

**AN EVALUATION OF JUNCTURE PHONEMES
OF IF-STATEMENTS IN PROSPECTIVE
TURKISH TEACHERS OF ENGLISH**

**İngilizce Öğretmen Adaylarında Koşul Tümcelerindeki
Duraksama Sesbirimlerinin Değerlendirmesi**

İbrahim Halil TOPAL¹

Abstract

The purpose of the present study is to investigate the competence levels of prospective Turkish teachers of English in perceiving and producing the juncture phonemes of *If*-statements accurately in English. It further aims to rehabilitate any occurrences of errors by way of remedial sessions utilizing various auditory and visual exercises on the recognition and production of juncture phonemes utilizing Grammar Intonation Model (Cauldwell & Hewings, 1996) and Audio-Articulation Method (Demirezen, 2003). The study was carried out at the English Language Teaching (ELT) department of a state university in Turkey in association with 61 pre-service Turkish teachers of English in the spring term of 2015/16 academic year. Both written and oral pre-test and post-test were administered to evaluate the participants' level of competence on the perception and production of juncture phonemes in *If*-statements. Data were analyzed both descriptively and inferentially. It was discovered that there was a significant advancement in the participants' competence in relation to the recognition and production of juncture phonemes. It was further revealed that remedial training sessions reinforced the improvement of the participants' problems with juncture phonemes.

Keywords: juncture phonemes, *If*-clauses, Grammar Intonation Model, Audio-Articulation Method, teacher education

Özet

Bu çalışmanın amacı, İngilizce öğretmen adaylarının şart tümcelerindeki duraksama sesbirimlerini doğru algılama ve kullanmadaki başarı durumlarını araştırmaktır. Ayrıca, İşitsel Sesletim Modeli (Demirezen, 2003) ve Dilbilgisi Tonlama Modeli'nden (Cauldwell & Hewings, 1996) yararlanarak, duraksama sesbirimlerinin algılanması ve kullanımıyla ilgili çeşitli işitsel ve görsel alıştırma ve görsel alıştırma yöntemlerinden faydalanarak iyileştirme oturumları aracılığıyla ortaya çıkabilecek hataları iyileştirmeyi de amaçlar. Çalışma, 2015/16 akademik yılında bahar döneminde Türkiye'deki bir devlet üniversitesinin İngilizce Öğretmenliği bölümünde okuyan 61 İngilizce öğretmen adayıyla gerçekleştirilmiştir. Katılımcıların *If* şart tümcelerindeki duraksama sesbirimlerindeki başarı seviyelerini ölçmek amacıyla hem yazılı hem de işitsel öntest ve sontest yapılmıştır. Elde edilen veri, betimsel ve çıkarımsal olarak incelenmiştir. Katılımcıların duraksama sesbirimlerinin algılanması ve kullanımında büyük bir ilerleme kaydettiği keşfedilmiştir. Ayrıca, iyileştirici oturumların katılımcıların duraksama sesbirimleriyle ilgili problemlerinin düzeltilmesine katkıda bulunduğu ortaya çıkarılmıştır.

Anahtar Kelimeler: duraksama sesbirimleri, şart cümleleri, Dilbilgisi Tonlama Modeli, İşitsel Sesletim Modeli, öğretmen eğitimi

¹ Lecturer, Gazi University, email: ibrahimtopal@gazi.edu.tr

1. INTRODUCTION

In Turkish teacher education context, English intonation is a disregarded area and thus studies do not suffice (Seferoğlu, 2005; Hişmanoğlu, 2009; Arslan 2013; Demirezen, 2015a; 2015b; 2015c; 2015d; 2015e). Considering the significance of intonation (Jenkins, 2002; Celce-Murcia, 2010; Murphy, 2014), it is urgent that this issue brought to the attention of teachers and teacher educators and prospective Turkish teachers of English be supplied with thorough and systematic instruction on intonation. In order to achieve this aim, intonation must be incorporated into the curriculum of foreign language teacher education for effective learning and teaching opportunities. In this regard, Turkish teachers of English are expected to employ correct intonation patterns and juncture phonemes in advance of instructing them. Therefore, fostering the competency levels of English as a Foreign Language (EFL) teachers is as important as the instruction of intonation to EFL learners.

Juncture phonemes, one of the elements of intonation along with primary stress and pitch phonemes, are “the phonetic boundary features which may demarcate grammatical units such as morpheme, word or clause” (Crystal, 2008). Juncture phonemes are salient in that their absence will cause a meaning shift and their existence will signal the end of an utterance in varying degrees. Several studies support the view that there is a strong relationship between the correct use of juncture phonemes and intelligibility (Paterno, 2003), that fluency in speech is about the use of pauses in utterances (Chambers, 1997, cited in Götz, 2013), and that juncture phonemes are employed to distinguish between several vowels and consonants (Brown, 2014). In conclusion, the recognition and production of accurate juncture phonemes will lead to the improvement of communication. Additionally, teaching juncture phonemes to teacher candidates is of great importance in terms of professional competence, development and work ethics.

Given the fact that intonation bears great importance, juncture phonemes in particular, for meaningful conversations and that “a rather extensive gap has developed between the theoretical investigation of intonation and the implementation of sound pedagogical materials” (Lantolf, 1976, p. 267), this study intends to evaluate the level of competence of prospective Turkish teachers of English and remediate their problems with juncture phonemes of *If*-clauses if necessary. By doing so, the present study aims to contribute to the literature of Turkish teacher education context on practical aspects along with theoretical ones. It can therefore be considered significant as “present intonation research is almost completely divorced from modern language teaching and is rarely reflected in teaching materials, which continue to rely on outdated and inaccurate descriptions of intonational forms and functions” (Levis, 1999, p. 44).

2. REVIEW OF LITERATURE

2.1. Juncture and Juncture Phonemes in English

Juncture is formally a suprasegmental phonemic cue, a means by which a listener can distinguish between two otherwise identical sequences of sounds that have different meanings (Nicolosi et al., 2004). As Crystal (2008) pointed out, it helps to identify morphemes, words, or clauses. Juncture phonemes can be identified in a number of ways. For Skandera and Burleigh (2005), this is accomplished through pauses and word boundaries. Picheny et al. (1986), on the other hand, asserted that long and more pauses are used by individuals for clearer speech. With regard to the types of juncture phonemes, data in the following table were summarized by Demirezen (2013, p. 207).

Table 2.1

Types of Juncture Phonemes in English

Juncture Phonemes	
<i>Internal Juncture</i>	<i>External (Terminal) Juncture</i>
Internal Close Juncture Phoneme	Falling Juncture Phoneme /↘/
Internal Open Juncture Phoneme /+/	Rising Juncture Phoneme /↗/
	Sustained Juncture Phoneme /→/
	Rise-Fall Juncture Phoneme /↗↘/
	Fall-Rise Juncture Phoneme /↘↗/

To distinguish between open and close juncture phonemes, the following examples can be provided.

(i) *Open Juncture Phoneme*

a board /ə bɔrd/

(ii) *Close Juncture Phoneme*

aboard /əˈbɔrd/

In the example above, the words given can only be distinguished by pause and stress in speech. For this reason, pausing in speech plays a significant role in identifying the lexical groups. Falling and rising terminal junctures can be exemplified as follows.

(i) *Falling Terminal Juncture*

It was great /↘/

(ii) *Rising Terminal Juncture*

It was great /↗/

The intended meaning of the speaker can only be understood through intonation in the above example. In the first sentence, the juncture terminates the sentences. In other words, it signals the end of the utterance. However, the second sentence is converted into an interrogative although it seems as a statement in writing with the inclusion of another juncture phoneme. Regarding the examples about the other types of juncture phonemes, the following sentences can be illustrated.

(i) *Sustained Terminal Juncture*

The coach, who is in charge of the team now, will resign at the end of the season

(The coach→ who is in charge of the team now→ will resign at the end of the season)

The use of comma(s), as in the example above, necessitates the employment of sustained juncture phonemes, which indicate a short pause in the place of punctuation marks. According to Demirezen (1986), sustained juncture is heard on both sides of the

appositive phrases which give extra information on the subject of the sentence to which it belongs.

(ii) *Rise-Fall Juncture Phonemes*

What time does it start? /ˈˌ/

(iii) *Fall-Rise Juncture Phonemes*

She called but didn't talk? /ˌˈ/

As can be seen in the above examples, rise-fall juncture phonemes are used with *Wh*-questions while fall-rise juncture phonemes are used with declarative questions. The use of rise-fall juncture phonemes requires a rise in the pitch of the voice at the beginning of an utterance and a fall in the end while it is the opposite in fall-rise juncture phonemes.

As to the focus of this study, *If*-clauses, the employment of juncture phonemes is twofold. Firstly, the sentence takes a sustained juncture phoneme between the dependent and independent clauses and a falling juncture at the end when the main clause is preceded by an *If*-clause. To illustrate,

(i) *If you don't finish your homework, you can't play computer games.*

(If you don't finish your homework→ you can't play computer gamesˌ)

Secondly, there are two occurrences of juncture phonemes when the main clause precedes the *If*-clause: (1) a combination of sustained and falling terminal juncture, (2) falling terminal juncture only. The second instance is encountered when only one of the words in the whole sentence gets a primary stress.

(i) *There would be none left if they bought them all.*

(There would be none left→ if they bought them allˌ) (Instance 1)

There would be none left if they bought them allˌ) (Instance 2)

2.2. Teaching Junctures and Its Significance

The demarcation of grammatical units in speech bears great significance in that it may cause breakdowns in communication. Therefore, the correct use of pauses, junctures in other words, in speech plays a key role here. Cutler and Butterfield (1992), for example, asserted that word boundaries are seldom marked and therefore it is very difficult to identify the beginning of new words in continuous speech. Pickering (2002) claimed that juncture has a salient function. In this respect, Paterno (2003) contended that the relationship between the correct use of juncture and intelligibility is strong. The examples given by Brown (2014, p. 94) explain the significant nature of junctures in speech.

- (i) Is the classroom big enough?
- (ii) Has the class room enough to move around?

The first consonant in the examples above runs naturally into the second and thus makes junctures an indispensable part of connected speech. For this reason, junctures must be employed appropriately so as to convey the intended meanings or emotions of the speaker. Taking into consideration the discussion made so far, it can be concluded that the recognition and production of appropriate and accurate juncture phonemes in speech will result in bettered communication. Being competent in recognizing and producing the correct juncture phonemes and their instruction is very important for Turkish teachers of English in terms of professional identity, competence, development and work ethics.

2.3.Methods for Teaching Juncture Phonemes

To begin with, juncture phonemes can be taught through imitation, which is the basic form of pronunciation/intonation practice where learners listen to a native-speaker and repeat the model and try to be as fluent and accurate as possible. Similarly, “shadowing” technique where learners listen to the selected section of a piece of natural conversation and then talk along with the voice in the recording was suggested by Marks (1992). Matching exercises can also be beneficial for the teaching of juncture phonemes. Such exercises require learners to match what they hear to a written form or an appropriate context. Another method for juncture instruction can be realized through speech visualization technology encouraged by several scholars (Anderson-Hsieh, 1992; Levis & Pickering, 2004; Chun, 2013). Anderson-Hsieh (1994) claimed that suprasegmentals can be best taught through instantaneous visual feedback through the use of appropriate equipment. However, it must also be borne in mind that the effectiveness of intonation in connected speech can only be achieved through contextualized practice with the inclusion of the elements of intonation.

2.4.Factors Influencing the Teaching of Juncture Phonemes

Several factors were considered to be the predictors of incorrect use of juncture phonemes in English. First of all, the complex nature of prosody/intonation as asserted by Mitrofanova (2012) leads to the difficulty of acquiring intonation without special training since it can easily be replaced by habitual L1 tunes. Secondly, the prosodic typology of English and Turkish causes learners to have difficulty in acquiring the accurate intonation patterns or juncture phonemes as Turkish is a syllable-timed language while English is stress-timed. Another factor is teachers’ lack of competence and interest in teaching intonation/junctures. Gilbert (2008), on this issue, claimed that teachers do not have enough time to give proper attention to this aspect of English instruction and they avoid teaching pronunciation altogether due to discouraged results and students. Finally, phonological awareness as described by Anthony and Francis (2005) as “an individual’s sensitivity to the sound structure of oral language” (p. 256) is a salient factor affecting the learning of juncture phonemes. Ventakagiri and Levis (2007) stated that phonological awareness might affect the comprehensibility of EFL speech and added that large amounts of overt knowledge of phonological patterns and rules might lead to the realization of higher level of comprehensibility in speech. For all these reasons aforementioned, teachers of English avoid teaching the intonation of English, namely, primary stress, pitch and juncture phonemes respectively.

2.5.Previous Research on Juncture Phonemes

Juncture phonemes were researched in both Turkish and non-Turkish contexts. In non-Turkish contexts, it was discovered that appropriate use of pauses in speech affect intelligibility and fluency (Blau, 1990; Fayer & Krasinski, 1995; Towell et al., 1996). In Turkish contexts, however, there is a huge scarcity of research on teaching and learning juncture phonemes. In a study conducted by Demirezen (2013), it was found that phonemes no near native-like intonation is achievable without a systematic teaching of juncture as juncture phonemes are potential determinants of building non-native accents. Due to this scarcity of research on junctures, Demirezen (2009) maintained that teacher training curricula of teacher education programs in Turkey must incorporate the analysis and practice of English intonation in relation to stress, pitch, and especially juncture.

With regard to the focus of this study, *If*-statements serve both as a protasis marker and as an interrogative subordinator and therefore the difference between the argument and non-argument can only be understood from the intonation or punctuation (Zaefferer, 1991). This argument can be illustrated in the example below.

- (i) He will do it if she asks for it.
- (ii) He will do it, if she asks for it.

If presents an interrogative clause and could be replaced by whether in the first example while it represents a conditional clause in the second and it can only be recognized with the use of an appropriate pause in speech. About this phenomenon, Chen (1999) emphasized the relationship between pauses and punctuation and suggested that the information provided by pauses be crucial. It must be reminded here that the research on the juncture phonemes of *If*-clauses is almost zero to the best knowledge of the researcher.

3. METHODOLOGY

In align with the discussion made so far, the following research questions were formulated for this study.

1. Is there a statistically significant difference between the pre-test and post-test results of the participants in terms of recognition and production of accurate juncture phonemes of *If*-clauses?
2. Do prospective Turkish teachers of English pause when a dependent clause is used before an independent clause in *If*-conditional sentences in respect to commas?
3. What are the overall pre-test and post-test percentages of the participants in terms of recognition and production of the correct juncture phonemes of *If*-clauses?

3.1.Research Design

In order to find answers to the research questions of this study, a quasi-experimental design - one-group pretest-posttest design - was administered. Both written and oral pre-tests and post-tests were given to the participants in that the first aims to assess their

competence in recognition while the second aims to evaluate the production of the accurate juncture phonemes of *If*-clauses. Both written and oral tests consist of 12 *If*-statements, which consist of the corpus of this study. In the written test, the participants were asked to choose the correct juncture phonemes in 12 multiple-choice questions equally divided in Type 1, Type 2, and Type 3 conditionals consecutively. In other words, there were 4 questions on each conditional type aforementioned. Additionally, in each conditional type, *If* is at the beginning in two of the four sentences while it is in the middle in the other two. In the oral test, the participants were asked to read aloud the same 12 sentences in a stress-free environment and record their voices while reading. The sentences in the corpus of this study were selected based on some criteria such as the quality of sound and the length of the sentences with the help of three experts in the field. The sentences were gleaned from Longman Dictionary of American English (2008), Longman Dictionary of Contemporary English (2012), and several course books and were downloaded through Audacity program in 44100 Hertz. The corpus of this study is illustrated along with their soundwaves below.

/If my kids go to a friend's house → they'll call me ↓/ (Juncture Phoneme) /→ / ↓/



Figure 1. Sentence 1

/ If the crops fail again → it will be a calamity for the country ↓/ (Juncture Phoneme) /→ / ↓/



Figure 2. Sentence 2

/ Kim will be disappointed → if she figures it out ↓/ (Juncture Phoneme) /→ / ↓/



Figure 3. Sentence 3

/ You'll enjoy it if you read it ↓/ (Juncture Phoneme) /↓/

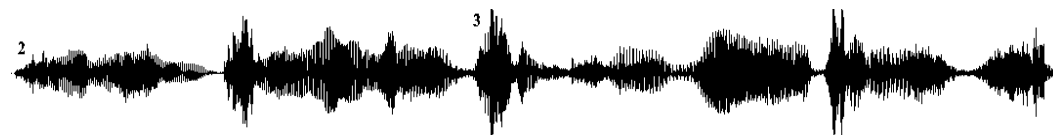


Figure 4. Sentence 4

/ If she slept earlier → she wouldn't feel so tired ↓ / (Juncture Phoneme) /→ / ↓/

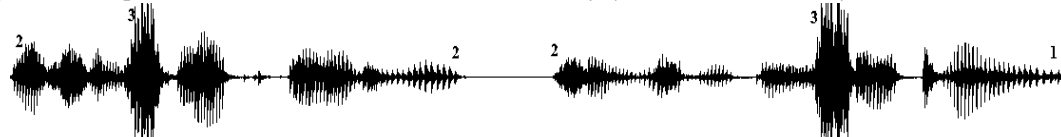


Figure 5. Sentence 5

/If they were at the park at that time→they wouldn't know what to do ↓ / (Juncture Phoneme)
/→ / ↓/

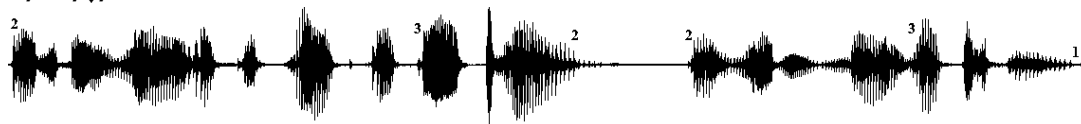


Figure 6. Sentence 6

/I wouldn't fly with that airline → if I were you ↓ / (Juncture Phoneme) /→ / ↓/



Figure 7. Sentence 7

/It'd be easier if we both did it ↓ / (Juncture Phoneme) / ↓/



Figure 8. Sentence 8

/ If I'd stayed in the building longer → I would have died ↓ / (Juncture Phoneme) /→ / ↓/

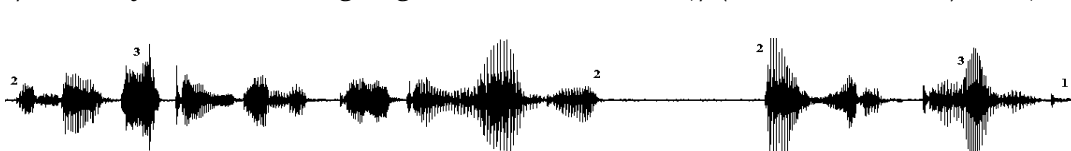


Figure 9. Sentence 9

/If I'd left home earlier → I wouldn't have missed the train ↓ / (Juncture Phoneme) /→ /↓/

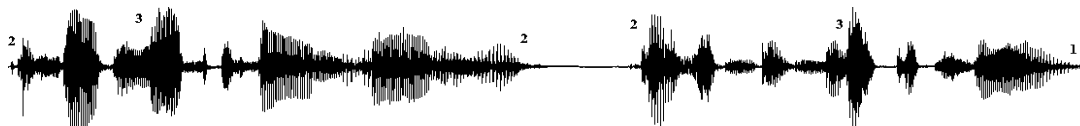


Figure 10. Sentence 10

/I would have been terrified → if I'd been in that situation ↓ / (Juncture Phoneme) /→ /↓/

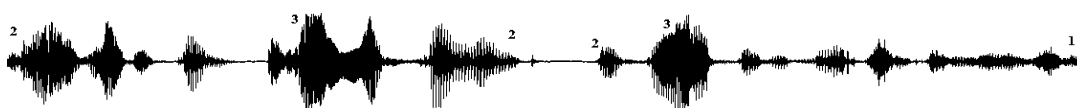


Figure 11. Sentence 11

/The dog wouldn't have attacked if you hadn't teased him ↓ / (Juncture Phoneme) /↓/



Figure 12. Sentence 12

3.2.Settings and Participants

Aged 18-21, the participants of this study were 61 ELT students with 13 males and 48 females in a Turkish state university in Ankara. They were all freshmen trying to receive a BA degree in English Language Teaching. The participants' consent was obtained through voluntary participation forms before the administration of pre-tests and post-tests. The education background of the participants in relation to juncture phonemes can be considered equal in that they all took the same course titled "Listening and Articulation I" in the first term and "Listening and Articulation II" in the second. Regarding the proficiency levels of the participants, they all took the same proficiency test before they started university. Therefore, the homogeneity of the sample was established. Convenience sampling was adopted in choosing the sample for this study because of the convenient accessibility and proximity of the participants to the researcher. It is advised in all types of research that the entire population be tested, yet the population is too large to be tested in our study and thus it is nearly impossible. However, convenience sampling seems best for the representation of the whole population in this study since the present researcher could reach pre-service Turkish teachers of English, the target population of this study.

3.3.Instrumentation

A corpus of 12 *If*-conditional sentences on Type 1, 2, and 3 gleaned primarily from Longman Dictionary of American English (2008) and Longman Dictionary of Contemporary English (2012) along with several course books makes up the main

instrument of data collection of this study. Collection of sentences from dictionaries and course books was preferred by several scholars as well (Kelly, 2001; Swan & Walter, 2011; Wells, 2014). After the sentences were collected, they were subject to Kuder-Richardson 20 (KR-20) through IBM SPSS version 22 for internal consistency and inter-item reliability as each item in the test is exposed to dichotomous use (Gliner et al., 2009).

The participants were asked to choose the best option in the pre-test consisting of 12 multiple-choice questions which aimed to evaluate the recognition levels of the participants in relation to juncture phonemes of *If*-clauses. For the oral pre-test, the participants were asked to record their voices while reading aloud the 12 sentences in the corpus in a stress-free and sound-proof environment. The oral test aimed to assess the participants' proficiency in producing the correct juncture phonemes of *If*-clauses. For the measurement of the written pre-test and post-test, Cronbach's alpha formula was computed through SPSS. The correct answers of the participants were labeled as 1 and incorrect ones as 0 and the scores were typed into the software. The reliability of the pre-test and post-test was maintained with a score of 0.83 in the pre-test and 0.77 in the post-test. In such types of measurement like Cronbach's alpha, the inter-item reliability is regarded high when the score is larger than 0.70 (Nunnally, 1978). In this respect, the written pre-test and post-test of this study were found to be reliable. For the measurement of the oral pre-test and post-test, a participant evaluation chart was prepared by the researcher on practical aspects. Because this was a dichotomous measurement, KR-20 formula was computed with correct answers labeled as 1 and incorrect ones as 0 into SPSS. According to Tan (2009), KR-20 coefficient is considered to be reliable if it is larger than 0.75 and lower if it is less than 0.50. In our computation, the KR-20 coefficient for the oral pre-test was found to be 0.86 and 0.74 for the post-test. Therefore, the reliability issue was handled.

3.4.Treatment

Upon the results of the written and oral pre-tests, it was discovered that remedial training session was necessary. Therefore, a six-class-hour treatment comprised of teaching the juncture phonemes of *If*-clauses was performed. The participants were first introduced to intonation to identify their familiarity with the subject. Upon a brief introduction, they were taught how to determine and produce the correct juncture phonemes of *If*-clauses through a wide range of exercises which provided the participants with lots of opportunities for active participation. In this session, a PowerPoint presentation prepared beforehand in accordance with the Audio-Articulation Method (Demirezen, 2003) and Grammar Intonation Model (Cauldwell & Hewings, 1996) was used. The PowerPoint presentation covered both recognition and production drills and was shared with the participants for further practice.

3.5.Procedure for Data Collection and Analysis

Data were collected through written and oral pre-tests and post-tests. The questions and sentences were the same for both pre-test and post-test. In the written pre-test, the participants listened to each sentence three times at five-second intervals and then were asked to select the correct option in the test which aims to evaluate their recognition levels of juncture phonemes of *If*-clauses. In the oral pre-test, the participants were asked to read aloud the 12 sentences in the corpus in a sound-proof and stress-free environment and record their voices during the articulation of the sentences. Approximately two weeks after the treatment session, the participants were subject to the

same procedure. That is, they were given the same written and oral post-test. When this procedure was completed, necessary statistical analyses were carried out through SPSS to answer the research questions.

Data were analyzed in twofold. First, data in the written pre-test and post-test were used to reveal if there was any significant effect of the intervention. For this, Paired Samples T-test was administered as it aims to measure the effect of the intervention before and after. The evaluation of the oral pre-test and post-test was conducted by three different raters. As this was human evaluation, intra-class correlation coefficient was calculated through SPSS. The measurement was performed separately for each rater. As the results of the analysis revealed, the inter-rater reliability was achieved with a score of 0.91, which suggested that there was little variance among the raters. The raw data were put to computation through statistical analyses once the reliability issue was handled. Both descriptive and inferential analyses were carried out to answer the research questions of the study.

4. FINDINGS

4.1. Findings for Research Question 1

RQ-1: *Is there a statistically significant difference between the pre-test and post-test results of the participants in terms of recognition and production of accurate juncture phonemes of If-clauses?*

In order to be able to answer this research question, Paired Samples T-test was considered to be appropriate and therefore it was conducted. The results of the T-test were presented in the following table.

Table 4.1

Paired Samples T-test Descriptive Statistics

		M	N	SD	SEM
Pair 1	PRE-REC	5.3607	61	4.09485	.52429
	POST-REC	6.8689	61	3.15951	.40453
Pair 2	PRE-PRO	6.5683	61	2.73343	.34998
	POST-PRO	8.8361	61	1.90771	.24426

When the mean scores of the participants are observed in Table 4.1, it can be seen that there has been a significant improvement in the participants' number of correct answers in terms of recognition and production of appropriate juncture phonemes of *If*-clauses. It can also be inferred from the table that the participants did better in production than in recognition in terms of the correct juncture phonemes of *If*-clauses.

Table 4.2

Paired Samples T-test Results

		Paired Differences					t	df	Sig. (2-tailed)
		M	SD	SEM	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PRE-REC POST-REC	-1.50	1.849	.2368	-1.981	-	-6.369	60	.000
Pair 2	PRE-PRO POST-PRO	-2.26	3.596	.4604	-3.188	-1.346	-4.925	60	.000

The data in the descriptive statistics in Table 4.1 was further reinforced by the findings in Table 4.2. in that there was a statistically significant difference between the participants' pre-test and post-test results in terms of recognition and production of appropriate juncture phonemes of *If*-clauses as the p value is less than .05 (.000<.05). It can also be interpreted that the intervention, remedial training sessions, was effective in terms of ameliorating the participants' problems regarding the recognition and production of juncture phonemes of *If*-clauses.

4.2.Findings for Research Question 2

RQ-2: *Do prospective Turkish teachers of English pause when a dependent clause is used before an independent clause in If-conditional sentences in respect to commas?*

When *If* is used at the beginning of the sentence, it is separated by a comma; therefore, it is expected of speakers to make a pause (or use a sustained juncture phoneme) when they see a comma in the sentence. In the other case, when *If* is used in the middle, there are two options for the speakers: either to make a pause or not. The latter is a very rare case which indicates that there is only one word with a primary stress in the sentence. There were three instances of this case in the corpus thus the participants were not expected to make a pause in these three sentences. In such cases, the type of intonation pattern also changes. For example, in the case of *If* used at the beginning, the intonation pattern should be /2 3 2 / - /2 3 1/ while it should be /2 3 1/ when *If* is used in the middle. In order to find the answer to the second research question, the three items in the corpus where the participants were not expected to pause were excluded and the percentages of the 9 items were calculated. The results were illustrated in the table below.

Table 4.3

Descriptive Statistics of Pause Production

	Production Pretest		Production Posttest	
	Correct	Incorrect	Correct	Incorrect
Total	59.93%	40.07%	81.05%	18.95%

The average scores of the participants in relation to their correct recognition and production of juncture phonemes of *If*-clauses were computed and illustrated in Table 4.3. Three items in the corpus which were irrelevant to the second research question were excluded from the computation. From the findings, it can be observed that

approximately 60% of them did produce the juncture phonemes of *If*-clauses. In other words, nearly 60% of the participants did make a pause when they saw a comma because there is a similar rule in their native language. Therefore, it can be suggested that the participants made a positive transfer from their native language to the target one. According to Table 4.3, it can further be observed that the participants' level of production was improved significantly. It can be argued that more than 80% could produce the juncture phonemes of *If*-clauses accurately following the introduction of the treatment. As to the answer of the second research question, it can be concluded that the participants of the study did make a pause when an independent clause is preceded by a dependent clause and their level of correctness was bettered.

4.3. Findings for Research Question 3

RQ-3: *What are the overall pre-test and post-test percentages of the participants in terms of recognition and production of the correct juncture phonemes of If-clauses?*

Table 4.4

The Overall Percentages in terms of Juncture Phonemes

	PRE-TEST RECOGNITION		PRE-TEST PRODUCTION		POST-TEST RECOGNITION		POST-TEST PRODUCTION	
	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
Type 1	47.13%	52.87%	59.44 %	40.56%	55.33%	44.67%	81.7%	18.3%
Type 2	46.73%	53.27%	62.44%	37.56%	64.75%	35.25%	76.09%	23.91%
Type 3	40.58%	59.42%	42.34%	57.66%	51.63%	48.37%	63.13%	36.87%
Total	44.81%	55.19%	54.74%	45.26%	57.23%	42.77%	73.64%	26.36%

According to Table 4.4, more than 50% of the participants were incompetent in identifying the correct juncture phonemes of all types of *If*-conditionals in the pre-test while the case was reversed in the post test, with more than 50% success on part of the participants. In the pre-test, it can be observed that the majority of the participants could not use the correct juncture phonemes of Type 3 conditionals while they were successful in the other two types. The post-test results showed that more than 60% of the participants did produce the correct juncture phonemes in all types of *If*-conditionals, with approximately 74% on average. Based on the data illustrated above, it can be speculated that the intervention was proved to be successful in that more than 55% did recognize and more than 70% of the participants did use the accurate juncture phonemes of *If*-clauses in the post-test.

5. DISCUSSION

The research questions of this study were formulated to find out the participants' recognition and production levels of accurate juncture phonemes of *If*-clauses. 12 sentences equally divided into three types of *If*-conditionals were listened at five-second intervals by the participants, which aimed to evaluate their level of recognition of juncture phonemes of *If*-clauses. The participants were also asked to record their voices in a stress-free and sound-proof environment while reading aloud the sentences, which aimed to assess their competency in terms of the production of correct juncture phonemes of *If*-clauses. Having no familiarity with the types of juncture phonemes in English, the participants were remediated through remedial training session which resulted in the

improvement of the participants' juncture-related problems in terms of recognition and production.

Regarding the first research question, it was revealed that the difference between the pre-test and post-test scores of the participants was statistically significant. It was suggested here that the intervention was proven to be effective as the p value was found to be less than .05. In other words, there has been an improvement in the recognition and production levels of the participants in relation to the juncture phonemes of *If*-clauses. The second research question was formulated to find out whether the participants do make a pause before a comma. In the corpus of this study, of the 12 sentences, there were 3 which had a different intonation pattern. In other words, the participants were expected to make a pause in 9 of the sentences while they were not in the other 3. The correct and incorrect answers of the participants in terms of the production of juncture phonemes of *If*-clauses were calculated after 3 of the irrelevant sentences were excluded. The results indicated that about 60% of the participants paused before a comma in the pre-test while the percentage was more than 80 in the post-test. The case with the high percentage of correct production of juncture phonemes in the pre-test could be explained by way of positive transfer. To state it differently, about 60% of the participants made a positive transfer from Turkish to English. They were expected to make a pause in 9 of the sentences and around 60% did. There is a similar rule in Turkish which asks speakers to make a pause when they see a comma. This finding also coincides with that of Demirezen (2015) who found that almost 90% of the participants did recognize the place of pause correctly in compound-complex sentences. It should also be reminded here that the production of correct juncture phonemes of *If*-clauses by the participants was increased through remedial training session despite its shortness. The results would be much better if the number of hours of remedial training session was increased.

Table 5.1

Summary of Pre-test and Post-test Results for Juncture Phonemes

	N	Pre-test Mean	SD	Post-test Mean	SD	p value	Pre-test Percentage	Post-test Percentage
REC	61	5.36/12	4.09	6.86/12	3.15	0.000	44.66%	57.16%
PRO	61	6.56/12	2.73	8.83/12	1.90	0.000	54.66%	73.58%

As can be observed from the table above, it can be summarized that the difference between the pre-test and post-test scores of the participants was significant in relation to recognition and production of accurate juncture phonemes of *If*-clauses. When the mean scores of the participants in the pre-test and post-test were taken into consideration, it can be assumed that the intervention was proven to be effective in the remediation of juncture-related problems of the participants. From these findings, it is plausible to assert that the retention and acquisition of accurate juncture phonemes can be maintained through thorough and systematic intonation instruction which must be incorporated in English language teacher education curricula of Turkey. Such importance should be given to this issue in that "Students have problems in dividing the stream of speech into word groups or word units..... Failure to divide the speech stream into these units can result in grammatical ambiguity or misinterpretation" (Jenkins, 2005:45) and there is a relationship between pauses and intelligibility (Picheny et al., 1986; Bradlow et al., 2003) therefore this results in unnatural and non-native speech, usually ending in miscommunication. Failure to place the correct pause in grammatical forms (here *If*-clauses) is against the pragmatic competence for better and clear speech (Demirezen,

2013). In this regard, possessing the knowledge to be able to place the pauses in utterances by help of punctuation marks (such as comma, dash, or semicolon) is of great salience for all speakers of English – especially non-native pre-service teachers of English who will be role-models for their students.

6. PEDAGOGICAL IMPLICATIONS & SUGGESTIONS

Several issues can be considered in terms of teaching the juncture phonemes of English. First, contextualized instruction of juncture phonemes must be encouraged and emphasized since intonation is context-dependent. Therefore, the type of intonation patterns and juncture phonemes will change from context to context. Second, authentic materials must be utilized in the teaching of juncture phonemes since communication takes place in real life. Third, communicative uses of language must be explicitly joined with intonation as Levis (1999) expressed. In relation to the teaching of junctures, technological materials and software can be utilized. In addition to the grammatical function of intonation, other functions such as attitudinal and discourse must also be emphasized in the teaching of juncture phonemes. As stated by Anderson-Hsieh (1992) the purpose of teaching suprasegmentals must improve the students' understanding of connected speech and improve their comprehensibility when using the spoken language of their academic disciplines.

Taking into consideration the findings of this study, it can be suggested that in-service and pre-service teachers of English in Turkey receive both formal and remedial training sessions if necessary now that they have a poor educational background in terms of intonation, more specifically, junctures. Despite the difficulty caused by linguistic typology, the teaching of intonation, and junctures in specific, must be urged. As mentioned earlier, Turkish and English are different languages in that the first is a syllable-timed language while the latter is stress-timed, which makes it difficult for speakers of Turkish to acquire the intonation of English. However, prospective Turkish teachers of English must learn the rules of intonation since stress-timed languages entail as Avery and Ehrlich (1992) reported. With this in mind, English teacher candidates and teachers-on-the-job must be subject to systematic and well-organized intonation instruction supported with various contextualized technological materials both auditorily and visually. Teachable aspects of intonation, that is, stress, pitch, and juncture, must be incorporated into the curriculum of teacher education considering the fact that the participants of this study, who are prospective Turkish teachers of English, had no background knowledge on intonation as they have all taken a course titled "Listening and Articulation I/II" which either touches upon intonation superficially or does not touch on at all.

With regard to the limitations of this study, it can be stated that data were collected from the first-year students of the ELT department of a state university. In another study, data could be collected from students of other grades of the same department in both state and foundation universities and thus could be compared. Another point is that, this study focused on the junctures of *If*-clauses, yet other teachable aspects of intonation such as stress, pitch and rhythm could also be researched in another study.

7. CONCLUSION

The present study dealt with the significance of teaching the juncture phonemes of *If*-clauses and thus investigated the competency levels of prospective Turkish teachers of

English on the recognition and production of juncture phonemes of *If*-clauses. As this study revealed, Turkish teachers of English must receive remedial training in intonation, especially in junctures considering its importance (Cutler & Butterfield, 1992; Wells, 2006; Brown, 2014). It was displayed in this study that around 55% of the participants could not recognize and nearly 45% of the participants, on the other hand, could not produce the juncture phonemes of *If*-clauses accurately. It must be reminded here that the teaching of juncture phonemes of *If*-clauses bears great importance in that whether speakers mean a condition or embedded question can solely be understood through punctuation in writing and intonation in speaking. Therefore, the teaching of juncture phonemes is not only important for *If*-conditionals but for other grammatical structures as well since their lack might cause misunderstanding and communication breakdowns.

It was also demonstrated in this study that more than 50% of the participants, who are prospective teachers of English, could recognize and more than 70% of them could use the juncture phonemes of *If*-clauses in English accurately. This suggests that the teaching of juncture phonemes is possible and it must be emphasized and supported through contextualized, authentic and technological materials. The teaching of juncture phonemes to both in-service and pre-service Turkish teachers of English is salient in that they present efficient role-models for their students and therefore they must be equipped with thorough knowledge of the subject and phonological competence. In order to achieve this aim, instruction of suprasegmentals must be incorporated into the Turkish teacher training curricula. To conclude, teaching intonation should not be disregarded in foreign language instruction despite differing opinions about its justifiability (Bukowski, 2011).

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