are more difficult to comprehend at the beginning, but in time, there happen to be less problems with those in comparison with the ones which overlap with the existing L1 phonemes. American monophthongs [ɛ], [æ], [i], and [ɪ] were quite new to the adult Russian subjects of the study. And in that study, he concluded that the distinction between [ɛ] and [æ] phonemes was the most challenging for the participants both in the perception and the production level.

Another study on English vowels was carried out by Kartyastuti (2017, p.52) to identify which English vowels were the most problematic ones for Indonesian learners at a university in 2015-2016 academic year. She classified the pronunciation errors through the data collected by her research, which was a descriptive qualitative one. She later categorized those pronunciation errors of American English vowels generated by the participants into three different groups as substitution, insertion, and omission. The percentage numbers of the monophthongs were from the highest to the lowest as: [ʌ] and [æ] %100, [e] 53%, [ə] 34%, [ɪ] 21%, [ɒ] 12%, [ʊ] 8%, and [ɛ] only 5% (Kartyastuti, 2017, p.60).

For Hişmanoğlu (2004, p.114), the most problematic vowel sounds for Turkish EFL learners are the monophthongs, particularly because of the non-existence of them in the mother tongue inventory and the confusion between the short and long ones. According to his findings, Turkish learners have a tendency to pronounce North American [ɛ] sound as Turkish vowel [e] sound as it occurs in the example of “intensely”. They pronounce it as [ɪntensli] instead of [ɪntensli]. Similarly, they pronounce [æ] sound of General American as the Turkish [e] sound. For instance, the word “matter” is generally pronounced as [metər] instead of [mæDər]. This is the neutralization of [ɛ] and [æ] phonemes of English into Turkish [e] sound.

In his PhD dissertation, Hişmanoğlu (2004, p.678) analyzed these two problem-causing phonemes. He had a control group and experimental group and a pre-test and post-test design together with a treatment session which was only for

the experimental group to diagnose the problem and to cure it if it was possible. In both the control and the experimental group, the percentage of errors on [æ] sound was 99%. 89% of these groups pronounced [æ] sound as Turkish [e] sound. And 10% of the control group subjects and 9% of experimental group subjects pronounced it as [v] sound. The experimental group received a treatment session including tongue twisters and contextualized drills, and the control group received only theoretical information about the subject without any further practice in class. After this experiment, the post-test results surprisingly showed that 91% of the control group made mistakes, while this percentage was 95% among the experimental group (Hişmanoğlu, 2004, p.679).

In another study of him, Hişmanoğlu (2011, p.29) tried to explore which English vowels led to articulation problems for Turkish EFL learners and to find out whether they could be taught better via internet-based pronunciation classes rather than traditional face to face teacher instruction to lessen their pronunciation mistakes. With this purpose, he recorded and transcribed the problematic vowel sounds of the participants and indicated them as in Table 2 below.

Table 2

Distribution of English Vowels Mispronounced by the Participants with Percentages

Vowel	Average mispronunciation
1. / æ /	98%
2. / ou /	97%
3. / ε /	87%
4. / ɔ : /	79%
5. / ex /	60%
6. / u /	52%
7. / i /	41%
8. / u : /	36%
9. / a /	17%
10. / ʌ /	4%
11. / ɪ /	1%

(Hişmanoğlu, 2011, p.29)

Getting these pre-test scores, he provided the experimental group with a pronunciation class via internet-based pronunciation lessons, and the control group were provided traditional lesson. According to this study, the most problematic monophthongs were [æ] sound with 98% and [ɛ] sound with 87%. As a result of this study, internet-based pronunciation teaching was found more effective than the traditional one to diminish learners' mispronunciation of vowel sounds.

As for the [ɛ] sound, the 88% of the subjects in the control group made mistakes, and 67% of the experimental group mispronounced it. After getting these pre-test scores, the researcher applied a lesson plan with tongue twisters and contextualized drills to the experimental group. And as it was done in [æ] sound study, the control group was given only theoretical knowledge in a lesson without any active practice. The result of the post-test that time showed that the control group mispronounced 31%, and the experimental group did 50%. The experimental group showed a considerable improvement with [ɛ] sound unlike their result in the [æ] sound.

Shamallakh (2018, p.87), administered a research in which he analyzed the recognition of [æ] and [ɛ] sounds in terms of their positions in the word as being in the initial, in the middle or final position as well as finding the most problematic monophthong for the ELL students in a Palestinian University. According to his study, monophthong sounds and the vowels in the middle position were the most problematic ones with a score of 47% mispronunciation, followed by vowels in the initial position with 33.5% and word final with 19.5% as seen in Table 3 below.

Table 3

Count and Rate of the Incorrect Pronunciation of Words

	Monophthongs		Diphthongs	
	No. Wrong Sounds	%	No. Wrong Sounds	%
Word Initial	387	33.5	439	41.2
Word Middle	542	47.0	284	26.6
Word Final	225	19.5	343	32.2
Total	1154	100	1066	100

(Shamallakh, 2018, p.87)

According to his research, [æ] sound, both being in the initial and middle position, was the most problematic monophthong for those 71 participants in his study. [ɛ] sound was the second most problematic monophthong being in the middle position.

2.2.1. Phonetics

Demirezen (1987, p.72) describes the content of phonetics as the sound features and their organization into speech sounds, which are also called ‘phones’. In this context, phonetics as a science as a branch of linguistics has an objective to find out what these phones are, what categories do they belong to, and how they differ from each other in different environments. There are mainly three types of phonetics as articulatory, acoustic, and auditory. The first one is the study of how sounds are articulated. The second one studies the physical features of sounds, and the last one deals with the recognition of speech sounds, which is the framework of the present study.

Phonetics is a concern for this study with regard to its components affecting the pronunciation skill. Pronunciation has two components as segmental and suprasegmental. The former one includes consonants and vowels, and the latter one is mainly comprised of intonation, pitch, rhythm, and stress. Segmental features are minimal units of sounds defined in phonetics. They are related to the ‘phoneme’ which is described as the smallest unit that can make a difference in meaning. (Trask, 1996, p.356). The set of phonemes consists of two categories as consonants and vowels. Among these, the latter is our primary concern of this study. Kelly (2000, p.29) makes a definition of vowels as they are articulated when a voiced airstream is shaped using the tongue and the lips to modify the overall shapes of the mouth.

There are oral and nasal vowels in world languages, yet in English vowels, only oral ones exist though they can be affected in the interaction with nasal consonants of English. To make a distinction between vowels, linguists create systems, and the most popular one to show these differences is the cardinal vowel diagram. It was devised by Daniel Jones in 1967 (Crystal, 2003, p.65). In the next section, the reader of this paper will find the common framework for all world

languages to show the differences of phonemes in IPA, drawn in a cardinal system. An illustration on how to read this diagram is given on Figure 2 below.

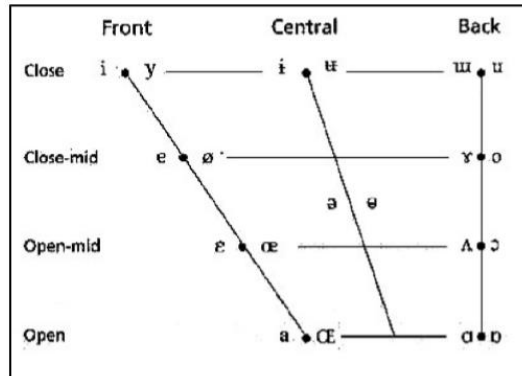


Figure 2. The cardinal vowel system (Crystal, 2003, p.65).

This system provides one with reference points to enable recognition of vowels of a language. Its medium is the space in the mouth where one articulates them. The vertical lines are the representatives of front, center, and back positions of the tongue. For instance, the lowest reference point at the front of the mouth is [a] sound, and correspondingly [ɑ] is the back of the mouth in the lowest position of the tongue. The vowels in this area of [a] and [ɑ] phonemes are called open or low vowels. On the other side, the tongue at the highest front point of the mouth can produce [i] sound while the mouth is still open because if it gets closed, then a consonant phoneme is articulated. When the tongue is at the back of the mouth and at the highest position, [u] sound is generated.

The horizontal lines from [i] to [a] represent the mouth position in terms of its openness. While producing [a] sound, the mouth is completely open, and for the [i] sound, it is almost close. In some resources, this is indicated as jaw position as well to visualize the mouth in three dimensions. There are four categories here as open, open-mid; close-mid, and close. Close means here not completely closed at all; it points out to the theoretically most possible closeness. As it has just been mentioned above, a completely closed mouth cannot produce a vowel sound. [ɛ] sound can be articulated when the mouth is mid-open for instance.

The last significant factor to describe the vowels among three major categories recognized by Kelly (2000, p.38) and Crystal (2003, p.65) is the lip position. The lip can be rounded, spread, or neutral. English vowels are classified in terms of their being rounded or unrounded generally. The mid and high back vowels [u], [ʊ], [o], and [ɔ], for instance, are rounded while the front and central ones [i], [ɪ], [e], [ɛ], [æ], [ɑ], [ʌ], and [ə] are marked as unrounded.

Lastly, there is a difference between phonetics and phonemics. In phonetics, the researchers study all the details about every type of speech sounds. Nevertheless, in phonemics, the scholars get those raw data and analyze whether the differences between them indicate any contrasts with different meanings. With the help of phonetics, one can understand the differences between all the sounds in a language, while via phonemics, one decides on the categories of sounds which stand as units in the language.

Phonemics study orthographic differences. To illustrate, in the spelling of [æ] sound, one can find the letters “a, au, ai, i, ou, and o” as letter correspondences to it. For instance, the letter ‘a’ can be articulated as [æ] sound in the pronunciation of the word “map” [mæp]. Similarly, in the spelling of [ɛ] sound, one can find many letters such as “e, ie, ea, ue, ai, ei, a, and eo.” To exemplify, a combination of “ai” letters can be articulated as [ɛ] sound in the pronunciation of the word “said” [sed].

2.2.1.1. International Phonetic Alphabet

In the late 19th century, British and French language teachers, following their leader Paul Passy, a linguist from France, established the International Phonetic Association. They created an alphabet which all languages can make use of by using a common systematical chart of all sounds. Originally, it was only designed to make a bridge between English and French languages, but in time, it has undergone many revisions and become the International Phonetic Alphabet that all world languages share today. Currently, we use its phonemic transcription to learn the pronunciation of a word through the dictionaries.

The symbols of it were initially comprised of Latin or Greek letters, but now we can also see new symbols from different languages. By making a proposal for a change in the alphabet, linguists occasionally modify the alphabet through *Journal*

of the IPA. Those proposals should be approved by the Council of the Association. In the academic tradition, the professional usage of the phonetic transcription is done by the enclosed square brackets as in the example of [cæt] for the word “cat” in English. To learn the phonemic transcription of English pronunciation, an EFL learner must be acquainted with the phonemic chart. In IPA, there are more than 160 phonemes, yet this study will deal with only North American English phonemes and, particularly, vowel sounds of it as in Figure 3.

	FRONT	CENTER	BACK
HIGH	i:		u:
	ɪ		ʊ
MID	e:	ə	oʊ
	ɛ	ʌ	ɔ
LOW	æ		ɑ

Figure 3. IPA phonemic figure for English vowels (Demirezen, 2017, p.263).

2.2.2. North American English (NAE) Vowels

English vowel system encompasses monophthongs, diphthongs, and triphthongs. Monophthongs are also called pure vowels which are comprised of long and short vowels. There are 12 monophthongs, 8 diphthongs, and 5 triphthongs that people articulate in their speech in the North American Vowel system. Monophthongs are articulated when the tongue is only at one position during the articulation process. Five of them are relatively longer than the others in the duration of articulation. Descriptions of the different features of these vowels will be provided from this part on.

To be more apprehensible to read the vowel chart below and the meanings of three dimensions mentioned in the previous section, the author of the study is to explicate some terms in this section. Vowels can be classified into three categories in terms of the parts of the speaker’s tongue. The first one is the front vowels. They are generated by raising the front part of the tongue through the hard palate during the articulation process. The second one is back vowels. In the articulation of these

vowels, the back part of the tongue reaches at the soft palate. And the last one is central vowels. These vowels are produced by the speaker's raising the central part of the tongue. Hence, it is between the positions of the front and back vowels. Based on the height of the tongue, vowels can be divided into four categories as close, open, half-close, and half-open.

The first one is close vowels. In the articulation process of these vowels, the tongue is raised as high as possible during the whole process of the articulation. The second one is open vowels. During their articulation, the tongue is in a location as low as possible. The third one is half-close vowels. In the articulation of them, the position of the tongue is approximately one third away from close to open vowels. The last one is half-open vowels. Upon articulating these vowels, the position of the tongue is about two-third of the distance from close to open vowels. And finally, based on the length of the articulation, vowels are classified into two main categories as long and short vowels (Roach, 2009, p.25). Among the English vowel phonemes [a, æ, ɑ, ə, i:, ʌ, ɪ, ε, o:, ɔ, e, u:, ʊ], the phonemic contrast between [æ] and [ε] is emphasized in this research.

The [ε] is called epsilon and [æ] is called ash. They are vowel sounds of the English language the contrast between which causes serious fossilized pronunciation to the Turkish learners. The vowel [æ] is a low front short vowel, whereas the [ε] vowel is a mid-front short vowel, which is produced a bit higher in the mouth with respect to [æ]. The main cause of [ε] and [æ] vowel sounds as fossilized errors is obviously the fact that they are not coded in the Turkish vowel chart. Therefore, Turkish learners have difficulty in distinguishing between “back” [bæk] and “beck” [bɛk]. Two different phonemes cause two different meanings in this example. To see the distinction between [æ] and [ε] sounds, their contrastive positionings with each other and with other similar vowel sounds are given in the figures below.

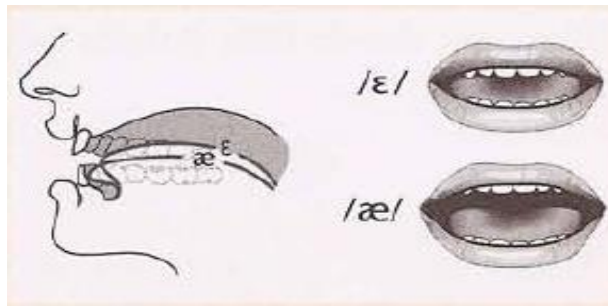


Figure 4. The contrastive positioning of [æ] and [ɛ] sounds (Baker and Goldstein, 2008, p.20).

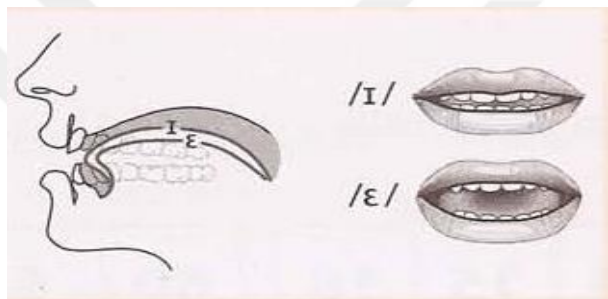


Figure 5. The contrastive positioning of [ɛ] and [ɪ] sounds (Baker and Goldstein, 2008, p.12).

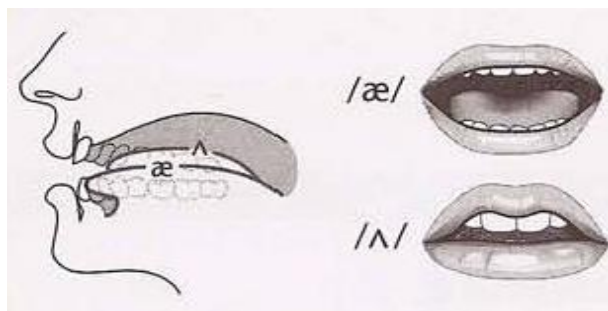


Figure 6. The contrastive positioning of [æ] and [ʌ] sounds (Baker and Goldstein, 2008, p.26).

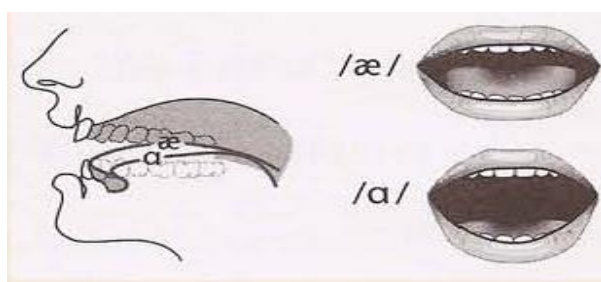


Figure 7. The contrastive positioning of [æ] and [a] sounds (Baker and Goldstein, 2008, p.38).

2.2.3. Turkish Vowel System

The most distinctive characteristics of Turkish language are its vowel harmony and its orthography. In Turkish orthography, each Turkish letter is pronounced as they are written, and there are no silent letters; that is to say, every written letter in a word is pronounced. Each letter has only one sound, unlike it is in English. The correspondence between the letters and their sounds are one-to-one. The features of vowels do not change in different phonetic environments.

There are eight vowels in Turkish language. They are [a], [e], [ɪ], [i], [o], [ö], [u], and [ü]. The Turkish vowel system is three dimensional as being high, back, and round. There are only monophthongs in Turkish language, which means that there are no diphthongs and triphthongs. All Turkish vowels are short; that's to say, there are no originally long vowels. However, the long versions of [a], [e], [i], and [u] in non-native words have been taken from other languages such as “adalet” (a-da:-let, justice), “badem” (ba:-dem, almond), and “kafi” (ka:-fi:, enough).

Similarly, a foreigner might think that there are diphthongs in Turkish as well, yet originally they have been taken from other languages. For instance, the word “camia” (ca:mia, society) is an Arabic-originated word. And some Turkish words such as “aile” might seem to be a diphthong since two vowels stand side by side in that word, yet each vowel keeps its specific features. In other words, they are still separate monophthongs which just happen to be together in different syllables. It means that there is an air flow between these two separate syllables.

The IPA correspondence of Turkish vowels are [i], [y], [u], [ɯ], [e], [ø-œ], [a], and [o]. The vowel inventory of Turkish language is very systematic as it is

comprised of four high and four low, four back and four front, and four rounded and four unrounded vowel sounds. In Figure 8 below, their locations can be seen in the Turkish phonetic chart.

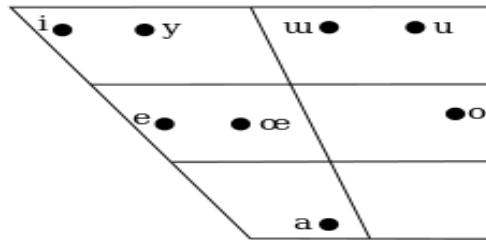


Figure 8. Vowels of Turkish (Zimmer and Orgun, 1999, p.155).

Some example words for Turkish vowels with their English meanings are as such:

[i]: an unrounded, front and high vowel

titiz (meticulous), cimri (mean), gidiş (departure)

[y]: a rounded, front, and high vowel

bülbül (nightingale), gül (rose), tüm (whole)

[u]: an unrounded, back, and high vowel

ılık (warm), ışık (light), kırık (broken)

[ü]: a rounded, back and high vowel

musluk (tap), çukur (pit), kuyu (well)

[e]: an unrounded, front, and mid vowel

kelebek (butterfly), sepet (basket), leylek (stork)

[ø-œ]: a rounded, front, and mid vowel

göl (lake), göz (eye), çöl (dessert)

[a]: an unrounded, low, and central vowel

tabak (plate), masa (table), kapak (cover)

[o]: a rounded, back and mid vowel

boş (empty), kol (arm), yok (absent)

2.2.4. A Comparison of American English Vowels and Turkish Vowels

While there are some similarities between the North American English and Turkish sound systems, particularly in terms of their vowel sound systems, these two languages differ from each other in many aspects. The most remarkable distinction between these two languages using the Latin alphabet is that the pronunciation of some English words sometimes do not comply with their written form unlike Turkish in which the words are always pronounced as they are written. Regarding this issue, the first shock wave hits Turkish EFL learners while learning English pronunciation.

To illustrate, there is no [æ] letter in English, but it exists there as a sound. What is more, this sound does not exist in Turkish language either as a sound or as a letter at all. The various forms of this [æ] sound in the written form in terms of its phonetic environment is another case that has been mentioned above. As an instance, the words “cat” [kæt], “laugh” [læf], “plaid” [plæd], “timbre” [ˈtæmbə], even in some dialects of North American English, the words “countdown” [ˈkaʊntdaʊn] and “downtown” [ˈdaʊntaʊn], include [æ] sound although in dictionaries, the last two of them are transcribed most of the time as [daʊnˈtaʊn] and [ˈkaʊntdaʊn]. The written forms of the letters are “a, au, ai, i, ou, and o”, but they are all pronounced as [æ] sound. This is quite complicated for Turkish EFL learners.

As for the [ɛ] sound, the situation is even more chaotic. The words “mend”, “friend”, “measure”, “quess”, “said”, “Leicester”, “many”, and “Geoffrey” all include [ɛ] sound. Which means that the written forms of all the following letters are “e, ie, ea, ue, ai, ei, a, and eo”; nevertheless, all of them are pronounced as [ɛ] sound. This blows Turkish EFL learners’ minds at the first glance due to the orthographic difference between these two languages. The [ɛ] sound of North American English seems very similar to the [e] sound in Turkish, yet sometimes the similarity can also be a tremendous problem for the non-native learners.

It is indeed still a mystery among the language scholars whether it is the similarities or the differences between the vowels of mother tongue and the target language that lead to more confusion in the perception and the production process. According to a study conducted by Brie’re (1996, p.277), the new sounds of the target language which do not exist in the mother tongue of the EFL learner are easier to pronounce accurately. Nonetheless, Flege and Port (1981, p.140) came up with just the opposite conclusion in their study. According to their experiment, the learners had more difficulty in both recognizing and articulating the new sounds of the target language that do not exist in their mother language inventory.

2.3. Teaching Pronunciation

Along with the changing paradigms in language teaching, the place of pronunciation has always been one of the most affected feature of the language like the swings of pendulum. For instance, prior to the 1980s, pronunciation was the most ignored feature of language both in teaching and through the literature. Brown (1991, p.180) states that out of 1420 articles in four leading English teaching journals, only 95 of them investigated pronunciation between 1975 and 1988. That’s to say, in those years, the percentage of pronunciation coverage in the English teaching journals was just 7.6%.

In Grammar-Translation Method (GTM) there was not any attention paid to pronunciation at all. In the following era, Direct method started to be implemented in language schools, and EFL learners began listening to and repeating the teacher’s utterances inasmuch as the medium of teaching was English in the classes. And when the Audio-Lingual Method was favored by the academic world, pronunciation

gained much more value than ever. Explicit pronunciation started to be taught at schools in the late 1960s in such an elaborated manner that even the place and manner of articulation of sounds were being taught via visual transcriptions. Suprasegmental features of language were also in the curriculum at that time.

Nevertheless, in the early 1970s, the position of pronunciation teaching in the curriculums was discussed widely by the leading scholars of the academic world of EFL and ESL and almost expelled from a lot of language syllabi and language education programs. From 1980 on, the Communication Approach favored the intelligibility of the pronunciation. Thanks to this, many studies were conducted on pronunciation, mainly on segmental features, yet soon after, they also realized the significance of suprasegmental features in an effective communication. And currently, we can find a sufficient amount of studies on pronunciation development in the literature. Thus, how to teach pronunciation has become a challenge for instructors in Turkey now.

2.3.1. The Significance of Explicit Teaching of Pronunciation

Nowadays, we still feel the necessity to pay more attention to teaching pronunciation in EFL classes. In public schools, learners get their language education in highly crowded classes, so they do not have much chance to improve their pronunciation ability. And they are not even aware of some segmental and suprasegmental features of the target language. They can also rarely take part in the activities in class because of the limited time. In Turkey, the students in MONE generally have only four hours English lessons, and the teachers mainly allocate their time for grammar and vocabulary studies rather than pronunciation studies.

The case with the course books is also very similar. In many coursebooks used in public schools, particularly, the sections spared for the pronunciation teaching are very limited. They at most take 10 minutes to study. When the number of the students in a class is taken into consideration, there is almost no way that they can improve their pronunciation skill without an explicit teaching of it. Exam-centered minds of teachers and students also considerably affect this situation. Since in their exams like YKS or TEOG, there are no evaluations of speaking skills, studying pronunciation is mostly being neglected.

As for English teachers, they have some other questions in their minds. Most of them, especially in MONE, do not see themselves as capable enough to teach pronunciation. The most significant reason for this is that they do not have any professional background about it. They did not take any courses regarding pronunciation before their graduation. Therefore, it is difficult for them to detect the mistakes of the students and correct them.

Upon looking at the changes in the paradigm on pronunciation teaching, today one can see that the communicative competence is more valued than the linguistic competence. It is not only segmentals but also suprasegmentals to be given much attention. The classes are no longer teacher centered; they are learner centered now. The participants are active rather than just being passive. Individual differences, learner strategies, multiple intelligences are all taken into consideration right now. Therefore, the pronunciation teaching requires to be explicit.

The sounds should be taught visually, auditorily, kinesthetically, and even in a tactile way. By this way, students can hear the distinction between different sounds better, feel it better. They can metacognitively focus on the movement of their tongues, jaws, and lips and some significant details like whether their tongue is in contact with the palate or not during the articulation. If they do not pay attention to these features, then the learning process of pronunciation remains incomplete, and this case will certainly lead to fossilized errors in the future. To implement them in the class Aktuğ (2015, p.33) presents some techniques suggested by Celce, Brinton and Goodwin in 2008 such as:

- The use of fluency-building activities
- Accuracy-oriented exercises
- Adaptation of authentic materials
- Use of instructional technology
- Multi-sensory modes of learning in teaching of pronunciation

While implementing them in the class, perhaps the most significant value of these techniques is to raise the learners' awareness of the correct pronunciation and how significant to have it.

2.3.2. Factors Affecting Pronunciation Learning

There are many known and surely unknown factors hidden out there to be revealed by the scientists that influence the pronunciation acquisition of an EFL learner. According to Wheelock (2016, p.43), the quantity of exposure to English, attitude and motivation, the instruction quality, and the age at which the exposure began are all crucial factors that influence the development of intelligible English pronunciation of a non-native learner. Mikulastikova (2012, p.27) categorizes these factors under two major, as internal and external, and several minor classes. Internal factors for him are age, personality, motivation, experiences, cognition and native language. As for the external factors, they are curriculum, instruction, culture, status, motivation, and access to native speakers.

The most crucial point is the age factor. In EFL literature, thousands of experiments have proven the significance of it in learning the correct pronunciation of a foreign language. It is a well-known fact that the younger the learners are, the more likely it is for them to be native-like. Neurolinguists have been attempting to figure out the realities regarding the critical age factor for a long time. There are many theories about it. Many scholars strongly argue that after puberty, it is highly difficult to be native-like. Indeed, Krashen (1982, p.16) claimed that the period of lateralization might even be completed by the age of 4, not by the puberty. This is called the critical age hypothesis. It claims, biologically and in some periods of their time, learners acquire the language more easily and more accurately, particularly for pronunciation skills. All in all, almost all linguists agree on the inevitable influence of age factor to learn the pronunciation of a new language.

The amount and the quality of exposure to the target language is another essential factor. If the country they live in is not an English speaking one, or the opportunities to frequently visit and stay there for a considerable amount of time is not very possible for the learners, then they need a high quality education. The exposure to native pronunciation, or at least native-like pronunciation is crucial for the learners to avoid from errors. If there is an inadequate amount of exposure to native pronunciation, then the learner tends to have errors which will most probably be fossilized after some time of repetition of them. The learners' awareness is also

a contributory factor here. If the learner understands the significance of this, then s/he can find native speakers, radio programs, video shows, movie strips, or even computer assisted language learning tools to improve herself/himself.

Phonetic ability is another factor, which is hard to be proven by experiment. There is a common view that some learners acquire the accurate pronunciation more easily than some others without any solid explanation. This does not mean that some people can never be proficient speakers. It is just about the fact that they hear and articulate the sounds better than the others. Hence, they spend less time and effort when compared to the other learners. This brings our minds the question if there is anything like phonetic intelligence at all.

Personality and attitudes have a huge impact on learning the pronunciation of a new language. Shy personalities are not very successful, whereas risk takers become quite successful. Classroom activities are the only chances to improve their pronunciation skill; therefore, the learners participating more in those activities, and particularly if they have a good feeling of the target language and culture, get more accurate and native-like accents. This situation is a big concern for the educational pedagogists.

Similarly, motivation is a great concern for the development of pronunciation skill. There are many different types of motivation. Two basic types are instrumental and integrative. The former one is about their career plans, being able to read some kinds of reading materials, translation, etc. The latter one is fulfilled as the learner wants to learn the culture of the target language community and to identify themselves as a part of that community. The atmosphere in the class and the relationship between the teacher or the classmates are all integral parts of the motivation factor.

The last crucial factor is L1 intervention. While learning the mother tongue, one does not have any other outside interference, hence all the process just goes natural. Nevertheless, L1 shapes the learners' language learning process, and the second language learning takes place on that ground. This is the difference between language acquisition of the mother tongue and language learning of the foreign language. The nature of L1, in terms of its differences and similarities to the second

language, can facilitate or complicate the learning process of the target language. To sum up, there are various forms of factors influencing the development of pronunciation of an EFL learner.

2.3.2.1. Types of Phonetic Errors in English

To begin with, there are two main problems with pronunciation as mistakes and errors. It is essential to understand the distinction between an error and a mistake. Mistakes can be done by everyone, even by native speakers. It is generally not about the knowledge but about the performance of the language. The reasons for the mistakes might be such as memory limitation, fatigue, sleeplessness, tiredness or excessive emotional state at a time. They are irregular and occasional; nevertheless, errors are systematic incorrect pronunciation of L2 words. They are generally there due to a lack of information. Thus, the learners do not do them intentionally. These errors damage the intelligibility of the communication in different levels.

There are three categories of these errors in terms of their levels of disturbance in the communication. The most important category is the one which impedes the speakers from having an intelligible communication. In the second category, the communication is intelligible, yet it is constantly irritating and amusing the listeners to the extent that the speaker cannot be followed any more. The third category includes some minor errors which can be neglected if the objective of the speaker is not being native-like.

2.3.2.2. Sources of Pronunciation Errors

There might be several sources out there that may lead to pronunciation errors for an EFL/ESL learner. For Brown (2007, p.263), they are interlingual transfer, intralingual transfer, context of learning, and communication strategies. For him, in the early stages of learning a foreign language, one makes use of the native language quite a lot. Most of the errors of this type occur at the beginning stages of the acquisition due to the interlingual transfer from the mother tongue. Second one is intralingual transfer. These errors can be caused by faulty generalization, failure to conceptualize the circumstances that the specific rules apply, or incomplete application of the rules.

The most common subcategories of this type of error are substitution, insertion, and omission. A substitution error is the wrong usage of a pronunciation rule that the speaker does as a replacement of an item (Crystal, 1985, p.330). For instance, a learner might wrongly pronounce the word “heart” as [hɜ:rt] just because s/he learned the pronunciation of “learn” as [lɜ:n]. The learner substitutes [ɜ:] whenever s/he sees “ea” vowels together. The second one is insertion. In this error type, the learner wrongly adds one or more extra sounds while uttering a word. To illustrate, the word “studied” [ˈstʌd.iɪd] can wrongly be uttered as [ˈstʌd.iəd] by adding an extra [ə] sound. The third type of these errors is omission. As it is understood by the name, here the learner unnecessarily omits one or more sounds of the word. To exemplify, the word “develop” [dɪˈvel.əp] might wrongly be pronounced as [dɪˈvˈl.əp].

The last and the most significant type of error in terms of the subject-matter of this paper is neutralization. According to Demirezen (2006, p.162), the main reason for EFL learners to have a fossilized error on the pronunciation of [æ] and [ɛ] sounds is that they are not coded in Turkish vowel system. As a result of this, Turkish EFL learners tend to articulate both of these two sounds as [e] vowel sound, the most similar to them in modern standard Turkish. This phonetic process is called neutralization. Berger (2015, p.256) also explicates the neutralization of [æ] and [ɛ] vowel sounds of American English along with four more similar instances. He exemplifies this error type with the words “merry” [ˈmɛəri], “marry” [ˈmæri], and “Mary” [ˈmeəri] in General American pronunciation. In his own Chicago General American speech, these three words are pronounced as [ˈmeri]. [e] is a sound between [æ] and [ɛ]. He describes this situation as phonetically “free variation” and phonemically “neutralization”. He states that this neutralization occurs in Brooklyn as well, but not in most Eastern and Southern parts. In those regions there is no neutralization of [æ] and [ɛ] sounds.

2.3.3. Rehabilitation of Fossilized Pronunciation Errors

So far, the errors have been analyzed from various perspectives regarding their natures, their sources, and their subcategories. And in this section, the nature of fossilization will be explicated firstly. Then, various rehabilitation models will

be listed and discussed. And lastly, the audi-articulation method designed by Demirezen, which is considered as the most appropriate method to rehabilitate the errors of the target audience of this study will be disclosed and discussed in detail.

2.3.3.1. Fossilization

The term “fossilization” was first used by Selinker in 1974, an American linguist, and have created so much debate among linguists up till now. He considers fossilization as the long term persistence of plateaus of non-target-like structures in the interlanguage of non-native speakers. Then he defines it as (of a linguistic form, feature, rule, etc.) to become permanently established in the interlanguage of a second-language learner in a form that is deviant from the target-language norm and that continues to appear in performance regardless of further exposure to the target language. This definition clearly explains what the situation is, but the precise nature of it is not clear yet. We still do not have sufficient evidence on why some certain linguistic structures are fossilized while others are not.

Selinker (1974, p.37) presumes fossilized structures might apparently seem eradicated, yet they still somehow exist in some parts of the brain and are stored by a mechanism for the fossilized structures. Brown (1994, p.180) defines fossilization as “cryogenation” which is a metaphor used in the medicine to freeze the unhealthy parts of the body so that they will not be able to harm the body any more though they are still there. He agrees with Selinker on the fact that fossilized structures are still present there, yet they do not any more effects since they are frozen.

For Demirezen (2005, p.83) fossilized pronunciation is a burden that obstructs pronunciation learning, its improvement, and having native-like fluency while speaking a foreign language. For him, the pronunciation of a foreign language, accuracy and intelligibility have the same crucial roles in the learning process of an EFL learner to be native-like. Accuracy and intelligibility pave the way for fluency, if there happen to be any problems with any one of them, there occurs the establishment of fossilized pronunciation errors. Fossilization is highly stubborn yet not impossible to be rehabilitated. In the following section, some rehabilitation methods for the fossilization problem in pronunciation skill will be analyzed.

2.3.3.2. Rehabilitation Models for the Defossilization of Pronunciation Errors

To teach explicit pronunciation, a specific program should be designed including the components of pronunciation skill such as segmentals including vowels, consonants, diphthongs and suprasegmentals consisting of pitch, stress, intonation, juncture, etc. Unfortunately, in Turkey, even for advanced level EFL learners, an explicit pronunciation education is absent in the curricula. Learners study pronunciation only during reading aloud sessions, or when they make a mistake during their speaking activities, in which mostly they even do not get a proper feedback for their mistakes. The pronunciation teaching should start at the early phases of the learning process. This is called initial teaching method. In this method, grammar structures, vocabulary items are taught together with pronunciation elements regarding them. For instance, while the teacher teaches adjectives and simple present tense, s/he teaches it like “It is a BLUE PEN. Stress element of pronunciation here is taught along with structural syllabus.

Another method is remedial teaching. It basically deals with the problems of individual sounds during the articulation. Hubbard (1983, p.209) divides it into two categories as instant remedial and planned remedial. There are four parts in instant remedial as imitation, demonstration, association, and explanation. In this process, the teacher initially points out the pronunciation of a sound and then asks the learners to imitate him/her. If the learners fail at it, then the teacher makes a demonstration of the sound by showing how to articulate it in detail and slowly.

Furthermore, the sound is associated with another similar sound since some sounds in isolation sometimes may be invisible to notice. And finally, the teacher explains all the details regarding that sound such as the positions of lips, tongue and jaw. Mother tongue explanations are also done here. And if there still remains any trouble with the sound, then a planned remedial is implemented by taking note of the problem sound and designing a lesson plan including many different drills. All of these techniques are useful in teaching pronunciation, yet the most common ones are about testing pronunciation.

Upon stating testing pronunciation, one must not understand only evaluation of the pronunciation skill of the learners in the process. To test the pronunciation

knowledge of the learners, teachers generally implement interviews, conversational exercises, reading aloud activities, and specific tests to listen and choose the correct sound type of exercises. However, these exercises and drills are also commonly used to teach pronunciation. Various different drills are available in Appendix-D which were also implemented in the treatment session of this thesis study.

2.3.3.2.1. Audio-Articulation Method

The audio-articulation method (AAM) was originally designed by Demirezen in 2004 to rehabilitate the pronunciation errors of EFL learners mostly on the segmental level and within a class hour. The method is so comprehensive that it includes the articulatory gestures, various fun games, interaction techniques, audiovisual techniques, and many others such as sound recognition and production activities, acting dialogues through listening, and imitating the native speakers recorded by computer software. Phonetic training is an integral part of the method along with minimal pairs, minimal sentences, tongue twisters, and reading aloud activities from word level to paragraph level. The implementation of this method is described by Demirezen (2005, p.187) in five basic steps.

- 1- Identify the problematic sound of the target language using a diagnostic test.
- 2- Prepare a corpus of at least 50 words.
- 3- Single out minimal pairs from the corpus for practice.
- 4- Develop tongue twisters, idioms, and mottos in chunks for practice.
- 5- Stimulate further awareness and experiential practices within a suitable methodology.

He regards his method as a fossilized pronunciation mistake breaker. It includes both micro and macro listening and speaking activities. It focuses on the discrimination of the sounds. Its ultimate purpose is to correct the fossilized errors and to contribute to the professional pronunciation teaching literature. For the EFL learners, it is an affirmative cognitive feedback model. It helps them be native-like speakers to form intelligible communicational skills. In the treatment session of the experiment of this thesis study, this method was implemented on the learners.

2.3.4. An Evaluation of the Chapter

In the present chapter, a general examination of [æ] and [ɛ] vowel sounds of American English have been carried out. The results of various previous studies have been analyzed in details and indicated in figures and tables. Some characteristic similarities and differences between English vowels and the difficulties experienced by EFL learners from different age groups, study areas, and nationalities have been revealed.

Furthermore, an in depth analysis of North American English vowels and Turkish vowels has been carried out. The segmental features of these two languages were the subject-matter of this chapter. Additionally, a comparison of them has been made to shed light on the reader to understand how Turkish EFL learners recognize the North American English vowels.

Finally, the history of teaching pronunciation, the significance of the explicit teaching of the pronunciation skill, various factors affecting pronunciation, types and sources of phonetic errors in English, rehabilitation of fossilized pronunciation errors, the definition of fossilization, different defossilization methods, and audio-articulation method were analyzed and explicated.

CHAPTER 3

METHODOLOGY

3.1. An Overview of the Chapter

The ultimate objective of this study is to investigate the recognition of North American English Vowels by Turkish EFL learners who major in Translation and Interpreting Studies and English Language and Literature Departments. In this chapter, the setting of the study, participants, instruments, data collection procedure, the analysis of the collected data, and at last an evaluation of the chapter will be carried out in depth.

3.2. Setting

The research was conducted at a foundation university in Ankara, Turkey in the spring term of 2019-2020 academic year. The students of two different departments took place in the study. Both of these departments were at the same faculty and had very similar programmes. There were even some mutual courses. The school was suitable for a research like this one due to its high technological equipment and adequate number of population. The school provided the learners with Moodle program, a virtual education software, and Zoom, an application for online education, in which all of the teachers and students had already been enrolled. The passwords, classroom numbers, and the meeting details which were necessary to use these programmes were all shared by class instructors with the researcher.

This study might have been conducted during a traditional schooling, yet due to Covid-19 pandemic lived through at the time of the study, it was carried out via online schooling. Therefore, the classrooms were virtual classrooms arranged as Zoom sessions. For the two-hour treatment training between the pre-test and post-test implementations, two different Zoom meetings were arranged in different times. With a two-week interval, the participants took the pre-test and post-test. The questions in the pre-test and the ones in the post-test were precisely the same. Google Forms application was used for the implementation of these tests. Participants answered the questions online by using their personal computers, tablets, or smart phones connected to the internet.

3. 3. Participants

This study was conducted with 57 undergraduate EFL learners who majored in the Departments of Language and Literature and English Translation and Interpreting Studies in Ankara/Turkey. There were students from all grades as freshmen, 2nd grade, 3rd grade and the 4th grade. The mother tongue of all students were Turkish, thus they were all non-native learners. They were all acquainted with American English since the classroom medium of both departments are 100% English. 36% of all participants were males while 64% were females. In philology departments such as linguistics, language teaching, literature, cultural studies or translation in Turkey, the population of females tend to be much more than males. The participants were chosen completely randomly through a general announcement made on Moodle and Google Classroom platforms, and only volunteer students attended it. The following figures are designed by the author of this research. The first one indicates the gender distribution of the participants.

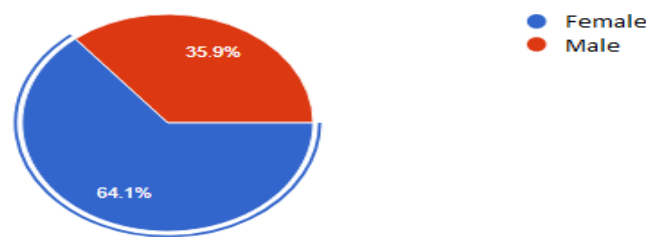


Figure 9. Gender distribution of the participants.

The ages of the participants varied from 19 to 25. And the majority of the population was between 19 and 23. The diagram showing the birth years of the participants designed by the researcher of the present study is as in Figure 10.

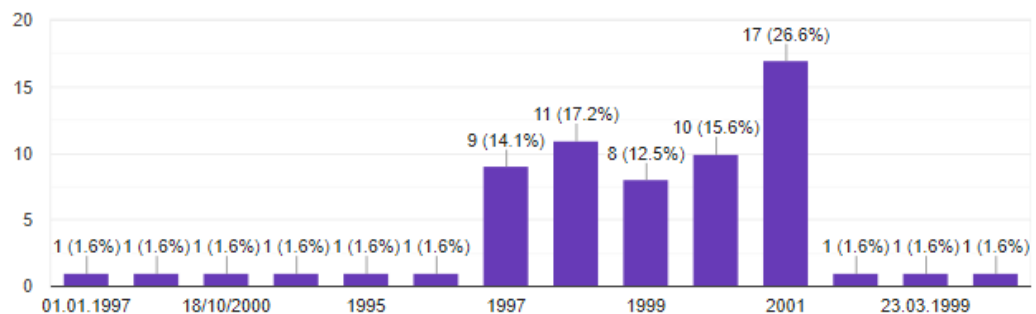


Figure 10. The years of birth of the participants.

Students' overall scores in the university entrance exam to be accepted to these departments were very close to each other, so there was not much difference between the academic backgrounds of the students of these two departments. 47 % of all the participants were majoring in English Language and Literature Department while this percentage was 53% for Translation and Interpreting Studies Department of the same university.

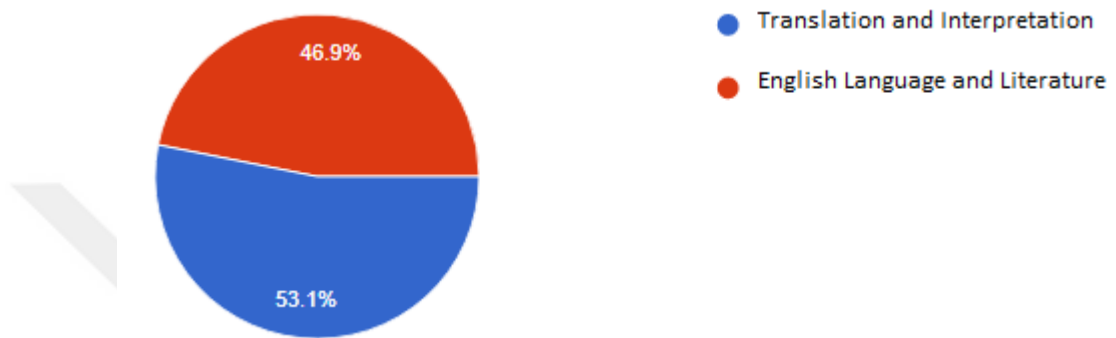


Figure 11. The categorization of the participants in terms of their departments.

The years of their studying experience at the faculty is another reference in this study since the participants' university education experience varied from the 1st grade to 4th grade. The majority of the participants were freshmen students studying the 1st grade as 59 %. And the second largest population was 4th grade senior students as 28%.

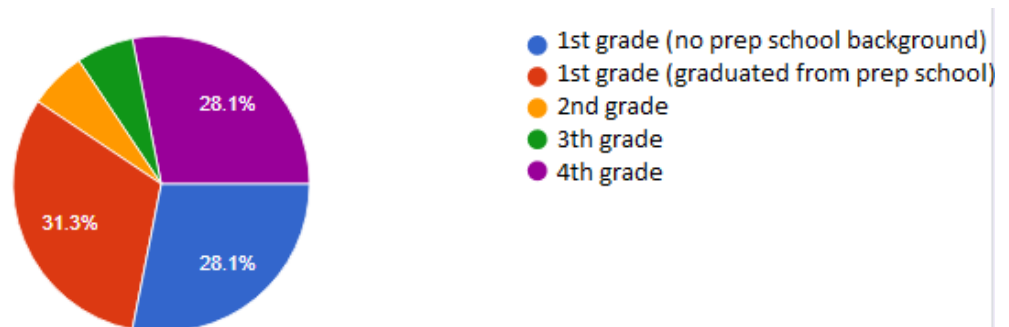


Figure 12. The years of university education experience of the participants.

The other demographic information taken from the participants was on whether they had taken a phonetics, phonology or pronunciation course and if yes, whether it was a must or an elective course. The responses of the participants indicated that a great majority of the learners in these two departments had not taken any of these courses before. 92% of them had never taken a course teaching explicit pronunciation, and 6% percent had taken as elective course, and only 2 percent had taken an explicit pronunciation education in a must course as they are indicated in Figure 13.

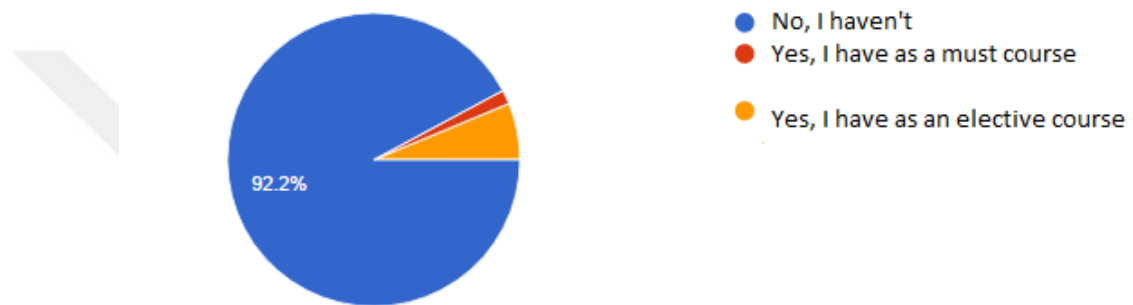


Figure 13. The percentage of the participants having taken a course teaching pronunciation before.

In the demographic information part, the participants were also asked how frequently they looked up the correct pronunciation of a new vocabulary item in the dictionary. The responses collected through a likert scale as percentages were as in Figure 14.

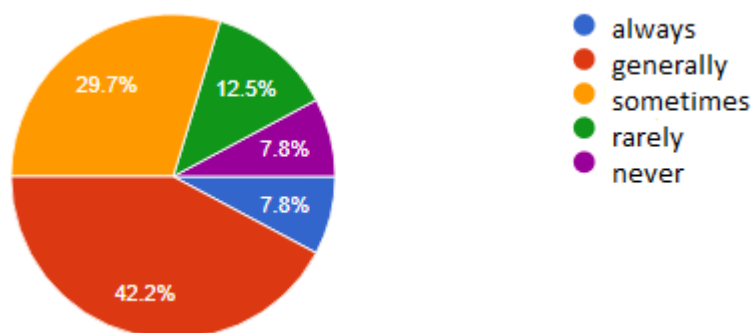


Figure 14. The frequency of participants' checking the correct pronunciation of the new vocabulary items in the dictionary.

The other information obtained via the demographic questions in the pre-test from was about their perception on the importance of correct pronunciation in the communication. A great deal of participants appreciated the value of correct pronunciation and being a native-like speaker to be able to carry out an intelligible communication. According to their responses, 90 % of them understood the importance of correct pronunciation of the words as EFL learners. None of the participants considered the correct pronunciation as insignificant as it can be seen in Figure 15.

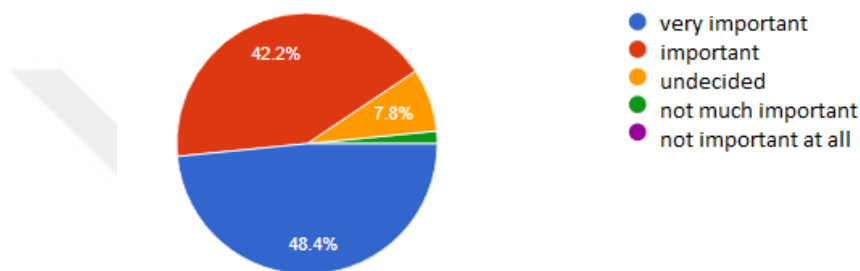


Figure 15. The perception of the participants on the importance of the correct pronunciation of words during a conversation.

The other data gathered from the participants indicate the self-perception of the participants' own pronunciation skills. Only 5% of the participants regarded themselves as very proficient while 40% perceived themselves as having good pronunciation skills, and 51% saw themselves as moderate, and 2% of them considered themselves with bad pronunciation skills as it is apparent in Figure 16.

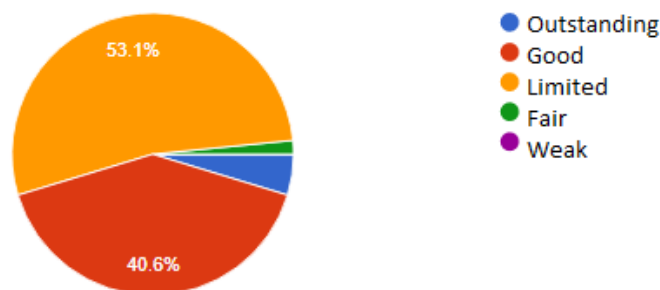


Figure 16. The participants' self-perceptions on their pronunciation skills.

Finally, the participants were asked if they were IPA literate or not. That's to say, when they looked up the pronunciation of a word in the dictionary, could they understand the symbols in the IPA transcriptions of the words there? The participants were not much informant about the IPA as pointed out in Figure 17.

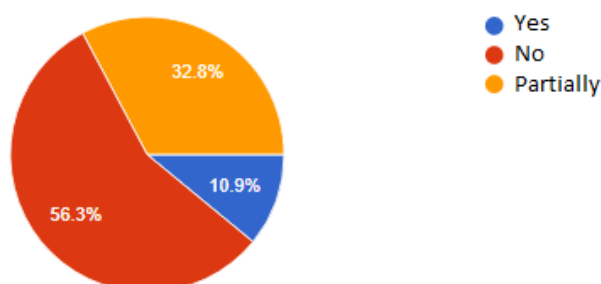


Figure 17. The percentage of the participants' IPA literacy.

3.4. Instruments

There were two instruments used during the study to test the participants' recognition of the [æ] and [ɛ] sounds of North American English. The first one was a demographic form given before the pre-test as a Google Forms document, and the second one was a forty-question multiple-choice written recognition test on [æ] and [ɛ] vowels. In the demographic form, the data about the participants' gender, age, majors, the years spent in the department, background education about pronunciation, interest in it, habits of checking the IPA transcription from the dictionary while learning a new vocabulary item, perception on the significance of having good pronunciation skills, self-perception on the proficiency of pronunciation, and knowledge about IPA were present.

3.4.1. The Recognition Test

After the demographic data were gathered from the participants, the written recognition test was given to the students. The questions in the pre-test and the post-test were exactly the same since the purpose of the present study was to identify whether there would be a significant increase in the participants' recognition level after the treatment session or not. The test was handed out as an online form. The

participants first filled in a consent form proving that they participated in the study fully voluntarily.

The test has 8 different parts in each of which there are 5 questions so 40 questions in total. The order of the questions is significant, so they cannot be juggled randomly. The first 20 questions test their recognition level for the [æ] vowel sound of English. And the last 20 test their perceptual knowledge on [ɛ] vowel sound. The number of the items are equal.

The questions between 1-5 have tri- or quadro- syllabic words including one correct option which has only one [æ] sound in it. The questions between 6-10 are poly-syllabic words (including five or more syllables) and again the correct option has one [æ] sound in it. In the next part of the test, the questions between 11-15 test the participants' recognition of two occurrences of [æ] sound in three/four syllable words. In questions between 16-20, the testees are to find the correct answer which has two occurrences of [æ] sound in poly-syllabic words.

The same system is adjusted for the [ɛ] sound. The questions between 21-25 are comprised of tri- or quadro- syllabic words including only one [ɛ] sound. The next five questions from 26 to 30 have one [ɛ] sound in poly-syllabic words in the options. And the last two parts have two occurrences of [ɛ] sound. Questions 31-35 have only one correct option with two occurrences of [ɛ] sound in three or four syllable words, and questions from 36 to 40 are comprised of poly-syllabic options including one correct answer with two occurrences of [ɛ] sound.

In the selection of test items, a corpus study was made. The corpus frequency, daily usage and academic usage of the words were all taken into consideration while preparing the test items. All of the participants were B2+ and upper levels, and the difficulty of the test items were determined as B2 level, so there would not be any disturbance about the validity and reliability of the study. All of the vocabulary items were chosen from the coursebooks of the compulsory courses of these two departments and in accordance with their frequencies. The lowest frequency limit was determined as 3000 in the selection process of the vocabulary items. All of the vowels used in this study were checked in COCA

(American English Corpus from <http://corpus.byu.edu/coca/>). Table 4 shows the items determined as the correct answers in the test with their corpus frequencies.

Table 4

Corpus Items of the Recognition Test with Their Frequencies

Vowel [æ]	One occurrence of [æ] sound	Corpus Frequency	Two occurrences of [æ] sound	Corpus Frequency
Tri-quadro-syllabic vocabulary items	language	7383	abstraction	16349
	programmer	3060	satisfaction	21415
	systematic	11114	handicap	3110
	abandon	11331	transnational	3175
	transforming	11217	amsterdam	4685
Poly-syllabic vocabulary items	disestablishment	22396	nationality	3320
	psychiatrically	3896	maladaptively	5352
	spirituality	6375	fantasitically	23690
	traumatically	15662	advantageously	55679
	manageability	3034	manufacturer	10971
Vowel [ɛ]	One occurrence of [ɛ] sound	Corpus Frequency	Two occurrences of [ɛ] sound	Corpus Frequency
Tri-quadro-syllabic vocabulary items	attempting	62464	expectation	10124
	nonetheless	17589	elemental	31415
	tremendous	117124	excessively	12263
	unfriendly	27552	presidential	61352
	succession	6210	sentimental	61352
Poly-syllabic vocabulary items	immeasurable	64156	developmental	12436
	indelicate	22466	representative	31253
	inevitable	17368	unnecessarily	44688
	subjectivity	9907	existentialism	3414
	theoretically	5211	experimentally	19835

A pilot study was conducted on 8 English Instructors of the same university to determine the difficulty level and the applicability of the test. The views of them and three experts from English Linguistics and English Language Teaching Departments as two professors and one doctor were taken into consideration. In accordance with the feedback obtained from them, the test items were revised and modified.

In case of the possibility that some participants might not know the symbols for the sounds in the question, two short videos (one for each) describing the vowels in the questions were presented to the participants at the beginning of the online survey. The video included the description of the sounds with their symbols and example words including those vowel sounds. The numbers of the correct choices were distributed randomly in each section with an equal amount for each.

3.5. Training with Audio-Articulation Method

With regard to the subject matter of this study, AAM was thought to be the most appropriate teaching method to be adopted and implemented on the participants. Accordingly, a 40-minute lesson plan was designed by using Power Point Presentation. The name of the lesson was “The Teaching of the Correct Pronunciation of [æ] and [ɛ] Phonemes in English via Distance Education.” The lessons were given by the researcher himself in two different time periods since a lesson with almost 60 participants in the same class would not have been adequately efficient. The researcher divided the group into two sections according to their departments so that the participants would feel themselves more secure among their peers.

Two 40-minute lessons were implemented on each group on two subsequent days through Zoom meetings. The participants were already using that virtual classroom for their own classes, so they did not have any difficulty in participating into the lesson. The class teachers started the Zoom session and left it to the researcher. The researcher first started with warm-up activities and introducing himself to them to soften the atmosphere and stated the aim of the lesson.

Then the pronunciation coach introduced the phonemes under question. Subsequently, a diagnostic test was implemented on the participants to take their attention on the mispronounced phonemes. Then the participants listened to the correct pronunciation of the words in the corpus prepared for the lesson by a tape-recorder which played the sounds that native speakers had recorded with the help of an application. The name of the application is “From Text to Speech.” It is an online application that the users do not have to download, they just text the word on the pop-up page and choose five alternative native speakers to utter that word.

For the recording of the words in the corpus, different native speakers were chosen since diversity of the accents was regarded as a positive contribution to be models for the learners. Later those recordings were downloaded as mp3 format and converted into vaw format so that they could be embedded in the PPT document more easily. The corpus frequencies of the words were found out in COCA website, the link of which is <https://www.english-corpora.org/coca/>. In this website, a user can check at most 50 words to see their frequency in a day, so it took several days for the researcher to complete checking the entire list.

Writing the phonetic transcriptions, Longman and Cambridge dictionaries were made use of. For the “r” sound, American [ɹ] symbol was coded in the transcription. As for the [ɛ] sound, they were written manually since these two online dictionaries do not have [ɛ] symbol in their online transcription. First the corpus of [ɛ] sound was presented, and then the [æ] sound was seen. The participants listened to the pronunciation of the words uttered by native speakers and then repeated after them both in group and individually.

After the presentation of corpus, minimal pair activities were done with a lot of fun by the participants. A sample pair of pictures describing the meaning of the word was given next to each minimal pair, and the participants listened to distinguish between the two sounds there. The list of minimal pairs is given in Table 5, and a few samples for minimal pairs are given in Figure 18 below. The complete list of the visuals for the minimal pairs in the list below can be seen in Appendix-D.

Table 5

The List of Minimal Pairs Prepared for the Treatment Session

[ɛ]	[æ]	[ɛ]	[æ]
men [mɛn]	man [mæn]	pest [pɛst]	past [pæst]
bet [bɛt]	bat [bæt]	merry [mɛ.ri]	marry [mæ.ri]
dead [dɛd]	dad [dæd]	lend [lɛnd]	land [lænd]
gem [dʒɛm]	jam [dʒæm]	send [sɛnd]	sand [sænd]
bread [brɛd]	Brad [bræd]	guess [gɛs]	gas [gæs]
less [lɛs]	lass [læs]	tech [tɛk]	tack [tæk]
beg [bɛg]	bag [bæg]	vet [vɛt]	vat [væt]
ten [tɛn]	tan [tæn]	vest [vɛst]	vast [væst]
pen [pɛn]	pan [pæn]	slept [slɛpt]	slapped [slæpt]
Beth [Bɛθ]	bath [bæθ]	said [sɛd]	sad [sæd]
bed [bɛd]	bad [bæd]	flesh [flɛʃ]	flash [flæʃ]




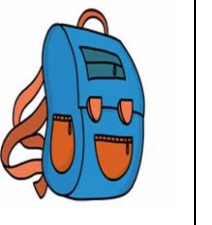



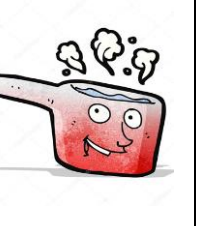
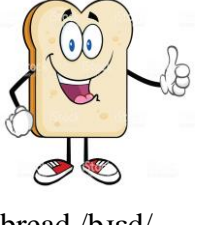


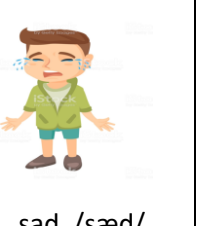
 bet /bɛt/	VS	 bat /bæt/	 beg /bɛg/	VS	 bag /bæg/
 bed /bɛd/	VS	 bad /bæd/	 pen /pɛn/	VS	 pan /pæn/
 bread /brɛd/	VS	 Brad /bræd/	 said /sɛd/	VS	 sad /sæd/

Figure 18. Minimal pair samples with visuals from the treatment PPT.

Upon completing minimal pair exercise, another fun activity including tongue twisters was done by the participants. Again, they first listened to the sound recording and then repeated after that. The learners were supposed to utter the tongue twisters at the same pace with the recording. A couple of sample tongue twisters are as follows.

A man

Beth

A man went

Sad Beth

A man went near the men

Sad Beth had a bath

*A man went near the men to meet
them.*

*Sad Beth had a bath and rested on a
bad bed*

At the end of this fun activity, the teacher gave the rule of articulating these two sounds. First, he explained the North American Vowel chart along with making the linguistic definitions of them. He showed the participants the positioning of those two sounds in comparison by means of visuals such as pictures and YouTube videos. After making the theoretical and the practical summaries of the linguistic part, the teacher had the participants play a game on Kahoot website. In that game, the participants listened to the utterances of these sounds in a random order and a swift way, then they attempted to choose the correct alternative from the four-item multiple choice test by using their smartphones.

Completing this fun and basic activities, more complicated activities were provided to the participants. The first one of them was minimal sentences such as

“BAD dog! Get off the BED!”,

then minimal pairs were given them with contextual clues in another exercise like

“A **MAN/MEN** appeared suddenly behind the window.”

Going through these sentence level exercises, paragraph level exercises were implemented. This took a while to solve by using the contextual clues. And finally, the learners read dialogues including the target sounds and acted them as a role play activity. The teacher made the overall summary and finished the lesson.

3.6. Data Collection Procedure

In this study, the data were collected through a pre-test and a post-test. Both of the tests were implemented online via Google Forms. The links of the tests were shared in three different platforms as Google Classroom of the participants, the Moodle Classes that they were enrolled, and their WhatsApp classroom groups. The procedure of the implementation of all data collection process is indicated in Table 6.

Table 6

The Procedure of Collecting Data

STAGES	INSTRUMENTS	HOW TO APPLY
STAGE 1.1. (Pre-test)	Consent form and demographic information form	Via a link to Google Document
STAGE 1.2.	Written test	40-question written multiple choice test
STAGE 1.3.	Assessment- evaluation of the inputs	SPSS 25 (Statistical Package for the Social Sciences)
STAGE 1.4.	A practice and teaching for 2 lesson hours for each group	Slides, exercise, realias, dialogues, passages, games, idioms etc.
STAGE 1.5.	2 weeks break to prevent interference	-
STAGE 2.1. (Post-test)	The same written test	40-question written multiple choice test
STAGE 2.2.	An overall assessment and evaluation of the inputs	SPSS 25 (Statistical Package for the Social Sciences), Excel, TAP (Test Analysis Program)

Prior to answering the questions in the pre-test, the participants saw the consent form informing them about the details on confidentiality, the implementation details and the purpose of the study. The consent form clearly stated that the participation into the study was completely voluntary, and they could withdraw from the study at any time they would wish without mentioning any reasons. Those who did not click on the button to accept the terms and conditions of the form could not proceed to the test in the online document.

After clicking on the accept button, the participants responded to the questions in a demographic information form including personal questions that were necessary to know for the efficiency of this study. The questions were indicated in the previous section (about their age, educational background, their knowledge about IPA transcription, etc.) As the third step, the participants watched a short video describing the sounds under question and answered 40 questions, the details of which have been stated in the previous sections of the present study. A week later from the implementation of pre-test, two-hour training sessions for each group were conducted on two subsequent days, a week later from each implementation for the pre-test.

The first stage of the study was gathering data from the pre-test. The second step was the implementation of audio-articulation method on the participants to cure the pronunciation problems of them. Without any single problem, the treatment sessions were completed within the previously determined days. The appropriate meeting time which was suitable for each of the participants were discussed for hours with the students and by taking their weekly lesson allocations into account, a mutual time was arranged. 5 participants who took the pre-test could not or did not participate in the treatment sessions. 69 participants took the pre-test, and only 64 of them were in the online training session. And 57 of them later answered the post-test.

And two weeks later, the post-test link was shared, and the meeting time got arranged to compare the results of the pre-test and the post-test to see if there was any improvement. 60 participants completed the post-test. 3 of them had not attended the treatment sessions, so their post-test results were not taken into

consideration in the analysis. After getting the data from post-test, all of the input collected were first converted into 1 and 0 matrix on the Excel program and then evaluated and assessed by SPSS program to find quantitative results. All the tables in the SPSS were taken from there and copied to a Word document to answer each research question of the present research.

3.7. Data Analysis

The process of data analysis started with converting the results of Google Forms Document into an Excel document. Then all of the input entered into the Excel document were converted into “1” and “0” matrix in the Excel form. “1” refers to correct and “0” refers to the wrong answer for each question so that a quantitative data could be obtained. To facilitate that, an Excel formulation was developed and implemented together with the answer key on the Excel documents.

Later those inputs were entered into SPSS program to apply Paired Samples T-Test, since the experiment was a pre-test and post-test design, to get the correlation, the mean, standard deviation, and calculated ETA squared statistical values. As the last step, TAP (Testing Analysis Program) was made use of so as to find KR20 and KR21 values to see the internal consistency of both of the tests separately. All of the forms were investigated one by one in order to compare whether the pre-test responses and the post-test responses of the same students match or not through their email addresses as a second check. 3 post-test forms were detected as not having participated into the pre-test, so they got extracted.

3.8. The Evaluation of the Chapter

In this chapter, the explicit and detailed information about the setting the research took place, the information obtained by the demographic form about the participants who voluntarily took part in the experiment, all of the instruments made use of, the details about the tests that were used, the teaching method in the training sessions, how the data were collected, and through which assessment tools they were analyzed were given clearly. Therefore, Chapter 5 was rounded up with the evaluation of the part here.

CHAPTER 4

RESULTS AND DISCUSSION

4.1. An Overview of the Chapter

This chapter will provide the reader with a clear picture of the results obtained via the instruments mentioned in the previous section and a detailed discussion of these results. This is a quantitative research; therefore, the discussion will be done through the tables indicating the numerical data and percentages. These tables were derived from the results' responses to the research questions of the current study. As a result, the findings will be analyzed and discussed through the tables by paying special attention to what have been discussed throughout the present research.

4.2. Internal Consistency of the Instrument (KR20)

This section will indicate the KR20 results of the pre-test and the post-test to be interpreted with an aim to see whether both of the tests are reliable in terms of their mean item difficulty, mean discrimination index, and their Alpha values. Later the participants' scores in the pre-test and post-test will be compared to see if there is any development at all, and if yes, whether it is significant or not. Via KR20, the internal consistency of the test items has been worked on individually, and since KR21 gives just an overall assessment of the test, it has not been needed.

Table 7

KR20 Values of the Written Pre-test Scores

Number of Items Analyzed	= 40
Mean Item Difficulty	= 0,376
Mean Discrimination Index	= 0,424
KR20 (Alpha)	= 0,884
High Grp Min Score (n=16)	= 17,000
Low Grp Max Score (n=17)	= 10,000

Table 8

KR20 Values of the Written Post-test Scores

Number of Items Analyzed	= 40
Mean Item Difficulty	= 0,601
Mean Discrimination Index	= 0,545
KR20 (Alpha)	= 0,897
High Grp Min Score (n=15)	= 31,000
Low Grp Max Score (n=15)	= 16,000

These findings show that both of the tests' internal validity is quite high.

4.3. Research Question 1: Is There a Meaningful Difference between the Pre-test and the Post-test Results?

Paired-Samples T-Test has been applied to the pretest (PE) and posttest (PO) scores of the recognition test. It has been found out that there has been a statistically significant increase between pre-test (M = 15.05, SD = 7.961) and post-test (M = 24.04, SD = 8.590); $T(56) = -8.031$, $P < .001$ (2-tailed). Average increase in the recognition test has been 8.982 and the values have 95% confidence interval of the difference between the values 11.223 and 6.742. calculated ETA squared statistics is (.54) as indicated a great impact as seen in Table 9.

Table 9

Paired Samples T-Test for Pre-Test and Post-Test Scores

	Mean	Std. Deviation	Paired Differences		t	df	Sig. (2-tailed)		
			Mean	Std. Error				95% Confidence Interval of the Difference	
								Lower	Upper
Pair 1 PE TOTAL - PO TOTAL	-8,982	8,444	1,118		-8,031	56	,000		

There is one main instrument to collect the data and it has been used both in pretest and posttest, and each test will be taken into consideration both individually and contrastively. Prior to conducting these tests, achievement level (cut points) for the tests had been adopted to define what was successful. This adopted scoring system was taken from the participants' evaluation forms, which they took as undergraduate students, located at the back page of their official GPA transcripts provided by their faculty. According to this table, cut point is 60 out of 100. So if the participants get higher than 60 in the tests, they are considered as successful.

Table 10

Success Level Scores for the Recognition Tests

Course Grade	Grade Point	100-point system (%)	Status
AA	4,00	(90-100)	Pass
BA	3,50	(85-89)	Pass
BB	3,00	(80-84)	Pass
CB	2,50	(70-79)	Pass
CC	2,00	(60-69)	Pass
DC	1,50	(50-59)	(Conditional Pass)
DD	1,00	(45-49)	(Conditional Pass)
FD	0,50	(35-44)	Fail
FF	0,00	(00-34)	Fail

(Retrieved from the website of the participants' university, 2020)

4. 4. Research Question 2: What is the Success Percentage of Overall Perception of [æ] and [ɛ] Sounds?

Table 11

The Overall Pre-test and Post-test Scores of the Participants

	Mean (40 pts)	N	Std. Deviation	Std. Error Mean	Grade Percentages
PE TOTAL	15,05	57	7,961	1,054	37,6
PO TOTAL	24,04	57	8,590	1,138	60,1

The table above gives us the information about the mean value, standard deviation, standard error mean, and the percentages of the total correct answers of the participants in each test. The total success mean in the pre-test is 15,05 out of 40 which corresponds to 37,6 grade percent. This indicates FD letter grade. When these numerical scores are interpreted in accordance with the assessment scales of the participants' departments, the pre-test scores were "fail" status as 37,6% and the post-test score is 24,04 out of 40, corresponding to 60,1%, the status of which is "pass". This corresponds to CC letter grade.

The recognition level of the participants prior to the treatment sessions were quite low. And in comparisons with this pre-test score, the overall recognition level of them was considerably higher. There may be many reasons for this situation. Most participants were not even familiar with the difference between the [æ] and [ɛ] sounds of North American English. They had not paid any attention between these two sounds and even were not aware that there could be serious meaning differences on occasion of the mispronunciation of these two sounds.

The "neutralization" problem was on the stage. The participants recognized both of the sounds as [e] sound like in Turkish. Consonants and vowels of a second language are mostly considered through the first language sound system. Consequently, challenges in the recognition of second language sounds occur. The participants who had not taken any pronunciation class before had more difficulty in the pre-test. As it is seen in the results, the participants majoring in English Language and Literature got lower scores in the pre-test than the ones in Translation and Interpreting Studies Department. During the treatment sessions, some of the participants from English Language and Literature Department verbally mentioned their enthusiasm to notice the difference between [æ] and [ɛ] sounds by adding that they had never realized this distinction before and could not even predict what changes in the meaning they might lead to.

4.5. Research Question 3: What is the Rate of Success in the Single Perception of the [æ] Sound?

The answer for this question can be found in the questions from 1 to 10. Upon looking at the frequencies of the correct answered questions and the

descriptive statistics, a discussion on each result will be made in this part. The frequency of the correct questions between 1 and 10 are as in Figures 19-20.

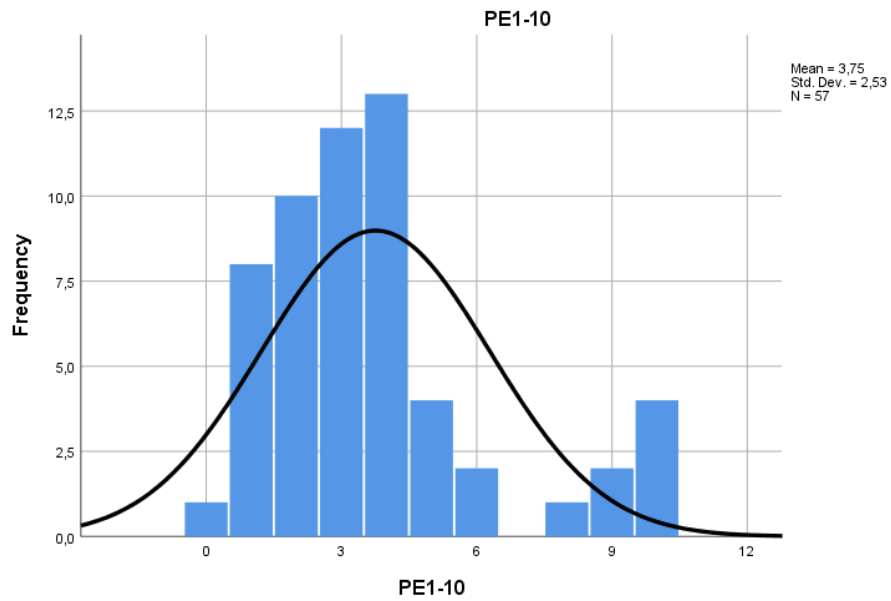


Figure 19. The frequency of the correct answers for the questions between 1 and 10 in the pre-test

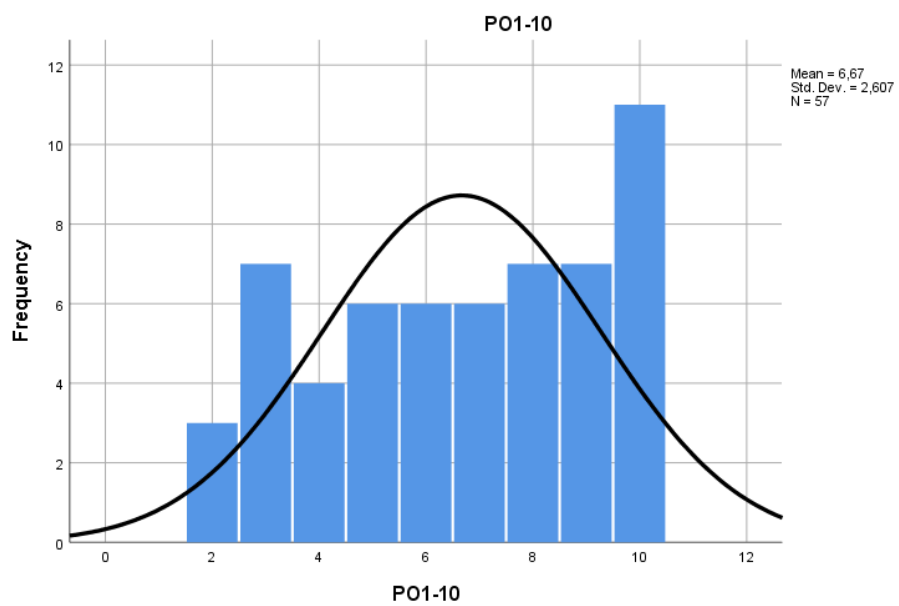


Figure 20. The frequency of the correct answers for the questions between 1 and 10 in the post-test.

As it has been indicated in the bar chart histograms above, in the pre-test, the density of the population is around the low scores, yet in the post-test, it is around medium and high scores. These results represent that most of the participants increased their scores in almost symmetrical distribution. Thus, there is normal curve here.

Table 12

The Descriptive Statistics of the Correct Answers for the Questions between 1 and 10 in the Pre-test and the Post-test

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Percentage
PE1-10	57	0	10	3,75	2,530	%37,5
PO1-10	57	2	10	6,67	2,607	%66,7

The first ten questions assess the recognition of the participants on the [æ] sound. The first five questions in this part include one occurrence of [æ] sound in tri- and quadro-syllabic words, and between the questions 6 and 10, there are poly-syllabic words with one occurrence of [æ] sound. The number of participants is 57. The first five questions include three or four syllables, and the average of the correct answers for these five questions is 23,2 out of 57. The next five questions (Q6-Q10) include five or six syllables, and the average of the correct answers for these questions is 19,6. That means the participants had more difficulty in finding the correct sound in poly-syllabic words in terms of the items including only one occurrence of [æ] sound. The percentage of the correct answers is 37,5% in the pre-test and 66,7% in the post-test. That increase after the treatment session is significant as it can be seen on Tables 12-13. Therefore, we can deduce that for this part, the treatment session was quite successful. The implementation of audio-articulation method helped the participants recognize the sounds better. Regarding the answers of the 57 participants, the reader might look at Table 13 below to see the numbers of correct answers for each item, their difficulty levels, discrimination index, and the number of the correct answers according to the pre-test results.

Table 13

TAP Results for the Questions 1-10

Item	Number Correct (out of 57) (PE & PO)	Item Difficulty (PE & PO)	Discrimination Index (PE & PO)
Item 01	24 – 44	0,42 – 0,77	0,51 – 0,60
Item 02	20 – 39	0,35 – 0,68	0,45 – 0,40
Item 03	30 – 38	0,53 – 0,84	0,51 – 0,33
Item 04	27 – 39	0,47 – 0,68	0,21 – 0,53
Item 05	15 – 32	0,26 – 0,56	0,44 – 0,80
Item 06	16 – 35	0,28 – 0,61	0,57 – 0,87
Item 07	20 - 39	0,35 – 0,68	0,27 – 0,33
Item 08	17 – 29	0,30 – 0,51	0,26 – 0,73
Item 09	13 – 37	0,23 – 0,65	0,44 – 0,53
Item 10	32 - 38	0,56 – 0,67	0,28 – 0,67

As for the post-test results, the average number of the participants choosing the correct options for the questions between 1 and 5, including only one occurrence of the words consisting three or four syllables, is 33,28 out of 57. As for those between 6 and 10, it is 35,6 out of 57. This is quite interesting since prior to the treatment session, the participants had more difficulty in answering the questions including the poly-syllabic words. However, after the training, they did better in the first five questions than the ones with poly-syllabic words. There seems no problem with the item difficulties and discrimination index. In terms of the syllable amount, there seems no significant difference between the two groups of items as tri- or quadro-syllabic words and poly-syllable words.

4.6. Research Question 4: What is the Rate of Success in the Perception of the Two [æ] Sounds?

The answer for this question can be found in the questions from 11 to 20. The frequency of the correct questions between 11 and 20 are as they are in the Figures 21-22.

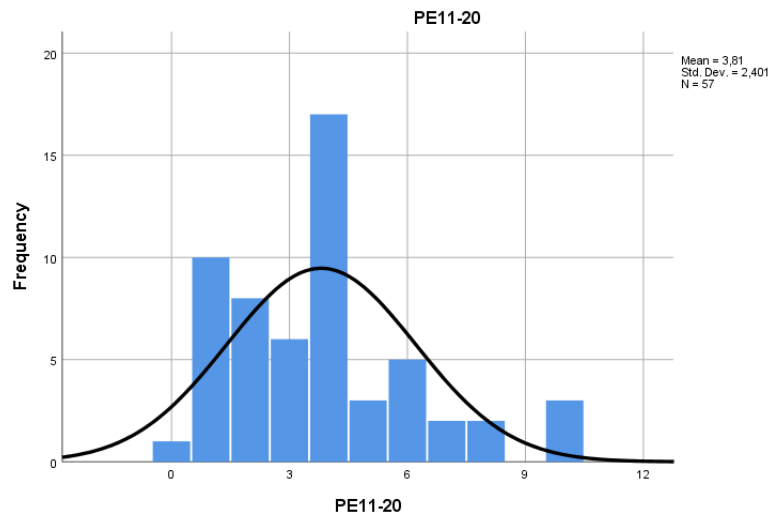


Figure 21. The frequency of the correct answers for the questions between 11 and 20 in the pre-test.

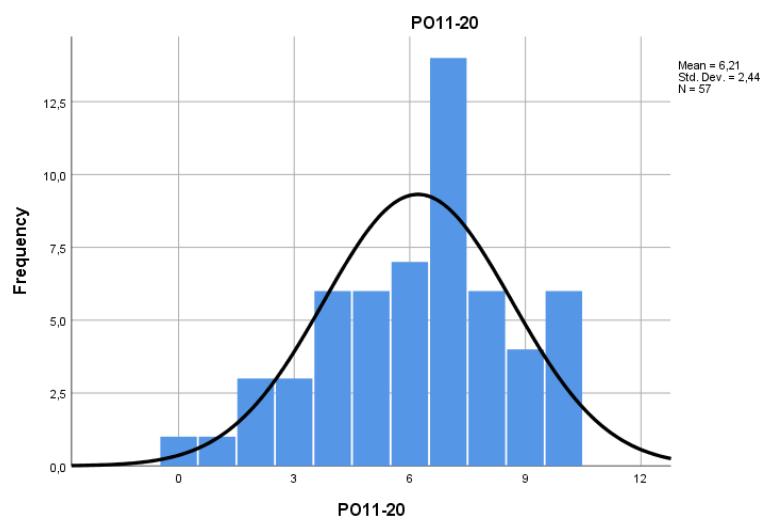


Figure 22. The frequency of the correct answers for the questions between 11 and 20 in the post-test.

As they have been indicated in the bar chart histograms above, in the pre-test, the density of the population is around the low scores, yet in the post-test, it is around medium and high scores. These results represent that most of the participants increased their scores in almost symmetrical distribution. Thus, there is normal curve here, too.

Table 14

The Descriptive Statistics of the Correct Answers for the Questions between 11 and 20 in the Pre-test and the Post-test

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Percentage
PE11-20	57	0	10	3,81	2,401	%38,1
PO11-20	57	0	10	6,21	2,440	%62,1

As it can be seen in Table 14, the questions 11-20 tested the participants' recognition of the two occurrences of [æ] sound. The mean value has been found 3,81 in the pre-test and 6,21 in the post-test. The standard deviations are almost the same in the tests as 2,401 and 2,440. The percentage of the correct answers for this part was 38,1% in the pre-test and 62,1 in the post-test. This development is highly adequate since it conveys the participants from "fail" level to "pass" level. Their average course grades became CC from FD. Table 15 shows the individual results.

Table 15

TAP Results for the Questions 11-20

Item	Number Correct (out of 57)	Item Difficulty	Discrimination Index
Item 11	28 – 37	0,49 – 0,65	0,70 – 0,67
Item 12	24 – 36	0,42 – 0,63	0,46 – 0,73
Item 13	24 – 36	0,42 – 0,63	0,45 – 0,27
Item 14	13 – 27	0,23 – 0,47	0,26 – 0,60
Item 15	21 – 41	0,37 – 0,72	0,76 – 0,47

Item 16	15 – 37	0,26 – 0,65	0,44 – 0,47
Item 17	15 - 31	0,26 – 0,54	0,38 – 0,33
Item 18	23 – 35	0,40 – 0,61	0,57 – 0,33
Item 19	29 – 37	0,51 – 0,65	0,39 – 0,40
Item 20	25 - 37	0,44 – 0,65	0,39 – 0,60

In this part of the test, the questions between 11 and 15 include the words with three or four syllables, and the items from 16 to 20 are comprised of poly-syllabic words. The average number of correct answers for Q11-15 is 22 out of 57 in the pre-test and 35,4 out of 57 in the post-test. These numbers are 21,4 out of 57 in the pre-test and 35,4 out of 57 in the post-test. There is a significant increase between the pre-test and post-test scores, yet in terms of the syllable amount, there is no difference at all. The scores of the participants according to the syllable number are almost equal between the parts including tri- or quadro-syllabic and poly-syllabic words. There seems no problem with the item difficulties and discrimination index.

4.7. Research Question 5: What is the Rate of Success in the Single Perception of the [ɛ] Sound?

The answer for this question can be found in the questions from 21 to 30. The frequency of the correct questions between 21 and 30 are as in Figures 23-24.

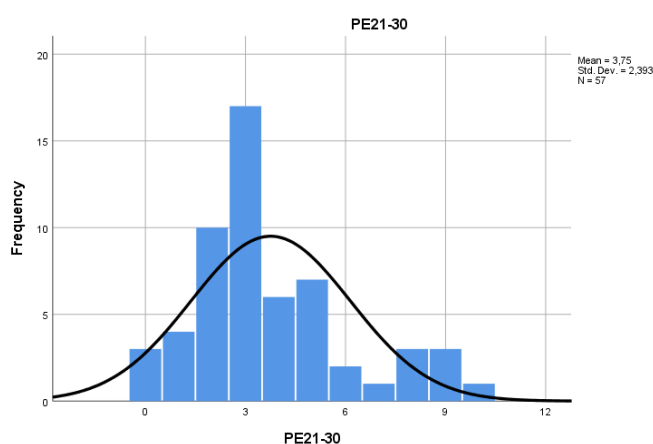


Figure 23. The frequency of the correct answers for the questions between 21 and 30 in the pre-test.

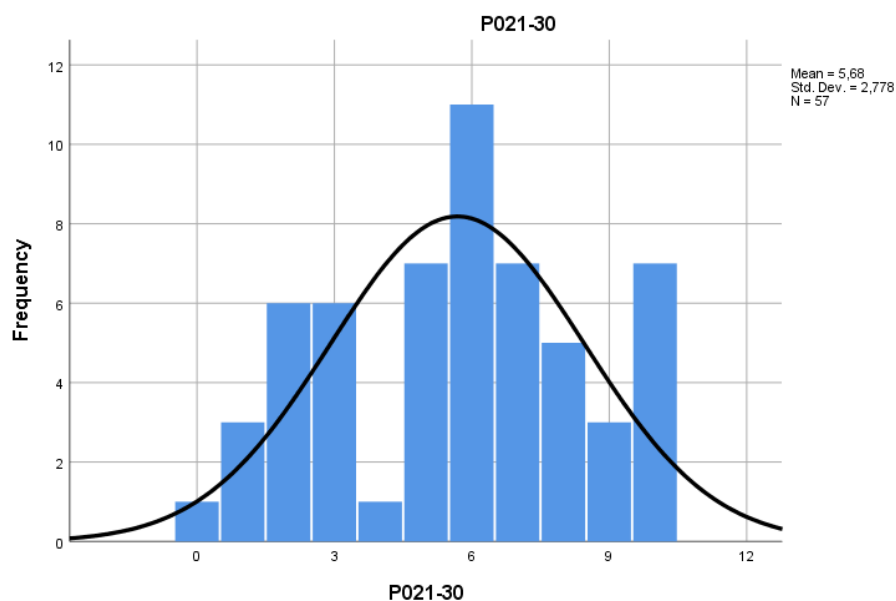


Figure 24. The frequency of the correct answers for the questions between 21 and 30 in the post-test.

As they have been indicated in the bar chart histograms above, in the pre-test, the density of the population is around the low scores, yet in the post-test, it is around medium and high scores. These results represent that most of the participants increased their scores in almost symmetrical distribution. Thus, there is a normal curve here, too.

Table 16

The Descriptive Statistics of the Correct Answers for the Questions between 21 and 30 in the Pre-test and the Post-test

Descriptive Statistics							
	N	Minimum	Maximum	Mean	Std. Deviation	Percentage	
PE21-30	57	0	10	3,75	2,393	%37,5	
P021-30	57	0	10	5,68	2,778	%56,8	

In the questions between 21 and 30, the participants were to recognize one occurrence of [ε] sound. The mean value has been found 3,75 in the pre-test and

5,68 in the post-test. There was a difference between the standard deviations in the tests as 2,393 and 2,778. According to these findings, the percentage of the correct answers for this part was 37,5% in the pre-test, and it became 56,8 in the post-test. This development is highly adequate since it gets the participants from the “fail” level to “conditional pass” level in their evaluation system. Their average course grades became DC from FD. To analyze the test items individually, Table 17 can be examined.

Table 17

TAP Results for the Questions 21-30

Item	Number Correct (out of 57)	Item Difficulty	Discrimination Index
Item 21	38 – 38	0,67 – 0,67	0,52 – 0,40
Item 22	08 – 32	0,14 – 0,56	0,25 – 0,93
Item 23	28 – 36	0,49 – 0,63	0,58 – 0,67
Item 24	31 – 40	0,54 – 0,70	0,46 – 0,53
Item 25	15 – 30	0,26 – 0,53	0,69 – 0,73
Item 26	14 – 23	0,25 – 0,40	0,32 – 0,67
Item 27	17 – 22	0,30 – 0,39	0,26 – 0,53
Item 28	25 – 36	0,44 – 0,63	0,39 – 0,60
Item 29	25 – 42	0,44 – 0,74	0,45 – 0,40
Item 30	13 – 25	0,23 – 0,44	0,39 – 0,67

In this part of the test, the questions between 21 and 25 include the words with three or four syllables including one occurrence of [ε] sound, and items from 26 to 30 are comprised of poly-syllabic words with one occurrence of [ε] sound. The average number of correct answers for Q21-25 is 24 out of 57 in the pre-test and 35,2 out of 57 in the post-test. These numbers are 18,8 out of 57 in the pre-test and 29,6 out of 57 in the post-test. There is a significant increase between the pre-test and post-test scores, and also in terms of the syllable numbers, there is a significant difference. The scores of the participants according to the syllable

amount are quite different between tri- and quadro-syllabic and poly-syllabic parts. It seems like the participants had more difficulty in finding the [ε] sound in poly-syllabic words. There seems no problem with the item difficulties and discrimination index.

4.8. Research Question 6: What is the Rate of Success in the Perception of the Two [ε] Sounds?

The answer for this question can be found in the questions from 11 to 20. The frequency of the correct answers for the questions 11-20 are as in Figures 25-26.

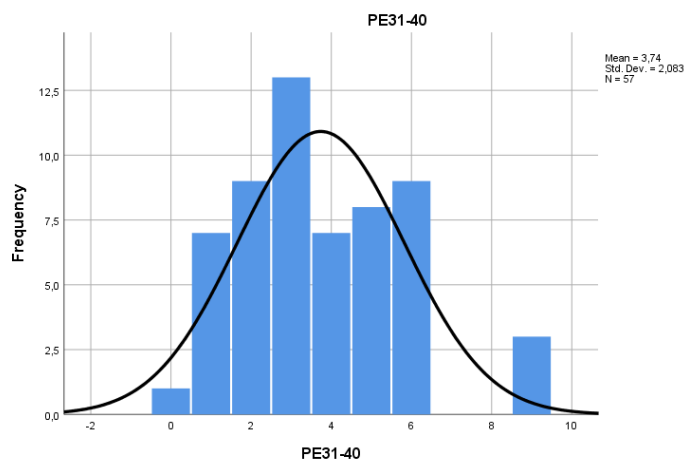


Figure 25. The frequency of the correct answers for the questions between 31 and 40 in the pre-test.

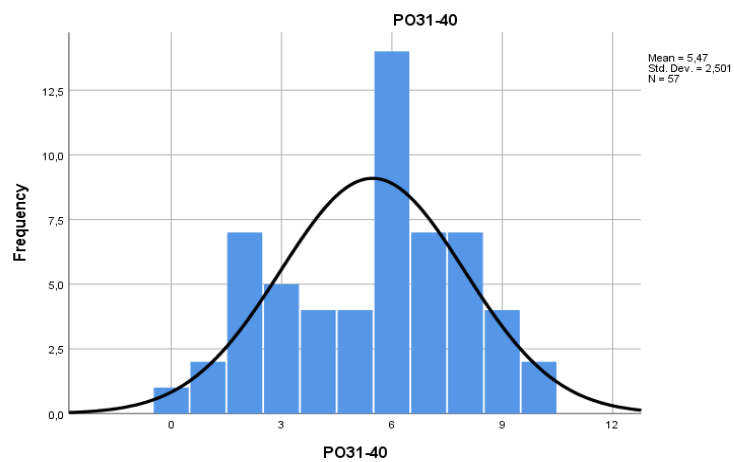


Figure 26. The frequency of the correct answers for the questions between 31 and 40 in the post-test.

As they have been indicated in the figures above, in the pre-test, the density of the population is around the low scores, yet in the post-test, it is around medium and high scores. These results represent that most of the participants increased their scores in almost symmetrical distribution. Thus, there is normal curve here, too.

Table 18

The Descriptive Statistics of the Correct Answers for the Questions between 31 and 40 in the Pre-test and the Post-test

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Percentage
PE31-40	57	0	9	3,74	2,083	%37,4
PO31-40	57	0	10	5,47	2,501	%54,7

In the questions between 31 and 40, the participants were asked to recognize two occurrences of [ε] sound. The mean value has been found 3,74 in the pre-test and 5,47 in the post-test. There was a difference between the standard deviations in the tests as 2,083 and 2,501. According to these findings, the percentage of the correct answers for this part was 37,4% in the pre-test, and it became 54,7 in the post-test. This development is highly adequate since it gets the participants from the “fail” level to “conditional pass” level in their course evaluation system. Their average course grades became DC from FD. To analyze the test items individually, Table 19 can be examined.

Table 19

TAP Results for the Questions 31-40

Item	Number Correct (out of 57)	Item Difficulty	Discrimination Index
Item 31	48 – 46	0,84 – 0,81	0,24 – 0,33
Item 32	22 – 38	0,39 – 0,67	0,51 – 0,60
Item 33	29 – 34	0,51 – 0,60	0,46 – 0,40
Item 34	15 – 25	0,26 – 0,44	0,63 – 0,60
Item 35	18 – 34	0,32 – 0,60	0,57 – 0,73

Item 36	09 – 22	0,16 – 0,39	0,19 – 0,47
Item 37	25 – 27	0,44 – 0,47	0,51 – 0,53
Item 38	18 – 31	0,32 – 0,54	0,04 – 0,47
Item 39	14 – 25	0,25 – 0,44	0,32 – 0,40
Item 40	15 – 30	0,26 – 0,53	0,50 – 0,47

In this part of the test, the questions between 31 and 35 include the words with three or four syllables including two occurrences of [ɛ] sound, and items from 36 to 40 are comprised of poly-syllabic words with two occurrences of [ɛ] sound. The average number of correct answers for Q31-35 is 26,4 out of 57 in the pre-test and 35,4 out of 57 in the post-test. These numbers are 16,2 out of 57 in the pre-test and 27,0 out of 57 in the post-test. There is a significant increase between the pre-test and post-test scores, and also in terms of the syllable numbers, there is a significant difference. The scores of the participants according to the syllable amount are quite different between the parts consisting of tri- and quadro-syllabic and poly-syllabic words. It seems like the participants had more difficulty in finding the [ɛ] sound in poly-syllabic words. There seems no problem with the item difficulties and discrimination index.

4.9. Research Question 7: Do the Participants Need a Further Treatment?

The main purpose of the treatment was to raise participants' awareness and increase their level of recognition on the [æ] and [ɛ] sounds. To fulfill this aim, audio-articulation method was implemented. This method is originally designed for a 40-minute lesson hour. Taking the crowded population of the participants into account, the researcher himself carried out 2 lesson hours of treatment sessions to reach at each individual in the group. This method does not only equip the participants with theoretical information about the sounds under question, but it also provides them with a lot of opportunities to practice those sounds. Various activities used during the treatment session were performed individually, in pairs and in groups. When the number of the participants are almost 30 in each session, an 80-minute lesson plan was more than adequate as it can be inferred from the Table 20.

Table 20

Descriptive Statistics for the Sections as Individual and Overall

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Percentage
PE1-10	57	0	10	3,75	2,530	%37,5
PO1-10	57	2	10	6,67	2,607	%66,7
PE11-20	57	0	10	3,81	2,401	%38,1
PO11-20	57	0	10	6,21	2,440	%62,1
PE21-30	57	0	10	3,75	2,393	%37,5
PO21-30	57	0	10	5,68	2,778	%56,8
PE31-40	57	0	9	3,74	2,083	%37,4
PO31-40	57	0	10	5,47	2,501	%54,7
PE TOTAL	57	5	38	15,05	7,961	%37,6
PO TOTAL	57	8	40	24,04	8,590	%60,1

The mean values in the table are out of 40 points. Their percentage correspondences are 37,6 in the pre-test and 60,1 in the post-test. Upon considering the assessment scales of the participants' departments, 37,6 is a "fail" grade with FD letter and 60,1 is a "pass" grade with CC. This score might even be better if there were more time allocation for more treatment sessions, yet the researcher presumes teaching the other sounds could improve their recognition level better than only focusing on these two sounds.

To illustrate, the participants were highly confused about the usage of schwa sound [ə] in the first syllable. For example, in the word "according", the participants chose the wrong option by assuming that it is [æ] sound in the first syllable rather than [ə] sound. Therefore, instead of teaching these sounds again and again, the teaching of other vowel sounds can improve their recognition more. As for the errors on the recognition of [ɛ] sound, the participants mostly were confused when "e" letter was in the first syllable of the word. For example, they recognized the word "extremely" [ɪk'stri:m.li] as [ɛ k'stri:m.li], so they chose it by assuming that it was the correct answer including the [ɛ] sound.

4.10. Research Question 8: What is the General Success of Literature Students & Translation Students?

This research question aims at finding the answer for the question how Literature students and Translation students scored in the pre-test and post-test. Tables 21-22 given below indicate the scores of each group individually and in a comparison.

Table 21

Group Statistics in terms of Departments

	DEPARTMENT	N	Mean	Std. Deviation	Std. Error Mean
Pre-Test	1	24	30,625	14,0312	2,8641
	2	33	42,727	22,0915	3,8456
Post-Test	1	24	61,979	15,9309	3,2519
	2	33	58,712	24,8992	4,3344

Table 22

Independent Samples Test: Levene's Test for Equality of Variances

		F	Sig.	t	df	Sig. (2-tailed)
Pre-Test	Equal variances assumed	4,434	,040	-2,357	55	,022
	Equal variances not assumed			-2,524	54,161	,015
Post-Test	Equal variances assumed	11,857	,001	,564	55	,575
	Equal variances not assumed			,603	54,249	,549

An independent-samples t-test was conducted to compare pre-test scores of students of Translation and Interpreting Studies and English Language and Literature. Firstly, the homogeneity of the groups was determined by Levene's test; it indicated unequal variances ($F = 4.43$, $p = .040$), so degrees of freedom were adjusted from 55 to 54,161. Next, based on the independent-samples t-test

conducted, there was a significant difference in the pre-test scores in English Language and Literature Department ($M = 30.63$, $SD = 14.03$) and the students in Translation and Interpreting Studies Department ($M = 42.73$, $SD = 22.09$); $t(54.16) = -2.52$, $p = 0.15$. Translation and Interpreting Studies Department students' scores were statistically significantly higher than ELL's score. These results suggest that ELL students needed treatment more than TINS students. Their success percentage in the pre-test was 30% whereas this number for TINS students was 43%.

An independent-samples t-test was conducted to compare post-test scores of students of Translation and Interpreting Studies and English Language and Literature. To begin with, the homogeneity of the groups was determined by Levene's test; it indicated unequal variances ($F = 11.86$, $p = .001$), so degrees of freedom were adjusted from 55 to 54,25. Next, based on the independent-samples t-test conducted, there wasn't a significant difference in the post-test scores in English Language and Literature Department ($M = 61.98$, $SD = 15.93$) and the students in Translation and Interpreting Studies Department ($M = 58.71$, $SD = 24.90$); $t(54.25) = .60$, $p = .549$. Translation and Interpreting Studies Department students' scores were statistically significantly higher than ELL's score. These results suggest that after the treatment, both of the groups got almost the same scores. ELL students did 62% while TINS students did 59%. ELL students' scores were much lower than TINS students' scores in the pre-test, yet in the post-test they even did slightly better than TINS students.

4.11. An Evaluation of the Chapter

In Chapter 4, the data collected from the recognition tests as pre-test and post-test have been evaluated by using SPSS program. The lowest and the highest sections of the tests were commented on. The correlations between the pre-test and post-test were seen. Finally, the chapter was wrapped up with an evaluation section.

CHAPTER 5

CONCLUSION

5.1. An Evaluation of the Chapter

This chapter is the final part of the study. It gives the summary of all the foregoing sections. These topics will be discussed respectively: Implications and suggestions for the study, implications and suggestions for future studies, pedagogical implications, the limitations of the study, and an evaluation of the chapter.

5.2. The Summary of the Study

Pronunciation has always been a matter of discussion and become a problem for EFL learners. Apart from the four fundamental skills as reading, writing, listening and speaking, the three main subskills as grammar, vocabulary and pronunciation happen to be the cornerstone of communication. Nevertheless, throughout all the history of language teaching, pronunciation has been neglected more in comparison with grammar and vocabulary. Only during some specific periods like the one when Audio-lingual Method was popular, pronunciation teaching received the attention it deserved.

This thesis only focuses on two vowel phonemes, yet it can be a role model for future studies on the other segmental units such as the other vowels, consonants, long vowels, or diphthongs. Current approaches pay much attention to the intelligibility of the communication, and it is impossible to obtain without a proper pronunciation of the sounds. Even accuracy depends on it since a very simple mistake of pronunciation can completely change the meaning of the utterance. Similarly, it is also in the background stage of the fluency. A learner continuously breaks the conversation with bad pronunciation, and if it is continuous, the listener might well quit following the speaker.

If the main concern is efficient communication, then an accurate pronunciation is a must for the speaker. The main objective of the study is to find

out the level of recognition of the [æ] and [ɛ] vowel sounds of North American English by the undergraduate students of TINS and ELL Departments. These groups of learners were chosen as the testees since learning the English language thoroughly is their major engagement as students there. Students from other departments might see it just as a tool, so they might not give adequate attention. The lesson plan, test items, the difficulty of the items were all designed by taking those testees into consideration. A quantitative research method was applied to collect the data from the testees with a recognition test and a demographic form. The following research questions have guided the study:

Research Question 1: Is there a meaningful difference between the pre-test and post-test results?

Research Question 2: What is the success percentage of overall perception of [æ] and [ɛ] sounds?

Research Question 3: What is the rate of success in the single perception of the [æ] sound?

Research Question 4: What is the rate of success in the perception of the two [æ] sounds?

Research Question 5: What is the rate of success in the single perception of the [ɛ] sound?

Research Question 6: What is the rate of success in the perception of the two [ɛ] sounds?

Research Question 7: Do the participants need a further treatment?

Research Question 8: What is the general success of Literature students & Translation students?

The participants of the study were 57 undergraduate students of English Language and Literature Department and Translation and Interpreting Studies

Department of a university in Ankara, Turkey. They all voluntarily participated in the study. The study was conducted in the spring term of 2019-2020 academic year in 3 weeks. At the beginning, the participants were given a pretest and a demographic form. One week later, they took treatment session. And two weeks after that, they took the same test as a post-test.

The instrument was a recognition test, which was approved by two different professors and one assistant professor. In accordance with their views, it was adapted and modified. The items of the test included only the words from the participants' course books. The corpus frequencies of the items were higher than 3000. The frequency statistics were obtained from COCA (Corpus of Contemporary American English). That's to say, the most frequently used vocabulary was chosen for the study conducted.

The data collected by the participants were analyzed via an online software 'TAP (Test Analysis Program)' and SPSS (a statistic package program) version 25. Through the TAP software, the numerical data was processed to see the internal consistency, difficulty level, and the discrimination index of the instrument. There was not a single problem in terms of these issues. The items 22, 36, and 38 were found not very discriminative, yet they were all within the borders of validity. TAP software is used due to its being a practical program to test the internal consistency of the instrument and to see the KR20 values regarding the instrument.

Through KR20 the test items were analyzed individually. There was no need for KR21 since it gives only the overall results, yet it was also administered anyway for a double check. TAP also gave the researcher the results about how many participants answered which items correctly. The items answered correctly by the low group and high group were also obtained via the program, yet they were not needed since the research questions of the thesis seek for the overall input as results.

By means of SPSS 25 program, paired samples statistics, paired samples correlations, paired samples test, descriptive statistics, frequency charts for each section as 1-10, 11-20, 21-30, and 31-40, and correlations for them were processed and received as tables. The input for all of these processes which had already been entered into Excel forms with the help of specific formulations were withdrawn

from the Google Forms shared by the participants. Only quantitative data were taken into consideration in the study.

The first implemented test was the written recognition test. After the data gathered from that test and evaluated, treatment sessions were applied for both of the groups in two subsequent days. The first group was comprised of Translation and Interpreting Studies students, and the second group encompassed the students of English Language and Literature Department. For the first group, the instructor of the students arranged a meeting on Zoom and invited the researcher and left the class alone with him.

The application of the treatment session was quite practical thanks to the instructor of the participants from TINS Department. However, for the ELL group, the researcher himself created a WhatsApp group to gather all the participants from that department and invited them to a Zoom meeting arranged by himself where he was logged in with his own account. In both of the groups, the researcher welcomed by the participants, and the class atmosphere was quite positive. The participants voluntarily, willingly, and eagerly participated in the activities during the treatment sessions. Some of the participants even emailed to the researcher to state their willingness to join any future studies like that one if they are planned to be.

This positive class atmosphere reflected on the results as well. 37,6% achievement score of the pre-test climbed up to 60,1 in the post-test after the treatment within two weeks. The FD 'fail' status of the participant according to their assessment scale turned into CC 'pass' status which means that there happened a meaningful and significant difference between the pre-test and the post-test results.

According to the results of the tests, the improvement observed in the section on [æ] sound was larger than the improvement of [ɛ] sound. The success percentage for the [æ] sound as one occurrence and two occurrences was 37,5 and 38,1 in the pre-test whereas they are 66,7 and 62,1 in the post-test. In terms of the comparison between the one occurrence of the [æ] sound and two occurrences of the [æ] sound, the development after the treatment is bigger in the former. In other

words, after the treatment session the participants recognized one occurrence of [æ] sound more easily than the two occurrences of it.

As for the [ɛ] sound, the success percentage for its one occurrence and two occurrences were 37,5 and 37,4, which means almost the same in the pre-test. However, in the post-test, they turned into 56,8 and 54,7 respectively. Here again in these sections including [ɛ] sound, the participants recognized the one occurrence of [ɛ] sound more easily than they did for the two occurrences of it. From these results, we can conclude that the participants had more difficulty when the number of the occurrence of the sound increased.

This does not mean that the more syllable number there is, the more difficult it is to recognize the sounds in the word since the inner values did not show this consequence. All of the sections were also analyzed in terms of their syllable number such as items 1-5 are tri- and quadro-syllabic, whereas items 6-10 are polysyllabic. When internal parts of these sections were analyzed, we did not have any evidence to support that syllable number affected the recognition level.

To wrap up, the highest success of the participants in the post-test after the treatment was in the first section (items 1-10) with a percentage of 66,7. The second highest achievement was in the second section (items 11-20) with 62,1 percent. The third highest success was in the third section (items 21-30) with a score of 56,8%. And the lowest score was in the final section (items 31-40) with a percentage of 54,7. Thus, the success rate diminished from the beginning to the end of the test. This casts a doubt into the researcher's mind concerning the probability that the participants got tired through the end of the test. In another study, the places of the questions can be changed to test this hypothesis to see if there are any effects of it. All in all, the recognition of [ɛ] sound was more challenging for the participants than the [æ] sound. And when the number of occurrences increased, it became more challenging respectively for each vowel sound.

Demirezen named this recognition problem for Turkish learners for [æ] and [ɛ] sounds as neutralization. According to the results of this study, Turkish learners neutralize the [ɛ] sound more than they do for the [æ] sound. The reason for this might be that [æ] sound is more distinctive for the Turkish learners. [ɛ] sound is

very similar to Turkish [e] sound. Hence, the distinction between the [ɛ] sound and the [e] sound can disappear more easily in the recognition level. In the production level, it might be just the opposite. However, in this study, it was not analyzed. Therefore, it is just a hypothesis which may shed light on further studies.

In the great debate between the linguistics scholars on whether the similar L2 sounds or the different L2 sounds to the L1 are more challenging for the EFL learners, the former group seems to be more sound. When the sound in the new language is similar to the one in the mother tongue, it happens to be more challenging for the learners, whereas the orthographic differences might be more significant factors in the articulation level.

Orthographic differences might hinder learners from articulating the vowels accurately if they were tested. The interference of the mother tongue was apparent in the results of this study. Deconstructing the fossilized errors caused by the interference of the mother tongue can be harder than doing it for the relatively newer sounds. The learners tend to perceive the sounds as the ones in the mother tongue. There is a strong inclination to L1 habits. Flege and Port's assumption was that if the L1 and L2 are different, then grasping the new sounds will be more difficult. This argument was refuted by this study.

No one can deny that it is really hard to rehabilitate the fossilized errors in pronunciation after a certain age, yet this study proves that it is still possible to cure them at a considerably sufficient level with the application of audio-articulation method. The learners get informed about their errors, raise an awareness, learn the rules and theoretical information and do many repetitive activities to reach a fluent, accurate and intelligible level of communication. Hearing the native sounds is crucial at this stage so that they can be native-like.

A comparison between the achievement level of the two different groups in terms of the departments of the participants was also made in this study as a quantitative input. According to the results, there was not much difference observed between these two groups in the post-test. The learners of the Translation and Interpreting Studies Department were more aware of these vowel sounds in the pre-test, yet in the post-test, they were almost equal. The standard teaching in the

treatment session might be a reason for that. It can be deduced from this point that no matter what the participants' background was, they all did equally after getting the same education.

5.3. Implications and Suggestions for Future Studies

This study was conducted only with Translation and Interpreting Studies students and English Language and Literature students at one foundation university. The scope of the study could be extended to other philology departments in Turkey such as linguistics, American culture and literature, and ELT in both state and other foundation universities. It may even be conducted on English teachers in MONE (Ministry of National Education) and English instructors at universities so that the results can be generalized for the learners from other institutions and education levels. Nonetheless, there might be some handicaps such as the unwillingness of the teachers or instructors with the fear of feeling humiliated in case it appears that they have so much fossilized errors or due to not being able to have a chance to allocate extra time in their programmes for these studies. These factors should be carefully taken into consideration before starting to conduct a study.

The number of the participants in the study was 57, which is quite enough for a quantitative study like this, yet more participation could give the researcher more reliable results. However, implementing the same treatment for all the groups would be more difficult if the number were increased. A control group and experimental group design study could have been conducted, yet the researcher assumed that it was clear the experimental group would do a higher score than the control group. Also there would be some ethical problems regarding this issue. Having two different syllabi for the students at the same university would not be fair.

The researcher conducted a pilot study on some of his colleagues to see the difficulty of the test items and to test the validity of it. However, since the objective of this study was not designing a new instrument, it was just mentioned and not elaborated on the 5th chapter. The approval of three experts was considered adequate. In a newer study, the difficulty and the discrimination index levels of this

instrument can be taken into consideration, and it can be adopted and revised accordingly to apply on some other participants.

Since further allowance was necessary to record a video of the treatment session and keeping the idea that the participants could be more anxious when they knew that they were being recorded, the treatment sessions on Zoom meetings were not recorded. Nevertheless, the PPT document of the session is present in Appendix-D.

The correlation between the participants' ages, genders, educational backgrounds, and attitudes towards phonetics were not taken into consideration, in a future study, they might be paid more attention. The reason for not analyzing them in detail is that the study might leave the borders of its subject-matter, and new research questions would be needed. In a PhD dissertation, they all might be analyzed in detail.

5.4. Pedagogical Implications

So far it has been emphasized that the audio-articulation method is an effective way to solve the problem of fossilized pronunciation errors of the EFL learners. Nevertheless, there is one point that should not be ignored, which is the teacher's effectiveness in implementing the method. For some English teachers and even some instructors at universities, teaching pronunciation might be a great challenge because of many reasons depending on the specific traits of their target audience. To illustrate an orthographic case, teaching American [l] consonant in the final-syllable position to Japanese learners could be a big challenge for the language teacher since Japanese tend to articulate [l] sound as [r] sound in English. Hence, the language teacher should know the target audience well before taking up this duty. Another example is about Arabic learners of English. There are four different correspondences in Arabic language to the English [h] consonant sound, and this case can be a real challenge for a foreigner.

Furthermore, there are psychological factors from both the teachers' perspectives and the learners' perspectives. Learners can be reluctant to study pronunciation because of some ideas such that they will not need to use it in their

daily life, or they might be lack of some perceptual skills, or they can just be uninterested in speaking at all. Therefore, only with the help of pedagogical capabilities, a teacher can overcome these problems. The learners must first feel the necessity to learn it, then they open their perceptions to absorb the information. The teacher must pay special attention to the individual differences of the learners. Each student might have a different problem in making a peculiar pronunciation mistake that must be able to be observed by the teacher so that s/he can pay special attention to fix it.

Some countries may not have given any special attention to the speaking skill during their 12-year MONE education, so changing this perception might be a real challenge for the instructor at the university since those learners might have been felt that only grammar and vocabulary subskills are important. Or because the pronunciation skill has never been tested at all during this process, the learners might well develop a bias as if it did not have any significance in their learning process. Their high school teachers might have always skipped the pronunciation parts in the coursebook by stating that those parts were not very useful or they did not have any time for those studies. The researcher of the present study calls this situation ‘fossilized perception’. Breaking this fossilized perception can be a great revolutionary challenge.

On the other hand, the teachers are fully loaded with many responsibilities, and if the pronunciation skill has not been inserted into the syllabus or curriculum of them to follow, then they may not find enough time and energy to spare for that. What is more, some teachers may not feel themselves competent enough to teach pronunciation since they have not been taught how to do it before. They might have problems with their own pronunciation skill or with how to teach it. First, the teachers themselves should feel ready so that they can encourage the learners.

After graduation, many teachers are loaded with too much teaching hours, and they may not find any chance for their own professional developments such as participating in in-service trainings or graduate studies. These kinds of efforts may not be supported by their institutions. Consequently, the pedagogical implications are a series of a whole. Each unit depends on the others and can make a difference

on the whole if they are willing enough. Learners, teachers, institutions, organizations, governments, and the language itself and the culture that has bond to, and the members of the society are all integral parts of one unique system. A teacher must be able to act as a mediator among these separate agents.

5.5. Limitations of the Study

The purpose of this study is to reveal the recognition level of TINS and ELL students on [æ] and [ɛ] vowel sounds of English. All the research questions have been answered in the study, and the results of the study are quite satisfactory, yet there might be some limitations regarding them. There are six main categories of limitations considered by the researcher.

The first one is about the sample size and area. Although having 57 participants is considered sufficient for this kind of an experiment, the results might not be enough to make a generalization. The experiment was conducted at only one university, so it may not be generalized to the all nation. With some other participants at different ages, from different backgrounds and areas, different results could have been obtained.

Another limitation is about its being online. Some learners might be face-to-face type of learners. Furthermore, the participation could have been much more in a traditional class. Some students might have experienced some technological problems to connect to the online class. This might be the reason for the case that the participation in the pre-test was a little more than it was in the treatment session.

One other limitation closely connected to the previous one is that the researcher was a foreigner to the participants. If their own instructors had conducted the study, they could have got different results since they knew them better than the researcher did. The pedagogical implementation of the audio-articulation method might have been better off. The class instructor might have taken the individual differences of the learners into account more efficiently. Or the participants might have felt more relaxed and symphatetic towards the session.

Not only were they not acquainted with the researcher, but also they were foreigner to the some of the other participants. The participants were from the same department but from different grades and classes. The freshmen, juniors and seniors took all together part in the treatment session. Due to this reason, there might have been some psychological barriers for some of them. Some of them might not have been used to being in this kind of an educational environment.

The last and the most significant limitation for the researcher can be about the instrument. The instrument was a test focusing on only [æ] and [ɛ] sounds by its nature. However, the participants in the treatment session were observed as making mistakes just because they also did not know the other vowel sounds of English. The most distinctive one was about the ‘schwa’ sound. The participants generally had much difficulty especially if the ‘schwa’ sound was in the primary position of the word. They tended to pronounce it as [æ] sound. Thus, if the learners had previously studied ‘schwa’ sound, their results could have been much better. Similarly, they mostly tended to articulate [ɪ] and [i] sounds as [ɛ] sound. Therefore, teaching all the other vowels would have probably increased the quality of testing and teaching of the pronunciation skill. Moreover, the results of the test were inclined to decrease through the end of it. The researcher assumes the reason for this situation is owing to the tiredness of the testees since they did 40 questions without giving any breaks. They might just have been tired, or they might have had some concentration problems.

5.6. An Evaluation of the Chapter

This conclusion part is the last chapter of the study. The topics taking place in this chapter are as follows: An overview of the chapter, the summary of the study, implications and suggestions for the study, implications and suggestions for future studies, pedagogical implications and the limitations of the study.

REFERENCES

- Akyol, T. (2012). A study on identifying pronunciation learning strategies of Turkish EFL learners. *Procedia -Social and Behavioral Sciences*,70, 1456 – 1462.
- Baker, A. & Goldstein, S. (2008), *Pronunciation Pairs: An introductory Course for Students of English*, Cambridge: Cambridge University Press.
- Balpınar, Z. (2011). *Turkish phonology, morphology and syntax*. Anadolu Üniversitesi. Eskişehir, Turkey.
- Barry, W. J. (1989). Perception and production of English vowels by German learners: Instrumental phonetic support in language teaching. *Phonetica: International Journal of Speech Sounds*. 46(4), 155-168.
- Berger, M. D. (1949) Neutralization in American English Vowels, *WORD*, 5:3, 255-257, DOI: 10.1080/00437956.1949.11659357.
- Bhela, B. (1999). Native language interference in learning a second language: Exploratory case studies of native language interference with target language usage. *International Education Journal*, 1(1), 22-31.

Bley-Vroman, R. (1989). What is the logical problem of foreign language learning? In S. Gass and J. Schachter (eds) *Linguistic Perspectives on Second Language Acquisition* (pp. 41–68). Cambridge, UK: Cambridge University Press.

Brière, J. E. (1966). An investigation of phonological interference. *Language*, 42(4) 768–796.

Boberg, C. (2015). North American English. *The Handbook of English Pronunciation*, 227–250. doi:10.1002/9781118346952.ch13.

Brown, A. (Ed.) (1991). *Teaching English Pronunciation*. London: Routledge.

Butcher, A. (1995). The phonetics of neutralization: The case of Australian coronals. *Studies in English and general phonetics: Essays in honour of J.D. O'Connor*.

Cambridge Dictionary of American English. (2000). New York: Cambridge University Press.

Celce-Murcia, M. Brinton, D. M., Goodwin, J. M. (2008). *Teaching Pronunciation. A reference for teachers of English to speakers of other languages*. Cambridge, UK: Cambridge University Press.

Chomsky, N. A. & Halle, M.(1968) *The sound pattern of English*. New York: Harper & Row.

- Cohen, A. (1971). The Phonemes of English. doi:10.1007/978-94-010-2969-8.
- Cohen, A. (1971). The Vowel Phonemes of English. *The Phonemes of English*, 75-107. doi:10.1007/978-94-010-2969-8_4.
- Collins, B. & Mees, I. M. (2003). *The phonetics of English and Dutch*. Leiden: Koninklijke Brill NV.
- Crystal, D. (2004). *The Cambridge Encyclopedia of the English Language*. London: Cambridge University Press.
- Crystal, D. (1985). *A Dictionary of Linguistics and Phonetics* (2nd ed.). New York: Basil Blackwell.
- Çorakçı, N & Demirezen, M. (2019). *The perception of diphthongs in vocabulary items by English teachers*. Kıbrıs Girne 2. Globelt Conference.
- Das, K. (2014). Production of central vowels and centering diphthongs by Assamese speakers of English. *Northeast Journal of Contemporary Research*, 1(1), 55-64.
- Demircioğlu, M.D. (2013). The pronunciation problems for Turkish learners in articulating of the diphthongs in English learning. *Procedia Social and Behavioral Sciences* .106, 2983-2992.

Demirezen, M. (2019). *Long vowels versus diphthongs in North American English: Which one is easy to recognize and hear?* Kıbrıs Girne 2. Globelt Conference.

Demirezen, M. (2017). /æ/ versus /ɑ/: Vowel fossilization in the pronunciation of Turkish English majors: Rehabilitation 1. *Journal of Language and Linguistic Studies*, 13(2), 260-284.

Demirezen, M. (2010). The Principles and Applications of the Audio-lingual Pronunciation Rehabilitation Model in Foreign Language Teacher Education. *Journal of Language and Linguistic Studies* .6(2).

Demirezen, M. (2006). The English [æ] and [ɛ] Vowel Sounds as Fossilized Pronunciation Errors for the Turkish Teachers of English and Solutions to the Problem. *Dil ve Dilbilimi Çalışmaları Dergisi*.

Demirezen, M. (2005). Rehabilitating a Fossilized Pronunciation Error: the /v/ and /w/ Contrast by Using the Audio Articulation Method in Teacher Training in Turkey. *Journal of Language and Linguistic Studies*, 1(2), 183-192.

Demirezen, M. (2005) The /ɔ:/ and /ow/ Contrast: Curing a Fossilized Pronunciation Error of Turkish Teacher Trainees of the English Language. *Journal of Arts and Sciences*. Vol: 3

Demirezen, M. (1987). *Articulatory Phonetics and the Principles of Sound Production*. Ankara: Yargı Publications.

Dimitrov, D., M. & Rumrill, P., D (2013) Pre-test, post-test designs and measurement of change. *Speaking of Research*. 20(2), 159-165.

Edwards, J. G. H., & Zampini, M. L. (Eds.). (2008). *Phonology and second language acquisition*. John Benjamins Publishing.

Ercan, H. (2018). Pronunciation problems of Turkish EFL learners in Northern Cyprus. *International Online Journal of Education and Teaching (IOJET)*, 5(4), 877-893. <http://iojet.org/index.php/IOJET/article/view/457/299>.

Flege, J. E. (2005). Origins and development of the Speech Learning Model. Keynote lecture presented at the 1st ASA Workshop on L2 Speech Learning, Simon Fraser Univ., Vancouver, BC April 14-15, 2005.

Flege, J. E., & Port, R. (1981). Cross-language phonetic interference: Arabic to English. *Language and Speech*, 24, 125-146.

Flege, J. E., Schirru, C., & MacKay, I. R. A. (2003). Interaction between the native and second language phonetic subsystems. *Speech Communication*, 40, 467-491.

Gass, M., S. & Selinker, L. (2008). *Second language acquisition: An introductory course*, New York and London: Routledge.

Geylanoğlu, S. (2017). *Developing English language learners' pronunciation through conceptualization* (Master's Thesis) Bahçeşehir University, İstanbul.

Greenbaum, S. (1996). *The Oxford English Grammar*. Oxford: Oxford University Press.

Han, Z. (2004). *Fossilization in Adult Second Language Acquisition*, Ireland: Dublin.

Hannisdal, B. R. (2006). *Variability and change in Received Pronunciation: A study of six phonological variables in the speech of television newsreaders'*. (Ph.D. Thesis) University of Bergen, Norway.

Hasan, A. D. (2000). Problems of teaching English sound system. *ELT: Directions and Orientations*. Rajshahi University: Department of English: 63 – 69.

Hişmanoğlu, M. (2007) The /oo/ and /o:/ Contrast as a Fossilized Pronunciation Error of Turkish Learners of English and Solutions to the Problem. *Journal of Language and Linguistic Studies*. Vol.3, No.1.

Hişmanoğlu, M. (2004). *Problematic English consonants and vowels for Turks in relation to ELT: Text development and problem solutions*. (Unpublished Doctoral Dissertation). Ankara: Hacettepe University, Institute of Social Sciences.

<https://corpus.byu.edu/coca/>

https://instruct.uwo.ca/anthro/247a/6_Metrical%20Phonology.pdf

https://tr.wiktionary.org/wiki/T%C3%BCrk%C3%A7e:Uzun_%C3%9Cnl%C3%BC

<https://www.collinsdictionary.com/dictionary/english>

https://www.oxfordlearnersdictionaries.com/definition/american_english/

<https://www.wordfrequency.info/files/entries.pdf>

Hubbard, P. (1983). *A training Course for TEFL*. Oxford: Oxford University Press.

James, A. (1985). Phonetic transfer and phonological explanation: some theoretical and methodological issues. In E. Kellerman, & M. Sharwood (Eds.), *Cross-language influence in second language acquisition* (pp. 183–197). Oxford: Pergamon Press.

James, C. (1980). *Contrastive Analysis*. Essex: Longman Group Limited.

Javed, M. & Ahmad, A. (2014) Assessing ESL students' pronunciation in the Pakistani context. *Journal of Language and Linguistic Studies*.10 (1), 19-30.

Johanson, L. & Csato' E' . A' . (Eds.) *The Turkic languages*. New York: Routledge

Johnson, K. (2001). *An Introduction to Foreign Language Learning and Teaching*. Longman.

Jones, D. (1978). *An Outline of English Phonetic*. Cambridge: Cambridge University Press.

Kelly, G. (2001). *How to Teach Pronunciation*. England: Longman.

Kenworthy, J. (1987). *Teaching English Pronunciation*, London: Longman

Kenyon, J. S. (1927). American Pronunciation. *American Speech*, 2(12), 500.
doi:10.2307/452802.

Kenyon, J. S. & Knott A. T. (1953). *A Pronouncing Dictionary of American English*. New York: Carnegie Corporation.

Khalilzadeh, A., & Branch, S. (2014). Phonetic and non-phonetic languages: A contrastive study of English and Turkish phonology focusing on the orthography-induced pronunciation problems of Turkish learners of English as a foreign language (Turkish EFL learners).

Kılıç, M. A. & Ögüt, F. (2004). A high unrounded vowel in Turkish: Is it a central or back vowel? *Journal of Speech Communication*. 43, 143-154.

Knight, R. A. (2012). *Phonetics (A course Book)* New York: Cambridge University Press.

Krashen, S.T. (1982). *Principles and Practice in Second Language Acquisition*. Oxford: Pergamon.

Ladefoged, P. & Johnson K. (2010). *A course in phonetics*. Canada: Wadsworth Cengage Learning.

Lado, R. (1957). *Linguistics across cultures: Applied linguistics for language teachers*. Ann Arbor: University of Michigan Press.

Laszlo, S. (2014). *Put English phonetics into practice*. Hungary: Transcarpathian Hungarian Institute Department of Philology.

Lightbown, P. & Spada, N. (1999). *How Languages Are Learned?* Oxford: Oxford University Press.

Linse, C. (2003). "Twisting Tongues: Tongue Twisters in the Classroom," *Modern English Teaching*, Vol. 12, No: 4, 26-28.

Longman Dictionary of Contemporary English: (2004). The Living Dictionary. International Edition, 2004. Essex: Pearson Education Limited.

Maniruzzaman, M. (2006). Phonetic and phonological problems encountered by the Bengali speaking EFL learner: How can they be overcome? *The Jahangirnagar Review Part-C 1*(17).

Marshall D. B. (1949). Neutralization in American English Vowels, *WORD*, 5:3, 255-257, DOI: [10.1080/00437956.1949.11659357](https://doi.org/10.1080/00437956.1949.11659357).

McCully, C. (2009). *The sound structure of English: An introduction. (Cambridge Introductions to the English Language)*. Cambridge, New York: Cambridge University Press.

McMahon, A. (2002). *An Introduction to English Phonology*. Oxford: Oxford University Press.

Morley, J. (1991). The Pronunciation Component in Teaching English to Speakers of Other Languages. *TESOL Quarterly*, 25(1), 51-74.

Nemati, M. & Taghizade, M. (2006). Exploring similarities and differences between L1 and L2. *IRJABS*, 4(9), 2477-2483.

- Odlin, T. (1989). *Language transfer*. Cambridge: Cambridge University Press.
- Ogden, R. (2009) *An introduction to English phonetics*. Edinburgh: Edinburgh University Press.
- Pennington, M.C. (1994). *Recent Research in L2 Phonology: Implications for Practice*. London: Cambridge University Press.
- Pennington, M. (1993). "Breaking L1 Phonological Habit," AILA World Congress. Amsterdam, Netherlands.
- Polivanov, E. D. (1931). La perception des sons d'une langue étrangère [The perception of the sounds of a foreign language]. *Travaux du Cercle Linguistique de Prague*. 4, 79–96.
- Richards, J. C. (1978). (ed.) *Error Analysis: Perspectives on Second Language Acquisition*. Longman Group Limited.
- Roach, P. (2009). *English phonetics and phonology*. Cambridge: Cambridge University Press.
- Ruud, M. B. & Kenyon, J. S. (1925). American Pronunciation. *American Speech*, 1(1), 48. doi:10.2307/451938.

Selinker, L. (1972) Interlanguage. *IRAL* 10 (2), 209–310.

Şenel, M. (1997). *Contributions of Phonetics to Language Teaching* (Master's Thesis, Hacettepe University, Ankara, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp>.

Sheldon, A. & Strange, W. (1982). The acquisition of /r/ and /l/ by Japanese learners of English: Evidence that speech production can precede speech perception. *Applied Psycholinguistics*, 3(3), 243-261.

Toklu, M. O. (2007). *Dilbilime giriş*. Ankara: Akçağ Yayınları.

Trager, G. L., & Cohen, A. (1953). The Phonemes of English: A Phonemic Study of the Vowels and Consonants of Standard English. *Language*, 29(4), 564. doi:10.2307/409979.

Varol, M. (2012). *The influence of Turkish sound system on English pronunciation*. (Master Thesis). University of Florida: Florida.

Yavuz, H. & Balcı, A. (2011). *Turkish phonology and morphology*. Eskişehir: Anadolu Üniversitesi Web Ofset.

Yoshida, M. (2012). *The vowel of North American English* (PDF document). Retrieved from <http://fliphtml5.com/zwmq/leee>.

Yule, G. & Macdonald, D. (1994). *The effects of pronunciation teaching*. In J. Morley (Ed.), *Pronunciation pedagogy and theory: New views, new directions* (pp. 109-118). Alexandria, Virginia: TESOL Inc.

Wheelock, A. (2016). Phonological difficulties encountered by Italian learners of English: An error analysis. Hawaii Pacific University TESOL Working Paper Series 14, 41-61.

Zimmer, K. & Orgun, O. (1999), "*Turkish*", *Handbook of the International Phonetic Association: A guide to the use of the International Phonetic Alphabet* (PDF), Cambridge: Cambridge University Press, p. 154–158.

Zsiga, E. C. (2013). *Sounds of language: An introduction to phonetics and phonology*. Wiley & Blackwell.

APPENDICES

APPENDIX-A: Consent Form



Recognition of [æ] and [ɛ] Vowels of English by Translation and Literature Students

This study aims to explore the written recognition of [æ] and [ɛ] vowels of English by Translation and Literature students.

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason, have been given enough information about the study and agree to take part in this study.

Your information is confidential. Your answers will not be linked to your name and will be only used for this study.

Please click the accept button below if you are willing to participate in this study.

Name of the researcher: Kemal TÜRKAY

Date

Signature

Contact info: kemaltrkay@gmail.com

APPENDIX-B: Demographic Questionnaire

Demographic information form

Dear students,

This questionnaire is the first step of a master thesis in English Language Teaching Department at Ufuk University/Ankara. It consists of 12 questions which aim to get more information about your background. Your personal information will be kept secret. You don't need to indicate your real name. You can write a nickname and surname that will be used in the post-test later on. Please contact me if you have any questions.

Researcher: Kemal TÜRKAY

Phone number: 0554-428-1332

Your e-mail address:

Your name (Optional):

Please try to answer the following questions.

1-What is your gender?

a. female b male

2- What is your year of birth?

3- Which department did you graduate from?

a. Translation and Interpreting Studies (English) b. English Language and Literature

4- Which grade are you in right now?

a. 1 b. 2 c. 3 d. 4

5- Have you ever taken a pronunciation class? If yes, was it an elective or a must course?

a. No, I haven't b. Yes, I have as an elective. c. Yes, I have as a must course

6- How frequently do you look up a dictionary to check the correct pronunciation of the new word you learn?

- a. Always b. Often c. Sometimes d. Rarely e. Never

7- How important do you think the pronunciation is?

- a. Very important b. Important c. Not sure d. A little important e. Unimportant

8- How good do you think your pronunciation skill is?

- a. Very good b. Good c. Average d. Bad e. Very bad

9- Do you plan to be an English teacher after your graduation?

- a. Yes b. No c. Undecided

10- Do you think that it is important to be native-like for the students in your department?

- a. Yes b. No

11- Can you read and write the IPA (The International Phonetic Alphabet)?

- a. Yes b. No c. Partially

12- How self-confident do you feel yourself while speaking English?

- a. High b. Moderate c. Low

APPENDIX-C: The Recognition Test of [æ] and [ɛ] Vowel Sounds of English

The Recognition Test of [æ] and [ɛ] Vowel Sounds of English

Please watch the video first to hear the correct pronunciation of the [æ] sound.

<https://www.youtube.com/watch?v=4aq6Usvqpa4>

Questions 1-10. Choose the best option which includes the [æ] sound in the following words.

1. a) assorted
b) adorable
c) language
d) vocation
e) according
2. a) programmer
b) labelling
c) approaching
d) vacation
e) tradition
3. a) unpleasant
b) systematic
c) signature
d) unbreakable
e) participant
4. a) accordance
b) celebrate
c) measurement
d) abandon
e) assertion
5. a) majority
b) minority
c) associate
d) Netherlands
e) transforming
6. a) disestablishment
b) disability
c) employability
d) sustainability
e) accompaniment
7. a) sensationalism
b) particularly
c) informational
d) psychiatrically
e) motivational
8. a) attributively
b) spirituality
c) coeducational
d) exemplification
e) therapeutically
9. a) archaeologically
b) durability
c) persuasiveness
d) observationally
e) traumatically
10. a) argumentative
b) knowability
c) manageability
d) rechargeability
e) dermatologically

Questions 11-20. In which of the following words are there TWO occurrences of the [æ] sound?

11. a) lateral
b) abstraction
c) practical
d) advertisement
e) navigation
12. a) saturation
b) expanding
c) satisfaction
d) academy
e) category

- | | |
|---|--|
| 13. a) handicap
b) capital
c) parameter
d) advancement
e) translation | 17. a) maladaptively
b) international
c) examination
d) aerodynamics
e) systematically |
| 14. a) attraction
b) postgraduate
c) accurate
d) transnational
e) adaptation | 18. a) activational
b) fantastically
c) diplomatical
d) capitalization
e) additionality |
| 15. a) actually
b) classically
c) paralyze
d) parallel
e) Amsterdam | 19. a) adventurously
b) traditionalist
c) disadvantageous
d) aspirational
e) appropriateness |
| 16. a) analytically
b) annihilation
c) capitalization
d) nationality
e) preparational | 20. a) catastrophically
b) fatalistically
c) miscalculation
d) palaeolithic
e) manufacturer |

For the questions 21-40, please watch the video first to hear the correct pronunciation of the [ɛ] sound. https://www.youtube.com/watch?v=IOyRh_BIVzU

Questions 21-30. Choose the best option which includes the [ɛ] sound in the following words.

- | | |
|--|---|
| 21. a) attempting
b) extremely
c) preserving
d) description
e) referring | 24. a) entailment
b) encounter
c) unfriendly
d) releasing
e) presumption |
| 22. a) preceding
b) external
c) nonetheless
d) erasing
e) enlighten | 25. a) example
b) security
c) terminate
d) succession
e) elastic |
| 23. a) equivalent
b) tremendous
c) eternal
d) delicious
e) requirement | 26. a) interpretation
b) eradication
c) consequently
d) externalization
e) immeasurable |

27. a) insecurity
b) inescapable
c) phenomenologist
d) refrigerator
e) indelicately

28. a) inevitable
b) elaboration
c) epistemological
d) complimentary
e) employability

29. a) mysteriously
b) subjectivity
c) commercializing
d) relinquishing
e) correspondingly

30. a) religiously
b) geographically
c) endurability
d) theoretically
e) interestingly

Questions 31-40. In which of the following words are there TWO occurrences of the [ɛ] sound?

31. a) expectation
b) settlement
c) departmental
d) endurance
e) excellence

32. a) sequential
b) thereafter
c) television
d) elemental
e) celebrity

33. a) determine
b) excessively
c) entertainment
d) apprehend
e) extremely

34. a) celestial
b) elegant
c) presidential
d) eventual
e) essential

35. a) excellency
b) residence
c) telepathy
d) elective
e) sentimental

36. a) rebelliousness
b) vegetarianism
c) exemplification
d) developmental
e) inexpensively

37. a) representative
b) interestingly
c) intermediate
d) environmentally
e) ceremonially

38. a) comprehensively
b) unnecessarily
c) generativeness
d) generalization
e) hereditary

39. a) exaggeratedly
b) eccentrically
c) existentialism
d) necessitating
e) repetitional

40. a) inexpressible
b) expresiveness
c) celebrational
d) decentralization
e) experimentally

APPENDIX-D: Power Point Slide Sample Used in the Training: Application of the Audio-Articulation Method

1. Warming-up and motivation

(The teacher uses American English in teaching).

Teacher: Good morning, students, how are you today?

Students: Thank you, we are well, sir. How about you?

T: I am also very well, thank you. Who is going to read loudly the following sentence? (He shows them the sentence on the screen)

Jack had a handbag in Amsterdam

Cihan: I want to read it loudly, Sir.

T: Go ahead, Cihan.

Cihan: (He reads the sentence as:)

Jeck hed e hendbeg in Emstørdem

T: (Very nicely, without discouraging the student). Be careful. You have a mistake in your pronunciation. Who wants to try it again?

Zeynep: May I do it, Sir?

T: Alright, Zeynep. Go ahead.

Zeynep: (She reads out as:)

Jeck hed e hendbeg in Emstørdem.

T: Zeynep, be careful, you've made the same pronunciation mistake. Okay, students, we must study more on these problem-causing sounds of English for Turks. You are not able to articulate the English vowel [æ]; therefore, we must do more practice on it.

2. Reviewing the Previous Topic

T: Students, remember that in our previous lesson, we studied [ɛ] sound. Let's review with some examples;

Test, Peg, Legs, Hen, Nest, Vet, Rest, Bent, Net, Vet

Teacher wants students to read the words one by one to get them to remember the [ɛ] Sound. Then students check their answers by listening to the computer.

3. Introducing Today's Topic

T. Students, today, we will study on the [æ] vowel sound of American English. The correct articulation of the sentence "Jack has a handbag in Amsterdam" is

dʒæk hæd ə hændbæg in æmstər'dæm

Today we'll do more practice on [æ] sound.

4. Preparing a Corpus

The teacher prepares a corpus of 80 to 100 words that includes the problem-causing sound and its closest counterparts. He repeats the words in the corpus and gets the students to repeat them in the class in single or group articulations. Computer applications are also possible in conducting the pronunciation lesson.

4.1. Presenting a Corpus

The following words in the corpus are repeated by the teacher without boring the students. He involves them in one-by-one or in group repetitions. The exhortations given by the pronunciation must be at least near native-like in American English.

4.1.1. The corpus of the [ɛ] sound

bed – [bɛd]	test – [tɛst]	death – [dɛθ]	less- [lɛs]
beg – [bɛg]	hen – [hɛn]	head – [hɛd]	rest – [rɛst]
bend – [bɛnd]	lend- [lɛnd]	bread – [brɛd]	lest – [lɛst]

pet – [pɛt]	slept – [slɛpt]	merry – [ˈmɛəri]	pest – [pɛst]
end – [ɛnd]	Beth – [bɛθ]	health – [hɛlθ]	said – [sɛd]
men – [mɛn]	peg – [pɛg]	beggar – [bɛgə]	gem – [dʒɛm]
leg – [lɛg]	vest – [vɛst]	dead – [dɛd]	question- [ˈkwɛstʃən]
bet – [bɛt]	pen – [pɛn]	flesh – [flɛʃ]	guess – [gɛs]
led – [lɛd]	then – [ðɛn]	bent – [bɛnt]	dreadful – [ˈdriːdfl]
shell – [ʃɛl]	Ben – [bɛn]	deaf – [dɛf]	kettle – [ˈkɛtl]

attempt – [əˈtɛmpt]	expectation – [ˌɛk.spekˈteɪ.ʃən]
nonetheless – [ˌnɒn.ðəˈlɛs]	elemental – [ˌɛl.əˈmɛn.təl]
tremendous – [tɹɪˈmɛn.dəs]	excessively – [ɛkˈsɛs.ɪv.li]
unfriendly – [ʌnˈfriːnd.li]	presidential – [ˌpɹɪz.ɪˈdɛn.ʃəl]
succession – [səkˈsɛʃ.ən]	sentimental – [ˌsɛn.təˈmɛn.təl]
immeasurable – [ɪˈmɛʒ. ə.ɪ.ə.bəl]	developmental – [dɪ.vɛl.əpˈmɛn.təl]
indelicate – [ɪnˈdɛl.ə.kət.li]	representative – [ˌrɛp.ɪˈzɛn.tə.tɪv]
inevitable – [ɪnˈɛv.ə.tə.bəl]	unnecessarily – [ʌnˈnɛs.ə.sɛɪ.ə.li]
subjectivity – [ˌsʌb.dʒɛkˈtɪv.ə.ti]	existentialism – [ˌɛɡ.zɪˈstɛn.ʃəl.ɪ.zəm]
theoretically – [ˌθiː.əˈriː.tɪ.kəl.i]	experimentally – [ɪk.sperɪ.əˈmɛn.təl.i]

4.1.2. The Corpus of the [æ] Sound









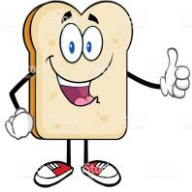











bad – [bæd]	man – [mæn]
lag – [læg]	dad – [dæd]
bat – [bæt]	band – [bænd]
and – [ænd]	vast – [væst]
bath – [bæθ]	sad – [sæd]
land – [lænd]	ban – [bænd]



















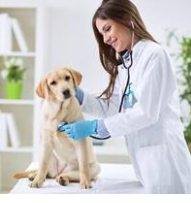





sand –[sænd]	than –[ðæn]
bag –[bæg]	mad –[mæd]
pan–[pæn]	last –[læst]
pat –[pæt]	flash –[flæsh]
brad –[bræd]	marry –['mæ:ri]
actually –['æktʃuəli]	handbag–[hændbæg]
sandwich [sænwɪtʃ]	animal –['æniməl]
natural –[nætʃʊrəl]	satisfaction [,sætɪs 'fækʃən]
perhaps –[pɛɪ 'hæps]	programme- ['prɒɡræm]
jam –[dʒæm]	shall- [ʃæl]
fantastic –[fæn 'tæstɪk]	plastic –[plæstɪk]
action –[ækʃn]	nationality –[næʃnælɪti]
brand –[brænd]	exactly –[ɪg 'zæktli]
catnap –['kætnæp]	backgammon- ['bækgæmən]
Amsterdam- [,æmstəɪ 'dæm]	activity –[æk 'tɪvəti]
handicap –['hændɪkæp]	contact –['kɒntækt]

language – ['læŋ.gwɪdʒ]	abstraction – [æb'sɪræk.ʃən]
grammatical - [gɹə'mætɪ.ɪ.kəl]	unsatisfactory – [ʌn ,sætɪ.ɪs 'fæk.təɪ.ɪ]
systematic – [,sɪs.tə 'mætɪ.ɪk]	ambassador – [æm 'bæs.ə.dəɪ]
abandon – [ə 'bænd.dən]	transnational – [,trænz 'næʃ.ən.əl]
transformer – [træns 'fɔ:ɪməɪ]	transatlantic - [,trænzæt 'læn.tɪk]
disestablishment –[,dɪs.ɪ 'stæb.lɪʃ.mənt]	pragmatics - [præg 'mætɪ.ɪks]
psychiatrically – [,saɪ.ki 'æt. ɪ.kəl.ɪ]	maladaptive – [,mæl.ə 'dæp.tɪv]
spirituality – [,spɪɪ.ə.tʃu 'æl.ə.tɪ]	mathematics - [,mæθ 'mætɪ.ɪks]
traumatically – [tra: 'mætɪ.ɪ.kəl.ɪ]	advantageously – [,æd.væn'teɪ.dʒəs.li]
manageability – [,mæn.ɪ.dʒə. 'bɪl.ə.tɪ]	manufacturer – [,mæn.jə 'fæk.tʃəɪ. əɪ]

4.2. Establishing the Minimal Pairs

The teacher takes the following minimal pairs from the words in the corpus. If there are any unknown words for the students, he handles them first in the class before the exhortations.

[ɛ]	[æ]	[ɛ]	[æ]
 bet /bɛt/	 bat /bæt/	 beg /bɛg/	 bag /bæg/
 bed /bɛd/	 bad /bæd/	 pen /pɛn/	 pan /pæn/
 bread /brɛd/	 Brad /bræd/	 said /sɛd/	 sad /sæd/
 men /mɛn/	 man /mæn/	 dead /dɛd/	 dad /dæd/
 gem /dʒɛm/	 jam /dʒæm/	 less /lɛs/	 lass /læs/

	VS				VS		
ten /tɛn/		tan /tæn/		Beth /bɛθ/		bath /bæθ/	
	VS				VS		
flesh /flɛʃ/		flash /flæʃ/		pest /pɛst/		past /pæst/	
	VS				VS		
merry /mɛr.i/		marry /mæri/		lend /lɛnd/		land /lænd/	
	VS				VS		
send /sɛnd/		sand /sænd/		guess /gɛs/		gas /gæs/	
	VS				VS		
tech /tɛk/		tack /tæk/		vet /vɛt/		vat /væt/	
	VS				VS		
vest /vɛst/		vast /væst/		slept /slɛpt/		slapped /slæpt/	

4.3. Creating Tongue Twisters

The phrases given below are first repeated by the teacher and then by the students, whose phonetic memory are thus properly stabilized and trained in standard articulation of North American English.

(1)

A man

A man went

A man went near the men

A man went near the men to meet them

(2)

A lad

A sad lad

A sad lad said he's not glad

A sad lad said he's not glad at the end

(3)

A pest

A pest passed

A pest passed fast

A pest passed fast in the past

(4)

A slapped

A slapped face

A slapped face looked slept

A slapped face looked slept in a bad bed

(5)

A bad

A bad cat

A bad cat on my bed

A bad cat on my bed fell back

(6)

Wet

Wet sand

Wet sand is ready to send

Wet sand is ready to send in a vat

(7)

A merry

A merry elf

A merry elf may marry

A merry elf may marry Harry

(8)

A rap

A rap band

A rap band will bend

A rap band will bend the air bad

(9)

Sad

Sad Beth

Sad Beth had a bath

Sad Beth had a bath and rested on a bad bed

(10)

A man

A man outside the tent

A man outside the tent tends to get

A man outside the tent tends to get tanned.

5. GIVING THE RULE

T: Now, class, this is RULE TIME! Let's first see the North American Phonetic Vowel chart and our two phonemes' places in there.

	FRONT	CENTER	BACK
HIGH	i:		u:
	ɪ		ʊ
MID	e:	ə	oʊ
	ɛ	ʌ	ɔ
LOW	æ		ɑ

Figure 1. The North American phonetic vowel chart (Demirezen, 2017, p.263).

5.1. Linguistic Definitions of [æ] vs [ɛ]

T: Please see the tongue height of position for [æ] and [ɛ] vowels in Figure 1 in North American English. Their identification can be given as in the following.

[æ] is a low front short unrounded vowel, called *ash*

[ɛ] is a mid-front short unrounded vowel, called *epsilon*.

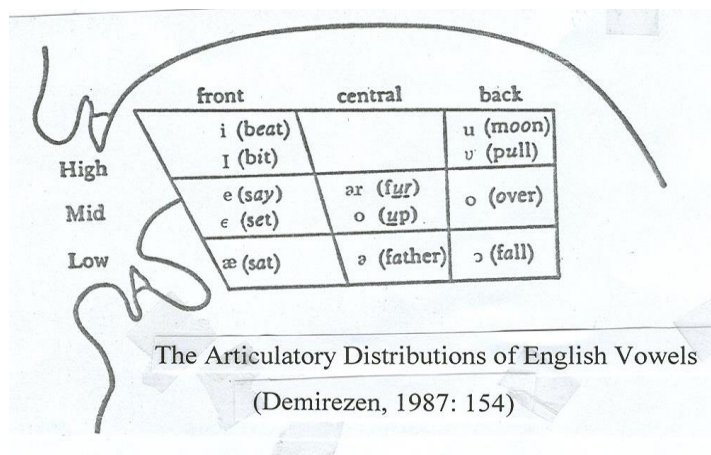


Figure 2. The tongue height position for the [æ] and [ɛ] vowels in North American English. (Demirezen, 2006, p.172).

5.2. Contrastive Positioning of [æ] vs [ɛ]

Now, class, see the contrastive positioning of [æ] and [ɛ] in the mouth in Figure 3. Please note that *epsilon* [ɛ] holds a higher position with respect to *ash* [æ] in the mouth.

Do not forget that [æ] is like a combination of Turkish [a] and [e] sounds, which is very prominent and distinct in North American English.

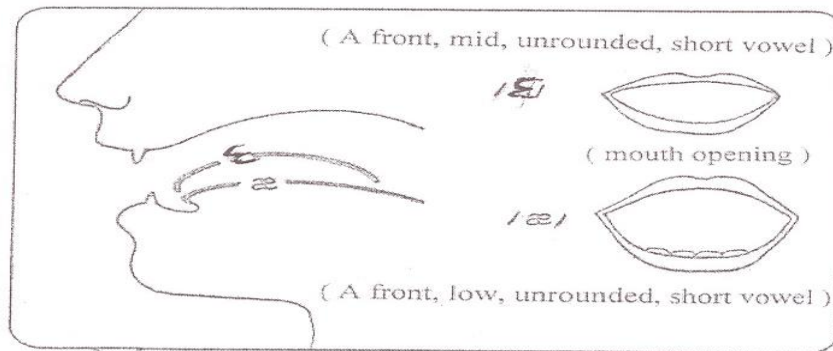
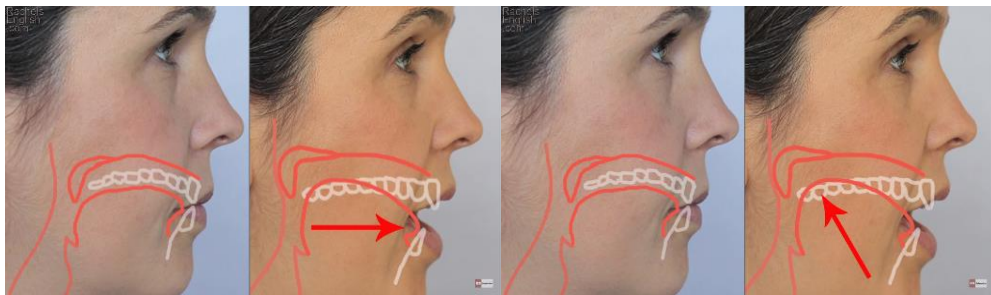


Figure 3. The articulatory position of [æ] and [ɛ] in the mouth (Demirezen, 2006, p.173).

5.3. The Tongue Position for the [æ] Sound

The tongue is wide. As the tongue is high in the back and low in the front, you can see a large part of it.



The front of the tongue

The back of the tongue

Figure 4. Tongue position for the [æ] sound.

(retrieved from <https://www.youtube.com/watch?v=mynucZiy-Ug>).

5.4. The Tongue Position for the [ɛ] Sound

The tongue is very relaxed and its height is in the mid-level of your mouth.



Figure 5. Mouth position for the [ɛ] sound: (retrieved from <https://www.youtube.com/watch?v=mynucZiy-Ug>).

5.5. The Mouth Position for the [æ] and [ɛ] Sound

Now let's have a look at the mouth position. The [æ] is bigger. This vowel requires the mouth to be more open. For the [ɛ], you open your mouth just a little bit and relax your mouth. So in the former, it is bigger and little bit more tense than the latter.



[æ]

[ɛ]

The mouth is open very wide

The mouth is half open

Figure 6. The mouth's openness (retrived from <https://tfcs.baruch.cuny.edu/ae/>).

5.6. Theoretical Summary of [æ] Phoneme

To make the [æ] sound:

- 1- Focus on the correct position of your tongue and jaw.
- 2- Open your mouth as wide as possible, slightly spread your lips, and tense them.
- 3- Tense your tongue, flatten it, and push it down and forward.

5.7. Theoretical Summary of [ɛ] Phoneme

To make the [ɛ] sound:

- 1- Again focus on the correct position of your tongue and jaw.
- 2- Partially open your mouth, slightly spread your lips, and relax them.
- 3- Push your tongue to the front of your mouth and relax it.
- 4- Raise the middle of your tongue to the roof of your mouth and lower the tip of it just behind your bottom front teeth.

5.8. A Practical Sum of the Rule

Let's sum it up! Here are the two key distinctions between the [æ] and [ɛ]:

First, look at the position of the lower jaw:

- 1- For the [ɛ] sound, the mouth is half open.
- 2- For the [æ] sound, the mouth is open very wide.

Second, look at the tongue:

- 1- For the [ɛ] sound, the tongue is relaxed and in the middle of your mouth.
- 2- For the [æ] sound, the tongue is tensed, flat and very low in your mouth.

5.9. Listen to the Rule from a Native

Now let's watch these two native speakers giving the rule for these two phonemes.



The video URL:

<https://rachelsenglish.com/english-pronounce-aa-ae-vowel/http://evaeaston.com>

Well done students! Now we will play a Kahoot game to distinguish between these two phonemes. Kahoot Time!!!

URL: <https://play.kahoot.it/#/?quizId=7250b721-1453-4d30-a7eb-14f383f1895b>

6. Minimal Sentences

The purpose of the exercise is to make students listen and find the correct option.

1. **BAD** dog! Get off the **BED**!
2. I **GUESS** they want **GAS**.
3. **Her DAD** is **DEAD**.
4. Can you **LEND** your **LAND**.
5. **BRAD** wants some **BREAD**.
6. There is a **PEN** in that **PAN**.
7. She **BEGGED** me to buy a new **BAG**.
8. “**SHALL**” does not mean “**SHELL**”.
9. I saw a **FLASH** on her **FLESH**.
10. The group of **MEN** cheered as the old **MAN** came on the stage.

6.1. Practice Minimal Pairs with Contextual Clues

In this exercise, the teacher makes students listen to the sentences, and they are expected to find the correct words including the phonemes having been given. Through the meaning of the sentences, they are expected to do exercise about the words consisting of the phonemes.

1. A **MAN/MEN** appeared suddenly behind the window.
2. **TEN/TAN** children were absent in the class yesterday.
3. Sally **SAID/SAD** that she had a big black cat.
4. The plastic **BAG/BEG** was taken back by Ted's dad.
5. Dave saw a snake on the sandy **LAND/LEND**.
6. **BETH/BATH** was in **BED/BAD** because she was not glad.
7. The little boy **SLEPT/SLAPPED** before he went to bed.
8. Once upon a time, there was a **MERRY/MARRY** woman in a town.
9. Matt gave me a **PAN/PEN** but it was out of ink and I could not use that.
10. Yesterday, I killed the **PEST/PAST** at home at last.
11. There was a **VAST/VEST** land that the queen Mary had.
12. Kate got a good **PAN/PEN** but she broke and could not write with that.
13. The **FLASH/FLESH** coming from the trash was a can of the mash.
14. A beggar has a red **BEG/BAG** to collect money and put them back.
15. Last night, I saw a **BAT/BET** flying over my dad's head.
16. A lad stopped on my back and he asked for the **GAS/GUESS**.
17. When I called Ted, he **SAID/SAD** that his mother **BETH/BATH** had already been **DEAD/DAD**.

6.2. Practice with Context Giving

In this exercise, the teacher makes students listen to the paragraphs. Then, students are expected to complete the blanks with the words from the box. With the help of this exercise, students are expected to use the words including the related phonemes in a context.

Paragraph 1:

ten – sad - vast - head - trapped - cat – mad – made - lend - man – said - land

1)_____Beth went to a 2)_____ land in the West trying to find some animals to take photograph. After a while, when she was about to 3)_____ back, she saw an animal, a cat that was 4)_____. She asked for help to rescue the 5)_____. The trap 6)_____ her 7)_____. An uncanny 8)_____ appeared in the area at a glance for the help. In the end, Beth 9)_____ that and happy to know all the wild cats and animals were in their 10)_____.

Paragraph 2:

tan - sand - vast - pest - slapped - sad - said(x2) - begged - man - lend -end

A 1)_____man came to the 2)_____ with a bag in his hand. He was glad to be on the 3)_____ sand. After that, he saw a 4)_____. It 5)_____ over his father's hat; that's why, he 6)_____his dad. His father got so furious that the tan man 7)_____ that he was so sorry for that. Therefore, he 8)_____his father to 9)_____ his sunbag. His father was mad and wanted him to go back. In the 10)_____, the father went out of his head and lost the track back to his flat.

6.3. Practice with Dialogues

In this exercise, the teacher makes students listen to the dialogues. Afterwards, students are expected to read the dialogues by choosing partners. Through this dialogue practice, students are expected to study the pronunciation of the phonemes in the selected words that have already been given.

Dialogue 1:

Kamala: How was the **bash** that was held the last **day**?

Beth: It was not **bad**. I like **that**.

Kamala: Did you see the **ten men** there?

Beth: They were in the **bank**.

Kamala: Did they have **hats** on their **heads**?

Beth: Yes, the **men** kept their **hats** on their **heads**.

Kamala: Is that **man** wearing **red cap** your **friend**?

Beth: Yes, **the man** standing over **that vast land** is my boy **friend**.

Dialogue 2:

Marry: Hey! There is a **man who sat down** over there.

Jessica: What does he **have** in his **hand**? Is it a **rat** or **cat**?

Marry: No, I thought that it is a **black bag**.

Jessica: Why is he holding the **bag**?

Marry: Because he is **begging** in front of the **bank**.

Jessica: He looks **sad** but I **believe that he can own some land** with **the bag**.

Marry: You are right **man**. He smiles; he's not **bad**.

7. Making the Summary

Thank you, students! In this lesson, we've studied the differences between the following phonemes in English: [æ] vs [ɛ]. We've first looked at the position of the lower jaw.

For the [ɛ] sound, the mouth is half open.

For the [æ] sound, the mouth is open very wide.

And secondly, we've looked at the tongue:

For the [ɛ] sound, the tongue is relaxed and in the middle of your mouth.

For the [æ] sound, the tongue is tensed, flat and very low in your mouth.

8. Giving Assignments to the Students

Teacher: You were good today! That's why I'll give you an assignment.

Assignment: I want you to write ten tongue twisters by using [æ] vs [ɛ]. We will take a look at them next week!

APPENDIX-E: Özgeçmiş

Kişisel Bilgiler

Adı Soyadı : Kemal TÜRKAY
Doğum Yeri ve Tarihi : Uşak / 16.06.1987

Eğitim Durumu

Lisans Öğrenimi : Hacettepe Üniversitesi
İngiliz Dili Eğitimi

Yüksek Lisans Öğrenimi : Orta Doğu Teknik
Üniversitesi/
Felsefe Bölümü

Yüksek Lisans Öğrenimi : Ufuk Üniversitesi/
İngiliz Dili Eğitimi

Bildiği Yabancı Diller : İngilizce


Bilimsel Faaliyetleri : 2015 Kitap, LAB
Publishing, Almanya
“Why Is There Something
Rather Than Nothing?”

İş Denevimi

Çalıştığı Kurumlar : Ankara Üniversitesi (2011-2012, İngilizce
Okutmanı, Hazırlık Birimi)
Çankaya Üniversitesi (2012- Devam ediyor,
Öğretim Görevlisi, Yabancı Diller Bölümü
Hazırlık Birimi)

APPENDIX-F: Etik Kurul İzni

Declaration of Ethical Conduct



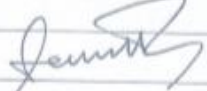


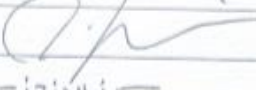
T.C.
UFUK ÜNİVERSİTESİ

SOSYAL VE BEŞERİ BİLİMLER BİLİMSEL
ARAŞTIRMA VE YAYIN ETİĞİ KURULU

Karar Tarihi : 13.05.2020
Toplantı Sayısı : 2020/3
Karar Sayısı : 2020/37

İngiliz Dili Eğitimi Yüksek Lisans Programı tezli yüksek lisans öğrencisi **Kemal TÜRKAY**'ın, Prof. Dr. Mehmet DEMİREZEN'in tez danışmanlığında devam ettirdiği "*Written Recognition of "ae" and "e" Vowels of English by Translation and Literature Students*" başlıklı tez çalışmasına ilişkin başvurusu görüşüldü.

Yapılan incelemeler sonucunda hazırlanan tez çalışmasının, bilimsel araştırma ve yayın etiği açısından uygun olduğuna karar verildi.

ETİK KURUL ÜYELERİ	İMZA
Prof. Dr. Semih BÜKER	
Prof. Dr. Cenap ERDEMİR	- İZİNLI -
Prof. Dr. Emel ERDOĞAN BAKAR	
Prof. Dr. Orhan AYDIN	- İZİNLI -
Prof. Dr. Mehmet TOMANBAY	
Prof. Dr. Türkmen DERDİYOK	
Prof. Dr. C. Sencer İMER	- İZİNLI -

ADRES : Ufuk Üniversitesi İncek Şehit Savcı Mehmet Selim Kiraz Bulvarı No:129 (06836) İncek-Gölbaşı -Ankara

Tel : (0312) 586 70 00 Faks : (0312) 586 71 24

WEB : www.ufuk.edu.tr e-mail : ufuk@ufuk.edu.tr

