

**The English [æ] and [ε] Vowel Sounds as Fossilized Pronunciation Errors for the  
Turkish Teachers of English and Solutions to the Problem**

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**ABSTRACT**

The Fossilized pronunciation errors constitute a great problem in the mastery of L2 in second or foreign language learning and teaching (Odlin 1989; Demirezen, 2003; Demirezen, 2004; Johnson, 2001). One of such errors, which is committed by a great majority of Turkish teachers of English and student teachers, is the acquisition of [æ] and [ε] vowel sounds of the English language. There has been no specific material or lesson plan encountered so far in the literature to rehabilitate the pronunciation difficulty, created by [æ] and [ε] vowel sounds of the English language. Therefore, this article aims to provide pronunciation teaching material and a sample lesson on two difficult sounds for Turks, like [æ] and [ε], to the Turkish teachers-on-the-job and student teachers of English.

**ÖZET**

Kemikleşmiş sesletim hataları, yabancı dil eğitim ve öğretiminde, bir yabancı dilin iyi öğrenilmesinde sorunlar çıkarmaktadır (Odlin 1989; Demirezen, 2003; Demirezen, 2004; Johnson,2001). Türk İngilizce öğretmenlerin ve stajyer öğretmenlerin birçoğunun yaptığı sesletim hatalarından iki tanesi, İngiliz dilinin [æ] ve [ε] gibi iki ünlüsüdür. Bu iki sesin sesletimindeki güçlüğü giderecek bir gerece ve ders planına bugüne kadar ilgili literatürde rastlanılamamıştır. İşte bu amaçla, bu makalede, İngilizcenin [æ] ve [ε] gibi zor iki sesinin Türkler için çıkardığı sesletim güçlüklerini giderecek gereç ve örnek ders oluşturulmuştur.

# THE ENGLISH [æ] AND [ɛ] VOWEL SOUNDS AS FOSSILIZED PRONUNCIATION ERRORS FOR THE TURKISH TEACHERS OF ENGLISH AND SOLUTIONS TO THE PROBLEM

## Introduction

The [æ] and [ɛ] vowel sounds of the English language always constitute serious fossilized pronunciation problems to the Turkish teachers of English. The vowel [æ] is a low front short vowel, whereas the [ɛ] vowel is a mid front short vowel, which is produced a bit higher in the mouth with respect to [æ]. The main cause of [æ] and [ɛ] vowel sounds as fossilized errors is obviously the fact that they are not coded in the Turkish vowel chart. Therefore, Turkish teachers of English, hence the students too, tend to articulate both of them as [e], which is the closest version of them of the [æ] vowel sound in modern standard Turkish, through a phonetic process called *neutralization*. The aim of this paper is to analyze the causes of this pronunciation problem of the Turkish teachers and students of the English language, and rehabilitate it through the application of a pronunciation teaching method called the *audio-articulation method* that requires specially designed pronunciation exercises (Baker, 1981; Linse, 2003; Baker and Goldstein 1990). In Foreign and second language teaching, fossilization in pronunciation has now obtained a special place in Second Language Acquisition Theory (Long, 2005).

## WHAT MAKES A FOSSILIZED PRONUNCIATION ERROR?

Pronunciation error is basically a case of intrusion from the language learner's phonemic inventory of the foreign language learner's mother tongue. The field of research called *contrastive analysis* (James 1980) and *error analysis* (Richards, 1978) help to determine the types of such errors in relation to foreign or second language teaching. Odlin (1990) states that mother tongue interference is mainly a "cross-linguistics error".

According to Pennington (1993), a fossilized pronunciation error is a habit formation interfering into the learning of foreign languages; fossilized pronunciation errors

are phonological habits transferred over to the target language learning process. In this process the problem is to “break the phonological habit of the mother tongue” (Pennington 1993).

In addition, fossilized pronunciation errors are persistent (Johnson, 2001). They keep coming on and on in the pronunciation of non-native speaker: that is why they are not mistakes but errors. They make the learners get stuck at one point, harming the spoken fluency, reading fluency, and comprehension fluency in doing critical listening. It is for this reason they must be rehabilitated. The audio-articulation pronunciation teaching methodology is potential to generate the required rehabilitations in making the non-native speaker’s articulations approximated to native speakers.

### **Identification of the [æ] and [ɛ] Vowel Sounds as Fossilized Pronunciation Errors**

During the spring term of 2005-2006, I had 14 M.A degree students at the Department of English Language Education-HACETTEPE UNIVERSITY: three from Gazi University, 5 from Hacettepe University, 3 from Marmara University, 1 from Boğaziçi University, 1 from Selcuk University, 1 from Ankara University, and 1 from Dokuz Eylül University. I listened to them, through critical listening techniques, I captured the [æ] and [ɛ] vowels as pronunciation errors by using the *error hunt approach* in relation to *contrastive analysis*, shown in the following chart.

### **METHOD**

The diagnostic test utilized here depends on the suggestion made by Baker (1993: 134) and is further modified by the author of the present article. For each student the diagnostic test is kept all through the spring term of 2005-2006.

The proposed symbols to pin down the fossilized vowel errors given are by (Baker 1993: 134), seen below:

∨	=	no difficulty with this sound
XX	=	extreme difficulty with this sound
X	=	difficulty
X∨	=	minor difficulty

The result of the diagnostic test was that all of the M.A students had the [æ] and [ε] vowel contrast sharply in their articulations, which came up as the Turkish [e] vowel. In other words, all of them were using the Turkish [e] subconsciously in place of [æ] and [ε]. Thus, [æ] and [ε] were problematic vowel sound to the whole of the population, as seen below:

[æ]	=	extreme difficulty with this sound
[ε]	=	extreme difficulty with this sound

That is why the job writing this paper is undertaken by the authors of this research.

### **A Further Difficulty of [æ] and [ε] English Vowels**

There is a conflict in the transcription of [æ] and [ε] in some dictionaries in British and American English. For example, in the Longman Dictionary of Contemporary English (2004) and Cambridge Dictionary of American English (2000) the following words are transcribed as:

Longman (2004) and Cambridge (2000)	A Pronouncing Dictionary of American English (1953)
bed [bed]	bed [bɛd]
beg [beg]	beg [bɛg]
shell [ʃel]	shell [ʃɛl]
head [hed]	head [hɛd]

In addition on American English book, namely Baker. and Goldstein ‘s (1990) book titled *Pronunciation Pairs: An introductory Course for Students of English*, Cambridge: Cambridge University Press and Kenworthy’s book (1987) titled *Teaching English Pronunciation*, New York: Longman, the vowel [e] is always transcribed as [ɛ], but in British English, for example, in Longman (2004) the vowel [e] is transcribed as [e].

### **The Rehabilitation of the errors on [æ] and [ɛ] Sounds of Turkish Teachers and Students**

In accordance with the principles of the audio-articulation pronunciation teaching method, which is in total agreement with contrastive analysis and error analysis, firstly a corpus of 80 to 100 words (Demirezen 2003; Demirezen 2004), which includes the words that have the sounds to be contrasted is prepared. And then the following steps are handled by the teacher one by one.

### **APPLICATON OF THE AUDIO-LINGUAL PRONUNCAITION TEACHING METHOD**

#### *1. Warming-up and motivation*

(The teacher uses American English in teaching the lesson; also, colloquial articulations of the words in the lesson are used in conducting the lesson).

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

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

T: Thank you all. I am very well, thank you. Who is going to read loudly the following sentence? (S/he writes the sentence on the blackboard:

Jack has a handbag and a backpack.

Ayşe: I want to read it loudly, Sir.

T: Go ahead, Ayşe.

Ayşe: (She reads the sentence as)

[dʒek hez e hendbeg end e bekpek]

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

Ahmet: May I do it, sir?

T: Alright, Ahmet. Go ahead.

Ahmet: (He reads out as:

[dʒek hez e hendbeg end e bekpek]

T: Ahmet, be careful, you made the same pronunciation mistake. Okay, students, we must study more on some English problem –causing sounds for Turks.

## *2. Reviewing the Previous Material*

T: Students, what did we study in our last lesson?

Sts: We studied the English [e] vowel sound.

T. Yes, but you are very much under the auditory influence of the [e] English vowel sound, and moreover, you confuse it with the Turkish [e] vowel. So, we must further do more practice on it.

## *3. Introducing the Today's Topic*

T. Students, today, we will study on the [æ] vowel of the English vowel sound. The correct articulation of the sentence “*Jack has a handbag and a backpack*” is

[dʒæk hæz ə hændbæg ənd bægpæk]

You are not able to articulate the English vowel [æ]; therefore, we must do more practice on it.

#### *4. Preparing a Corpus*

The teacher prepares a corpus of 80 to 100 words that includes the problem causing sound and its closest counterparts. S/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.

##### *4A. Presenting a CORPUS*

The following words in the corpus are repeated by the teacher without boring the students. S/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. When necessary, s/he can give both the British and American pronunciations.

bat [bæt]	bed [bɛd]	handbag [hændbæg]
lag [læg]	beg [bɛg]	backpack [bægpæk]
bad [bæd]	bend [bɛnd]	ransack [ræksæk]
and [ænd]	pet [bɛt]	flashback [flæʃbæk]
bath [bæθ]	pen [pɛn]	fantastic [fæntæstɪk]
land [lænd]	end [ɛnd]	jackass [dʒækæs]
lass [læs]	men [mɛn]	catnap [kætnæp]
hand [hænd]	dead [dɛd]	sandwich [sændwɪtʃ]
sand [sænd]	leg [lɛg]	backtrack [bæktɹæk]
bag [bæg]	bet [bɛt]	gasbag [gæsbæg]
pan [pæn]	less [lɛs]	hatchback [hætʃbæk]
man [mæn]	led [lɛd]	backgammon [bækgæmən]
dad [dæd]	lest [lɛst]	backchat [bæktʃæt]

band [bænd]	bet [bet]	Ramadan [ræmədæn]
pat [bæt]	shell [ʃel]	satisfaction [sætɪfækʃən]
lad [læd]	head [hed]	nationality [næʃnælɪtɪ]
vast [væst]	Ben [ben]	Amsterdam [æmstərðæm]
ban [bæn]	marry [mæri]	backlash [blæklæʃ]
gem [dʒem]	beggar [begər]	Baghdad [bægdæd] (Amer.)
last [læst]	then [θen]	anagram [ænəgræm]
than [θæn]	vest [vest]	Pakistan [pækɪstæn]
Brad [bræd]	quest [gest]	Afghanistan [æfghænɪstæn]
shall [ʃæl]	slept [slept]	handicap [hændɪkæp]
gassed [gæst]	Beth [bet]	backlash [blæklæʃ]
slapped [slæpt]	led [led]	blackjack [blækʒæk]
lend [lend]	lag [læg]	catamaran [kætəməræn]
deaf [def]	death [deθ]	anticlimax [æntɪklaɪmæks]
mad [mæd]	health [helθ]	catfalque [kætəfælk]
jam [dʒæm]	bread [bred]	ambassador [æmbæsədər]
death [deθ]	marry [mæri]	countdown [kəwntdəwn]
plastic [plæstɪk]	merry [mɛri]	downtown [dəwntəwn]

#### 4B. Establishing the Minimal Pairs

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

[æ]	vs	[ɛ]	[æ]	vs	[ɛ]
1. and [ænd]		end [ɛnd]	11. had [hæd]		head [hed]
2. bat [bæt]		bet [bet]	12. last [læst]		lest [lest]



3. bath [bæθ]	<b>B</b> eth [bɛθ]	13. lad [læd]	led [lɛd]
4. bad [bæd]	bed [bɛd]	14. land [lænd]	lend [lænd]
5. bag [bæg]	beg [bɛg]	15. man [mæn]	men [mɛn]
6. bad [bæd]	bed [bɛd]	16. pan [pæn]	pen [pɛn]
7. band [bænd]	bend [bɛnd]	17. shall [ʃæl]	shell [ʃɛl]
8. ban [bæn]	Ben [bɛn]	18. than [θæn]	then [θɛn]
9. flash [flæʃ]	flesh [flɛʃ]	19. sad [sæd]	said [sɛd]
10. past [pæst]	pest [pɛst]	20. marry [mæri]	merry [mɛri]

#### *4C: 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 American or British English.

(1)

A cat

A fat cat

A black fat cat

A black fat cat on my lap

(2)

A man

A mad man

A mad man in a bank

A mad man in a bank with a mask

(3)

A bat

A bat in a bath

A bat in a vast bath

A black bat in a vast bath

(4)

A dad

A fat dad

A fat and deaf dad

A fat, mad and deaf dad

(5)

A match

A bad match

(6)

A pen

A pen in a pan

A bad match in a dam

A bad, banned match in a dam

A bad pen in a pan

A back, bad pen in a pan

(6)

A bat

A bat on my head

A black bat on my head near the bed

A back fat bat on my head near the bed

(7)

Beth

Beth's bet

Beth's bet on the bed

Beth's bad bet on the bed

(8)

The last

The last bag

The last handbag

The last pet in the handbag

(9)

A sandwich

A fatty sandwich

A fatty sandwich in a shell

A fatty sandwich in a shell with jam

(10)

A hand

A hand in the sand

A hand in the sand land

A black hand in the sand land

11.

A beggar

A beggar's bag

A beggar's plastic bag

A beggar's plastic bag on the bed.

12.

A flashback

A fantastic flashback

A fantastic flashback at the downtown

A fantastic flashback in a hatchback at the downtown

*4D: Doing Recognition exercises*

*4Da: single words:*

T: Students, if you hear the [æ] vowel in the given word, just say (1), but if you hear the [ε] sound, just say (2). Okay, let's begin: Ahmet, you tell me: **pen**.

Ahmet: Two.

Teacher: correct. Ali, now it is turn, which is the sound you hear in the word **past**?

Ali: (1).

Teacher: Correct. Very good, Ali. (The session goes on like this.)

*4Db. On two words (S/he selects them from the corpus given in (4A)):*

Teacher gives words like

bag/beg	dad/dead	lag/leg
flash/flesh	said/sad	sand/send
bat/bat	bad/bed	shall/shell

*4Dc. With words in triples:*

jam/jem/jam	bad/bat/bet
hand/bend/sand	land/lend/land
man/men/Ben	flash/flesh/flash

*4Dd: Teacher: Students read the following paragraph loudly and underline the words that have the [æ] and [ε] vowels.*

The ambassador of Afghanistan had a hatchback. He had great satisfaction in driving it. He used to put his handbag and backpack in his hatchback. But he had a handicap in driving his car: he was fond of doing backchat in a hatchback. That's why he

was given tickets several times by the traffic police of Amsterdam. He had the same handicap driving in Afghanistan and Pakistan.

### 5. Giving the Rule

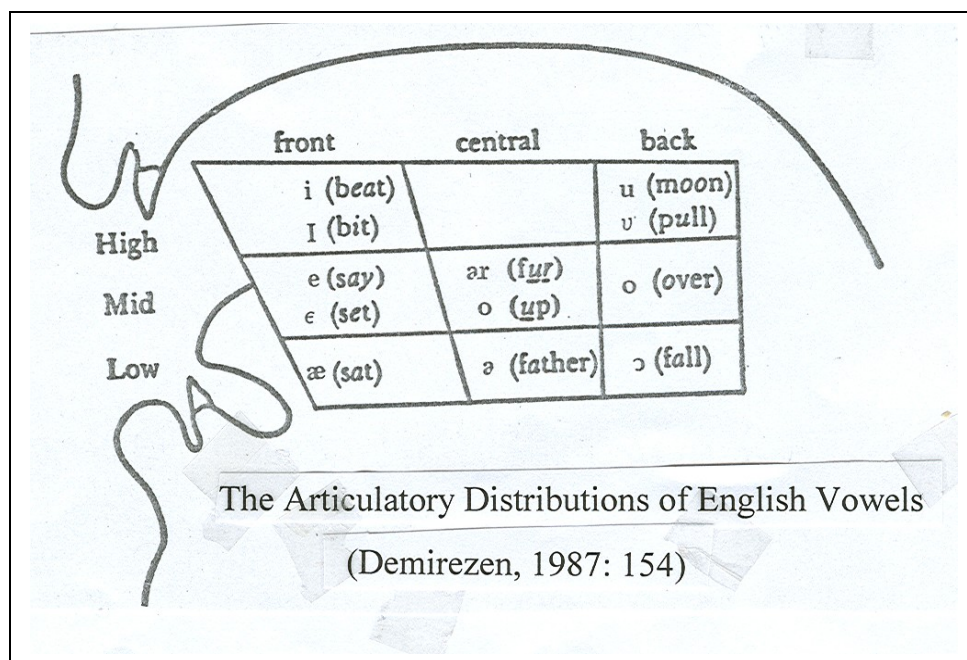
Teacher: Now, class, this is the RULE TIME: Please see the tongue height of position for [ ε ] and [ æ ] vowels in figure (1) both in British and American English. Their identification can be given as follows:

[ æ ] is a short front unrounded vowel, called *digraph-a*

and

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

Figure 1: The tongue height position for the [ ε ] and [ æ ] vowels both in British and American English.



Now, class, see the contrastive positioning of [ ε ] and [ æ ] in the mouth in figure (2). Please note that *epsilon* holds a higher position with respect to *digraph-a* in the mouth.

Do not forget that [æ] is a combination of [a] and [e] sounds, being much more prominent and distinctly heard in American English with respect to British English.

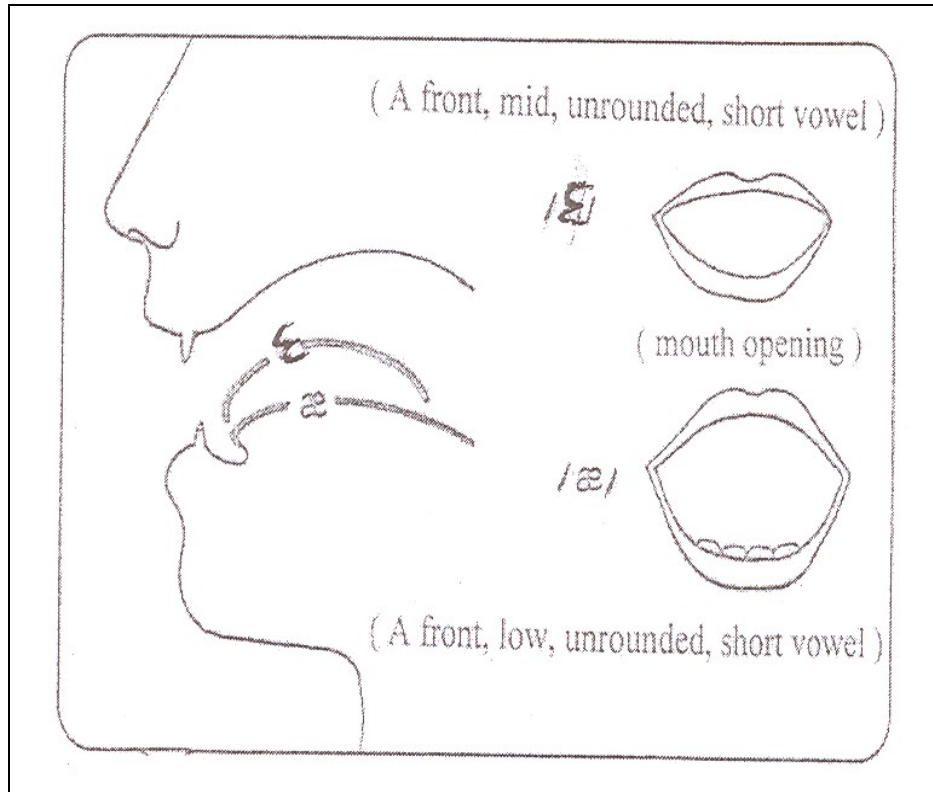


Figure 2: The articulatory position of [ ε ] and [ æ ] in the mouth

### 6. Producing further drills

The teacher puts [æ] and [ε] vowel contrasts into sentence related contexts so that the students can hear and grasp their *contrastive phonetic values*.

#### 6A: Practicing with minimal sentences

The following sentences are distinctly practiced in class to detect the articulatory, auditory, and acoustic differences of [æ] and [ε] vowels.

1. This is a nice GEM / JAM.
2. Do you like eating LESS / LASS?
3. The government SLAPPED / SLEPT.

4. BRAD / BREAD is very useful.
5. He spitted on her FLASH / FLESH.
6. SEND / SAND it carefully.
7. Is that PEN / PAN new?
8. Did you see the MAN / MEN?
9. Is that man in the picture DEAD / DAD?
10. This brand new PAN / PEN leaks.
11. She did not want to talk about the PAST / PEST.
12. That BAT / BET bothered me very much.

*6B: Practicing with contextual clues*

Sentences with contextual clues give real life-like contexts of the sound contrasts. They, they bring in a context to their occurrences.

*6B: Practicing with minimal sentences*

(The following sentences are practiced, modeled on the teacher's exhortations in the class.)

1. My DAD is DEAD.
2. His BED is very BAD.
3. I GUESS they want GAS.
4. The GEM fell in the JAM.
5. Can you LEND your LAND?
6. BRAD wants some BREAD.
7. There is a PEN in that PAN.
8. A BED/BAD friend is not needed now.
9. "SHALL" does not mean "SHELL".
10. You must eat LESS LASS.
11. I saw a FLASH on her FLESH.
12. This LAD LED the way for the army.
13. I HAD seen her HEAD in a big hat.
14. The word "MAN" is the singular form of the word "MEN".

15. They SAID that the queen is very SAD.
16. Do not BEG me for that beautiful BAG.

### *6C: Practicing with Problem sound-focused exercises*

1. They SAID THAT the queen is VERY SAD because she saw her own HEAD in a BAD HAT.
2. My DAD is DEAD, which made me SAD because I was not near his DEATH BED WHEN he PAST away.
3. I and my wife BETH were taking a BET in our BATH WHEN a BAT entered into our BATHROOM.
4. I SHALL put THAT SHELL on your BAD BED to make you SAD.
5. BEN will BAN the LENDING of his VAST LAND just for the price of a VEST.
6. WHEN the GEM FELL into the JAM, THERE was a VERY bright FLASH on her FLESH.
7. MARY will MARRY JACK MERRILY, which will make her MOTHER BETTY VERY HAPPY.

### *7. Making a Summary*

(Summary must be made before the bell rings). Here the teacher creatively repeats the rule given in (5). He can reinforce the importance of the rule through inductive and deductive questionings. (S/he answers and clarifies all of the blurred confusions pertaining to the rule).

### *8. Giving assignments to the students*

Alright, students, prepare following questions. I will collect them in our next lesson. Be serious because this assignment will be added to your final exam points.

(The teacher assumes that there are ten groups in class).

1. Each group will find out ten new minimal pairs from the dictionaries on [æ] and [ɛ] vowel sounds.
2. Each group will prepare 10 tongue twisters modeled on the ones given in 4C. Practice them together.

3. Each group must prepare 10 exercises on minimal sentences as given in 6A. Circulate your material with other groups.

3. Each group must prepare 10 exercises on contextual clues as given in 6B. Circulate your material with other groups.

(T: Students, do you have any questions? I see that you have no questions. Then, class is dismissed.)

## CONCLUSION

The pronunciation of [æ] and [ɛ] vowel phonemes of the British and American English has always been a problem for the Turkish teachers of English (Demirezen, 2003; Demirezen, 2004; Hişmanoğlu, 2004) in form of fossilized errors. This is a case of interfered “phonological habit”(Pennigton,1998), coming from the Turkish language. Another reason behind this pronunciation difficulty for Turks is a cross-linguistic interference of the Turkish phonemic inventory, exerting *backsliding* articulatory effects upon the learning of the phonetic and phonemic inventory of English language as a foreign/second language. It cannot be denied that fossilized pronunciation errors in terms of segmental sound structures in the pronunciation of the non-native learning of a language are inescapable since Turkish and English exhibit different language typologies. Yet this case is not a hopeless fact in that the audio-articulation method is potential enough to improve phonetic memory of the non-native learners of English by generating improved pronunciation behavior.

It also gives the contrastive analysis of L1 and L2 sounds, which are segmentally intervowen in the interlingual competence of the L2 learners. For example, the two different and dialectal articulations of words alongside with their colloquial appearances (GA: General American) can be seen, as indicated in the following examples:

<u>British</u>	<u>American</u>	<u>GA (General Amer.)</u>
Baghdad [bagdad]	[bægdæd]	[bægdæd]
Amsterdam [amstərdam]	[æmstərdæm]	[æmstərdæm]
countdown [kauntdaʊn]	[kæʊntdæʊn]	[kæwntdæʊn]
downtown [daʊntaʊn]	[dæʊntæʊn]	[dæʊntæʊn]



Afghanistan [afghanɪstæn] [æfghænɪstæn] [æfghænɪstæn]

Pakistan [pakɪstæn] [pækɪstæn] [pækɪstæn]

It must be noted that Cambridge American English Dictionary (2004) gives the pronunciation of such words like *countdown* and *downtown* as [kʊntdaʊn] and [daʊntaʊn], but they are distinctly heard as [kæʊntdæʊn] and [dæʊntæʊn] in the broadcasts of CNN and CNBC, demonstrating the colloquial variants of them.

Finally, the learning difficulty of such English vowels like [æ] and [ɛ] for Turkish teachers-on-job and student teachers cannot be denied. Yet they can be rehabilitated by using the sample lesson plan presented in this article to greater extent through an application of the audio-articulation pronunciation teaching method within 50 minutes.

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