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Full Length Research Paper

Turkish EFL pre-service teachers' pronunciation problems

Mehmet BARDAKÇI

Gaziantep University, Turkey.

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This classroom research deals with pronunciation problems that Turkish EFL teacher candidates would encounter. The participants were 22 EFL pre-service teachers with B2 level of proficiency in English. The presentations which were carried out by these participants were analyzed both by the participants themselves and the researcher. The results revealed a dominant mispronunciation of the sound schwa /ə/ along with other sounds such as theta /θ/, engma /ŋ/ and /æ/. The absence of the corresponding sounds of /θ/ and /æ/ in Turkish could be deemed the reason for such pronunciation problems, but the case is not that straightforward for schwa /ə/ as in Turkish vowel inventory there seems to be a similar /ɯ/ sound. This situation brought about the question whether there could be different phonemic dynamics for the sounds schwa /ə/ in English and /ɯ/ in Turkish.

Key words: Pronunciation problems, theta, schwa, engma, EFL pre-service teachers.

INTRODUCTION

Among the universal levels of language, phonology of one's mother tongue is possibly the most difficult one to unlearn. In an attempt to learn a foreign language, an individual can tackle with the most basic syntactic demands of the target language within a relatively short time.

The rationale of semantics, another universal aspect of language, is also not a problem most of the time. On the other hand, pragmatic conventions of a target language are generally problematic especially if the gap between the target and the native culture is big, but these conventions are again learnable.

However, when the topic is the attempt to learn the phonology of a particular foreign language, many of the phonetic dynamics of the mother tongue have to be sidelined. This is where most perceptible problems about foreign language learning set in. It is very difficult to make successful predictions about an individual's mother tongue merely by looking at his/her syntactic predispositions, word choices or pragmatic competence in the target language.

It is the pronunciation in the target language that gives the individual away about his/her mother tongue, because it is a well-established hypothesis (Lenneberg, 1967) which has been around for nearly 50 years that after a certain critical period it is almost impossible to perfectly acquire the sound system of a foreign language. There are also some recent studies claiming that even after this proposed critical period, individuals might attain full control over the pronunciation of the target language (Levis, 2005; Scovel, 2000); however, the results of such studies reflect the exceptions rather than the rules.

E-mail: mbardakci@gmail.com.

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Global pronunciation issues about the English Language

Coined by Selinker in 1972 (Ellis and Barkhuizen, 2005, p. 54), the concept of interlanguage has been used to refer to an in-between phase that nearly all second language learners go through. The learners, according to this concept, are close to the target language but not far away from their native one either, and most of the time this stage is regarded as a system on its own. Second language phonology is also a topic of discussion in this framework.

Oral production in English for non-native English speakers (NNES) has been a topic of discussion for a considerable amount of time, and various stands have been taken about the issue. For instance, since the times when contrastive analysis entered the scene (Lado, 1957), there have been supporters of the idea that the native speakers of English (NES) are ideal models for proper pronunciation, and the learners of English as a foreign language (EFL) should aim at attaining pronunciation skills like those of native speakers. With such a point of view, Eckman (1977) proposed an approach based on markedness. From this respect, marked aspects at any level of a given language will be more difficult to learn or acquire than unmarked ones, and as the degree of markedness go up so will the degree of difficulty. In the same era, error analysis of language learners also started to gain attention (see Corder, 1967), which was in conflict with the contrastive analysis approach because errors of language learners appeared to be a definite system of language at every point during development. Later in the course, it was also discussed that language teaching practitioners were emphasizing suprasegmental features rather than segmental in promoting intelligibility (Avery and Ehrlich, 1992). It might be argued that such foregrounding of suprasegmental features of spoken register may have led to a neglect of the analytical aspects of natural stream of speech.

In one of the groundbreaking works related to the topic Jenkins (2000), referring to the English language as lingua franca, brings the concept of intelligible pronunciation into the foreground. To her, only the core aspects of pronunciation should suffice for the learners of this lingua franca (ELF). Anything outside of this core should be regarded as details which ought to be dealt with later in the acquisition process. She even goes further and proposes to exclude some sounds like sounds /ð/ and /θ/, the weak forms of grammatical words, and pitch movement. It is also claimed that deviations from target forms in these areas will cause no communication problems and some of these features are even unteachable.

Recently, one of the main questions about the issue has been whether the need of a NNES being understood by a NES is greater than the need of a NNES being understood by another NNES. To put it another way, do non-natives try to communicate with other non-natives in English more than they do with native speakers of English? In an attempt to find answers to such problems, Murphy (2014) suggests that English language practitioners should not overemphasize native English speaker models while trying to deal with pronunciation but rather they should include some attention to non-native English speaker models as well.

Another global aspect of pronunciation issues is related to the markedness theory. Although markedness theory itself is not in direct relationship with the concerns of the current study, some insights stemming from this theory could be useful in a couple of ways. The concept of markedness actually dates back to the Prague School, in specific to Nikolai Trubetzkoy and Roman Jakobson (de Lacy, 2007). At its core lies the asymmetric relationship between elements of the same phonological classes. For example, among the set of consonant sounds /m/, /n/, /b/, /d/ the first two, /m/ and /n/, are in a contrast with the last two sounds of the set /b/ and /d/ in terms of nasality because the sounds /m/ and /n/ are nasalized consonants in nature whereas /b/ and /d/ cannot be categorized under this heading. Such dispositions add distinctive features to individual phonemes making them marked in contrast to the other phonemes in the same phonological class. When considered from this perspective, the dental fricatives /ð/ (eth) and its voiceless pair /θ/ (theta) are marked sounds. In addition, the velar-nasal sound /ŋ/ (engma) is also marked. These sounds, like the other marked ones, are problematic both in the first and second language acquisition or learning process.

There are other phonological dynamics acting in this process. For example, there are claims that phonemes have tendencies to attract or repulse each other. One of these claims, the theory of phonemic attraction and repulsion which was proposed by Hill (1936) actually attracted little attention at the time. According to this theory, phonemes in a given language do not act freely but rather on phonological principles of that language, which result in a frequency-based attraction or repulsion among phonemes. For example, the vowel /ɜ/ in English is always followed by the consonant /r/. This phenomenon also causes phonological change in the long run. For example, the pronunciation of the word often (/ˈɒf.ən/ or /ˈɒf.tən/) has been a matter of discussion since the 18th century, and the native speakers of English exhibit a clear inclination to pronounce it as /ˈɒf.ən/. In general, it is a very rare incident to witness phonological changes as they happen to occur over centuries, but in the case of often, a phonological change is being witnessed. This change could be attributed to phonemic attraction and/or repulsion theory as either the consonant /t/ is repulsed and/or the vowels /ɒ/ and /ə/ appear to be in a state of attraction.

A more recent account of such phonetic phenomenon

Table 1. Orthographic representations of the phoneme /ə/.

Orthographic representation	Example	Phonetic transcription(IPA)
a	*approach*	/əˈprəʊtʃ/
e	*travel*	/ˈtrævəl/
i	*incredible*	/ɪnˈkrɛdəbəl/
o	*police*	/pəˈliːs/
u	*suppress*	/səˈpres/
y	*sibyl*	/ˈsɪbəl/
certain letter combinations	*mountain*	/ˈmaʊntən/
unwritten vowel	*rhythm*	/ˈrɪðəm/

is explained within the framework of feature economy approach (Clements, 2003). In the related paper, two approaches which try to shed light on the underlying principles of the structure of sound systems are compared. The feature economy approach claims that speech sounds are organized with a principle which helps languages to maximize the combinatory possibilities of a few phonological features and to generate large numbers of speech sounds. The second approach, namely maximal dispersion, claims that speech sounds tend to be maximally dispersed in perceptual space. The results of this comparison led the researcher to the result that, compared to the dispersion model, the feature economy approach is well supported with universal data, and speech sounds show a tendency to concentrate along just a few feature dimensions in any language.

The perspectives that have been discussed so far are general in nature. However, there have been studies concerning very specific phonological issues like the schwa sound in the English language. Schwa is the most common sound in English. It is a weak, unstressed sound and it occurs in many words. It is often the sound in grammar words such as articles and prepositions. It is a well-established fact that one vowel from the language's inventory is consistently used by speakers of that language to break up ill-formed consonant clusters. In English, this vowel is typically schwa (Hume, 2011)

The term schwa is a Hebrew word in origin and it means 'emptiness' and Hebrew phonology possesses a vowel of the same quality (Skander and Burleigh, 2005, p.37), and this mid-central vowel phoneme is the most common vowel sound in English. It is claimed that 11 % of sounds uttered in an English conversation are schwas (Skander and Burleigh, 2005, p.37). It is a reduced vowel, which means that its acoustic qualities like pitch, stress and duration of articulation are altered making it a weak sound compared to the other sounds in the utterance. Depending on the dialect at hand, schwa may have the following orthographic representations (Table 1).

One can understand from the table that the unusual orthographic variety of schwa makes it very difficult for EFL learners to fix it to a certain orthographic form. That is to say, when an EFL learner tries to deal with the written form of words, the process is relatively easier if the sounds in the target word have fixed orthographic representations, which is the case with most of the English consonants. Therefore, different written representations of schwa are to be considered as one of the causes of pronunciation difficulties among EFL learners.

Pronunciation Issues in Turkish EFL Context

It is a fact that Turkish is a syllable-timed language whereas English is a stress-timed one. In syllable-timed languages, as is the case with Turkish, the more syllables you add to the utterance the more time it takes to utter it, and intonation and stress are not of major importance for communication. However, in the stress-timed languages like English, intonation and stress play an important role in the course of communication.

There are other phonological differences between Turkish and English which cause pronunciation problems among Turkish EFL learners. There appears to be more problems related to the vowels in English than there are with the consonants. The following figure displays the vowels in both languages.

In Figure 1, Turkish and English vowel inventories are displayed together for easier comparison. The Turkish inventory was taken from Zimmer and Orgun (1999, pp. 154–158), and the corresponding inventory was taken from Underhill (2005, p.10). It is obvious from the figure that, with 11 of them, the English language has more vowels than the Turkish language which appears to have eight vowels. This fact might be seen the main reason of the pronunciation problems that Turkish EFL learners go through. Within the framework of the current study, the schwa phoneme is of major importance, and its nonexistence in the Turkish vowel inventory should be noted aside. Generally speaking, schwa is similar to the vowel /ɨ/, a high central unrounded vowel which is common in Indo-European languages, or to /ɯ/, a high back unrounded which belongs to the Turkish vowel inventory. In fact, the closest sound to schwa in English is the /ɯ/ sound in Turkish. The only visible distinction between the schwa and the /ɯ/ sound in Turkish is the lip

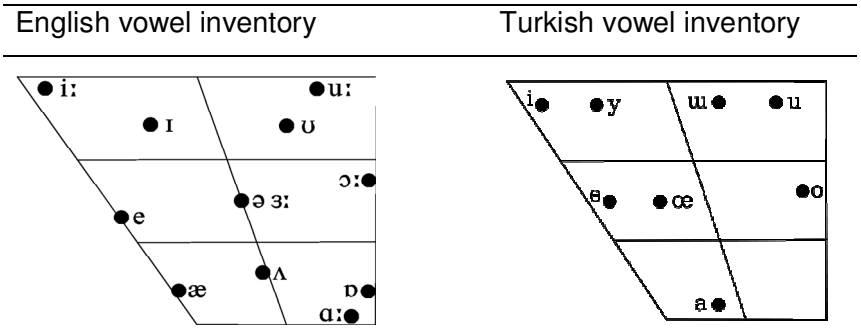

Figure 1. English and Turkish vowel inventories.

movement. In this respect, the schwa is neutral whereas the /ɯ/ is spread. One interesting point worth mentioning here is that, although not officially listed in any inventory, native Turkish speakers actually produce schwa during natural conversations as a sort of filler.

Another point worth mentioning at this point is that Turkish language has a peculiar front/back vowel harmony issue. According to this naturally occurring process, with some exceptions, if a certain word in Turkish contains front vowels like /i/, /y/, /e/, or /œ/, it cannot contain back vowels like /w/, /u/, /a/ or /o/. In addition to front/back harmony, there is also another peculiarity in the Turkish vowel system which is called rounding harmony. According to this specific system, unrounded vowels (/i/, /e/, /w/ and /a/) cannot come together in a word that contains the rounded vowels (/y/, /œ/, /u/ and /o/). These peculiarities of the Turkish vowel system might be among the many reasons for pronunciation problems that Turkish EFL learners go through.

There have been some important studies exploring pronunciation difficulties of Turkish EFL learners. In one of these studies, Demirezen (2007) claims that fossilized pronunciation errors for Turkish EFL learners are consonants like / t---θ, d---ð, v---w /, and vowels like / e---æ, e---ɛ, æ----ɛ, ə---æ, æ---Λ, ɔ----ow, ʊ ----- ʊw/. Demirezen (2010) also claims that since the schwa sound does not have a corresponding sound in the Turkish vowel inventory, its articulation is somehow compromised by Turkish EFL learners. The phonemic effects of this sound over grammatical categories are emphasized, and since it causes semantic changes, it sure has a potential of leading to communication breakdowns. He also dwells on the reasons for the mispronunciation of schwa by Turks and reaches to the conclusion that mother tongue interference, vowel reduction, connected speech, lack of professional instruction are some of the causes that lead to the mispronunciation of this phoneme by Turks.

In their studies, which was carried out with Turkish EFL learners, Geylanioğlu and Dikilitaş (2012) examined the pronunciation issues about the sounds schwa /ə/, etha /ð/, theta /θ/ and engma /ŋ/. The subjects in this study were given isolated words which involve these sounds. The researchers found that the subjects have serious difficulties in pronouncing all of these sound. The study suggests that, in order to facilitate the pronunciation of these sounds, the students could be trained through conceptualization methodology, which helps learners to form an idea or principle about what is to be learnt.

In another related study Varol (2012) investigated the effects of the Turkish sound system on Turkish speakers' English pronunciation by making use of loanwords from Indo-European languages. The participants were asked to read 21 words in isolation and in sentences. After audio-recording, the data was evaluated in terms of approximation to native pronunciation through a 5-point scale. It was revealed that Turkish adult speakers had difficulty in pronunciation of phonemes such as θ, ð, ɹ, t and æ. because of the participants' native language. It was also observed that the participants tended to use sounds with the closest Turkish phonemes t, d, r, e as substitutes.

It is a fact, and quite natural, that Turkish EFL learners do go through problems in terms of pronunciation.

Among the prominent ones, we can see the schwa /ə/, the etha /ð/, the theta /θ/, the engma /ŋ/ and the phoneme /æ/. This phenomenon, in fact, is related to the effect of Turkish sound system over English pronunciation. For instance, although there are no remarks in the literature reporting pronunciation difficulties concerning the phonemes /r/ and /l/ in Turkish EFL contexts, particularly in the teaching of rhotic accent of English, the related literature abounds with research reports concerning problems with these sounds (Goto, 1971; Minematsu et el., 2002 for Japanese; Fachun and Pengpeng, 2009 for Chinese; Hallé et al., 1999 for French and Goldstein et al., 2005 for Spanish ESL and EFL contexts).

As is clear from the picture depicted, the related literature lacks studies concerning pronunciation issues of Turkish EFL teacher candidates. Therefore, taking into account the points made thus far, this study aims at answering the following research questions:

1) What are the phonemes in the English language that Turkish EFL pre-service teachers commonly mis-pronounce?
2) What are the main reasons for these pronunciation problems?

METHOD

Research design

Since the current study is learner-centered, teacher directed, collaborative, context specific and relevant to the participants and their contexts, its research paradigm fits to what is generally referred to as classroom research (Angelo and Cross, 1993). To begin with, in-class observations of Turkish EFL pre-service teachers at a state university formed the basis of this study. In numerous classes, Turkish EFL learners were observed while trying to articulate utterances in English.

Mostly because of individual differences, there were many problems related to many different theoretical issues. However, there appeared to be commonalities concerning pronunciation problems among the teacher candidates. The main concern of this study is to dwell on these commonalities and determine related patterns, if there are any.

Participants

This study was carried out during the fall of 2012 academic year. 22 pre-service language teachers participated in the current study. Most of the participants were freshman students who had completed an intense English preparatory program which aims at C1to C2 levels of proficiency in English.

However, in order to get a clearer picture, their proficiency levels were also tested through a multiple choice diagnostic test (Allen, 1990), and the test results revealed that the participants were actually at B2 (intermediate) level of proficiency on average.

Classroom procedures

In the first week of the treatment, students were trained about the IPA symbols and the articulation of the sounds by giving specific examples. In the following week, having learned how to read IPA symbols, some dictionary studies were carried out. In the third week of the study, pronunciation practices, with specific attention to problematic sounds of English, were done. After training about English phonology, the participants were asked to prepare presentations in English, and the topics of the presentations were left to their own choices. The topics were of interest to the participants, such as interesting facts or information about educational or cultural aspects. Once the topics were determined by the learners and checked by the researcher, the presentations started.

During these presentations, the presenters were videotaped via a high-definition camera recorder. The learners' pronunciation errors/mistakes were also noted down by the researcher. All of the presentations lasted 20 min on average. After the recordings were completed, they were handed out to the learners and the learners were asked to watch their own presentations and make a list of the words that they thought they mispronounced. During this process, the participants were told to ignore the intonation and stress patterns of the mispronounced words. While doing so, they were advised to use an online digital dictionary with pronunciation support. In our case it was the Cambridge online dictionary which is freely available at http://dictionary.cambridge.org/. This assignment functioned as a double-check for the mispronounced words on the learners' side.

After all the presentations were completed, a list of mis-pronounced words was made collectively. That is, each student compared his/her own list with other learners. The aim of this activity was to foreground the common and salient mispronounced items among the learners. While composing the list, only the most notable mispronounced words were recorded. The list which was formed by the researcher was also compared with the ones made by the learners. As a result, a list of 120 items which was checked both by the researcher and the learners themselves was compiled.

This list was turned into a table in order to find out the most prominent features of the mispronounced words and the patterns to emerge. These commonalities and patterns were then shared with the participants with an aim to raise awareness of the nature of their own oral production.

Table 2. Frequency of mispronounced sounds by the participants.

Problems	n	%
ə	54	39.42
Diphthongs	21	15.32
æ	15	10.95
w	11	8.03
r	9	6.57
ŋ	6	4.38
θ	4	2.92
Others	17	12.41
Total	**137**	**100**

Limitations of the study

As this study is a classroom research in nature, the results are highly context-specific and limited to the environment in which it was carried out. However, it shouldn't mean that these results cannot be integrated into the related literature at certain points.

FINDINGS

In this section, the results gleaned from the analysis of the mispronounced words will be discussed. Commonalities and patterns among these words will be highlighted and, by taking into account the phonemic attraction/repulsion theory which has been mentioned previously, the relationships between the mispronounced phonemes will be presented.

A large variety of words were observed to be mis-pronounced during the presentations; however, the list which was constructed in collaboration with the participants does not reflect all the pronunciation errors/ mistakes surfaced during the presentations. Only the most noticeable and salient ones were recorded and brought forward. Table 2 contains the common problematic sounds determined during the presentations.

The first and maybe the most important result of the

Table 3. Mispronounced words that contain the phoneme /e/.

Word	Pronunciation (Learner)	Pronunciation (US)
About	/ebaʊt/	/əbaʊt/
America	/ʌmerikʌ/	/əmerikə/
Approach	/eprotʃ/	/eprəʊtʃ/
Approve	/epruːv/	/əpruːv/
Area	/area/	/eriə/
Award	/evard/	/əwɔːd/
Biography	/bɪogrʌfi/	/baɪɒgrəfi/
Character	/kʌrekter/	/kerɪktər/
Develop	/develop/	/dɪveləp/
Dictator	/dɪktʌtœr/	/dɪkteɪtə/
Foreign	/foreɪn/	/fɒrən/
Fortunate	/fortʃuneɪt/	/fɔːtʃənət/
hypothesis	/hɪpotesɪs/	/haɪpɒθəsɪs/
Illegal	/ɪllegʌl/	/ɪliːgəl/
Major	/medʒor/	/meɪdʒə/
Mosquito	/moskito/	/məskiːtəʊ/
Mystery	/mʌjstrɪ/	/mɪstəri/
Percent	/pœrsent/	/pəsent
Probably	/probʌbli/	/prɒbəbli/
Society	/sosaɪəti/	/səsaɪəti/
Success	/sʌkses/	/səkses/
technology	/teknolodʒi/	/teknɒlədʒi/
Ultimate	/ultɪmeɪt/	/ʌltimət/
Vietnamese	/vɪetnʌmiːz/	/viːətnəmiːz/
Visible	/vɪjzəbəl/	/vɪzəbəl/

current study is that among the 120 items in the list, detailed in the methodology section, 54 words (nearly 40 %) contain the phoneme schwa /ə/. In other words, this sound is the most commonly mispronounced phoneme among others. However, in some situations the participants were able to articulate this sound or the Turkish equivalent /ɯ/ sound. The situations that are concerned with the articualtion of this sound by Turkish EFL learners are analysed in the following three tables. In order to demonstrate the patterns that occurred, these mispronounced words were divided into three groups. In the first group of words, the /ə/ phoneme is itself mispronounced. In the second group of words, the participants are able to produce this sound or an approximation to it, yet the word is still mispronounced. In the last group of words, this sound occurs together with the /æ/ phoneme, and in all such instances the related word is mispronounced without any approximations. To begin with, in Table 3 some of the mispronounced words that include schwa are exhibited.

In the table, the first part of the words that contain the sound schwa are shown. This group includes the mispronounced words with schwa in them, but there seems to be no particular pattern among these words. The effect of Turkish (the participants' mother tongue) seems to be playing an important role here. Since in Turkish there is a sort regularity in terms of orthography and pronunciation, and since most Turkish EFL learners first encounter with words in English in their written forms, they tend to pronounce these words as they are represented on paper. However, even this tendency is not consistent with the underlying rationale. For example, one of the mispronounced words in the list, America, is pronounced as /ʌmerikʌ/ by two the participants while it should be pronounced as /əmerikə/. The problem is while all the sounds in this word are pronounced in accordance with Turkish pronunciation conventions, the letter c in this word, which represents the phoneme /ʤ/ in Turkish, is pronounced as /k/ as in the English language. It is very likely that some conventions of English pronunciation are learned or maybe acquired by these learners, but some others seem to be missing from learners' repertoires thus creating a situation which is in line with the concept of interlanguage. In fact, almost all the other words in the list above like *illegal, foreign, probably* or *ultimate* share this common inconsistency. In addition to this, being not aware of the orthographic variety of schwa, the learners are producing this sound in line with this variety. Therefore, what can be interpreted form Table 3 is that both the first language of the participants and the

Table 4. Mispronounced words that contain /ə/ or /ɯ/.

Word	Pronunciation (Learner)	Pronunciation (US)
achievement	/etʃivmɯnt/	/ətʃivmənt/
ancient	/enʃɯnt/	/eɪnʃənt/
appreciation	/epreʃieʃɯn/	/əpri:ʃieɪʃən/
author	/o:tɯr/	/ɔ:θə/
business	/bjzɯnɯs/	/bɪznəs/
career	/kerɪɯr/	/kərɪər/
circle	/sœrkɯl /	/sɜ:kəl/
confident	/konfɪdɯnt/	/kɒnfɪdənt/
durable	/dureɪbɯl/	/djʊərəbl/
entertainment	/enterteɪnmɯn/	/entəteɪnmənt/
experience	/eksperɪɯns/	/ɪkspɪərɪəns/
higher	/hajɯr/	/haɪə/
honor	/honɯr/	/ɑ:nə/
kingdom	/kɪnkdɯm/	/kɪŋdəm/
pioneer	/pajnɪɯr/	/paɪənɪər/
popular	/populɯr/	/pɒpjʊlə/
pronunciation	/pronaʊnsieɪʃɯn/	/prənʌnsieɪʃən/
revolution	/rɪvolu:ʃɯn/	/revəlu:ʃən/
signal	/saɪgnɯl/	/sɪgnəl/
water	/votɯr/	/wɔ:tər/

orthographic variety of the sound schwa appear to be the main reasons for the pronunciation problems that Turkish EFL learners go through with the words listed in the table.

The participants in the current study were not always unable to produce schwa. In some situations, as represented in Table 4, they were somehow able to produce this sound or an approximation for it. What is meant by approximation in this context is the substitution of a problematic sound in the target language with a close sounding one in the first language phoneme inventory. The following table summarizes these instances.

In Table 4, another group of mispronounced words that contain schwa is listed. In the list, since it is virtually impossible to determine the exact lip movements of the participants, the phoneme represented with /w/ could also be an approximation for schwa as well. The problems with the words in the list are not related to schwa itself but possibly to other phonological issues. What is noteworthy in the table is that approximation to schwa (or schwa itself) occurs at the end syllables in all of the words listed in the table. In other words, the participants are able to produce this sound (or a close one) when it occurs at the end of a word. In no other situation were the participants able to produce this sound or another sound close to it.

It could be discussed that these pronunciation problems are occurring because of the vowel harmony issues in Turkish which were mentioned previously. Although there are clear and natural tendencies concerning the vowels in the Turkish language, the vowel harmony system do not seem to apply here. When words like *ancient, circle, distance* and *experience* (and many others) in Table 4 are analyzed from this perspective, Turkish EFL learners are actually producing utterances which are not acceptable in Turkish pronunciation system. In the utterances listed in this table, the participants bring together the front Turkish vowels (/i/, /y/, /e/, /œ/ and /a/ with the back ones (/w/, /u/ and /o/). The words mentioned earlier are pronounced respectively as follows: /enʃɯnt/, /sœrkɯl /, /dɪstɯns/ and /eksperɪɯns/, and it is quite obvious that, although they are not pronounced appropriately, they are not acceptable in Turkish pronunciaton system either. This, again, seems to be a characteristic of interlanguage. The participants in the current study are in a kind of interim phase in terms of phonology which resembles both to English and Turkish, yet isn't quite acceptable for neither.

The last finding of the current study to be discussed is related to an interaction of two English phonemes, schwa and the /æ/ sound. In the third group of the words which were mispronounced by the participants, these two sounds occur together as listed in the Table 5.

In Table 5, a group of mispronounced words are listed together because there appears to be a common pattern in all them. All the words listed in the related table include the phonemes /æ/ and /ə/. It appears that when these two sounds come together in a certain word, the participants cannot pronounce this word properly, and it is not an either-or situation; they mispronounce both of

Table 5. Mispronounced words that contain /ə/ and /æ/ at the same time.

Word	Pronunciation (Learner)	Pronunciation (US)
accurate	/ekjreɪt/	/ækjərət/
advocate	/edvokeɪt/	/ædvəkeɪt/
analysis	/enʌlisis/	/ənæləsɪs/
answer	/ensvɯr/	/ænsə/
bachelor	/betʃelor/	/bætʃələr/
category	/kʌtegori	/kætəgri/
factor	/fʌktœr/	/fæktə/
program	/progrʌm/	/prəʊgræm/
salary	/sʌlʌri/	/sæləri/

the sounds. In the list that includes common mispronounced words, there are 15 mispronounced words with the sound /æ/ (see Table 2), and nine of them also include /ə/ as exhibited in Table 5. This situation might suggest a kind of phonemic attraction between these two sounds which has a potential to create pronunciation problems for certain EFL learner groups. The other vowels besides schwa do not tend to display such a pattern, at least with the words recorded in the current study.

DISCUSSION AND CONCLUSION

In conclusion, for Turkish EFL learners, at least for the group that participated in the current study, schwa is the most commonly mispronounced phoneme among others mostly because of its orthographic variety. The participants also have trouble pronouncing the phonemes /θ/, /ŋ/ and /æ/. In addition to this, finding of the current study is that, there appears to be a potential problem for Turkish EFL learners with the words where the sounds /æ/ and /ə/ couple, which is very likely to stem from a phonemic attraction between these two sounds. That is to say, phonemic and phonetic dynamics of the Turkish language seem to operate in different ways than those of the English language, at least for the sound schwa. It is interesting that the same potential problem was reported in a recent study carried out by Gan (2012). Moreover, if /ə/ is in the final position, Turkish EFL learners are able to produce the sound, or an approximation for it. However, if it is in the initial position, they are unable to produce it most of the time. L1 influence is obvious in these problematic sounds, however, in certain situations Turkish vowel harmony, while the participants are speaking English, seem to be ignored.

The results confirm the findings of the related literature. In terms of methodology, it is like a tradition to make EFL learners read out isolated lexical items, record, and analyze the transcriptions (Demirezen, 2005, 2010; Geylanioğlu and Dikilitaş, 2012; Hismanoglu, 2009). In the current study, however, a different approach was taken by recording learners' utterances as they naturally occur. To put it in another way, the problematic sounds were not predetermined, but rather they were determined after general analyses.

Demirezen (2010) states that mother tongue interference could be counted for fossilized pronunciation problems for Turkish EFL learners by stating that there seems to be no corresponding sound for schwa in the Turkish vowel inventory. However, as he also acknowledges, the vowel /w/ in Turkish is quite similar to /ə/ in terms of both manner and place of articulation. This similarity raises the question as to why Turkish EFL learners experience significant amount of problems in articulation of this sound. The researcher of the current study holds the idea that one of the parameters that cause such a fossilization phenomenon is the different attraction and/or repulsion dynamics between English and Turkish. This point becomes important because the lack of intelligible pronunciation of the sound schwa is more likely cause communication problems as it has its own dynamics in the natural stream of speech which affect not only segmental but also suprasegmental aspects of speech, like intonation and stress.

In practice, the finding concerning the relationship between the phonemes /ə/ and /æ/ is supposed to channelize Turkish EFL teachers into considering this relationship while trying to teach either of them. In other words, as with the case of collocations in vocabulary instruction, such relationships among phonemes should be foregrounded. It is obvious that Turkish EFL learners go through problems in transition from the tongue and lip position that is needed while producing /æ/ to the tongue and lip position needed for /ə/. These two phonemes should be instructed together in order to highlight their relationship. Otherwise, if they are taught separately, and even if they are produced properly by the learners, when these two phonemes couple in a certain word, they might not be able to make the necessary transition in the vocal tract and end up with mispronunciation or approximation of some kind. Furthermore, if EFL learners learn how to deal with the peculiar sound schwa, they might also improve their control over other phonemes.

The current study, although inherently a classroom research, could be regarded important as it fills a gap in the related literature concerning pronunciation problems of Turkish EFL teacher candidates. Unlike what has been accepted, sounds like /θ/ and /ð/ are very low in frequency and this is why their mispronunciation shouldn't pose communication breakdowns as the context of the conversations will help interlocutors to deduce the mispronounced words. From this perspective, in addition to a frequency-based approach to phonemes, the concept of intelligibility should also be promoted among English language practitioners. Furthermore, as the results of this study clearly show, the phonemic interactions among English phonemes, like the concept of collocations in lexicology, should also be taken into consideration to certain extents.

Recommendations for further studies

This study ignores stress and intonation problems of the participants. This point remains to be researched as there is a serious gap about this issue in the related literature. In addition to this, Turkish EFL learners' attitudes towards pronunciation problems might help us understand the underlying problems to an extent. In relation to this point, Turkish EFL teachers' ideas concerning the pronunciation problems of EFL learners could be investigated as it is very likely that they are spending too much time on low frequency sounds which are nearly impossible to teach (Jenkins, 2000).

Conflict of Interests

The author have not declared any conflicts of interest.

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