THE EFFECT OF AUDIO AND VIDEO MODALITY ON LISTENING COMPREHENSION OF REDUCED FORMS IN SENTENTIAL LEVEL: THE ROLE OF WEB-BASED LEARNING

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Dissertation Abstract

The Effect of Audio and Video Modality on Listening Comprehension of Reduced Forms in Sentential Level: The Role of Web-Based Learning

KAİNE GÜLÖZER

Recently, listening comprehension for second language (L2) development has gained importance both in research and pedagogy. The existence of reduced forms in a stream of speech is challenging for L2 learners to segment the speech. This dissertation study investigates whether the instruction of five reduced forms (RFs) in sentential level results in any difference in listening comprehension test performance. The five forms entail (a) contraction, (b) assimilation, (c) flap, (d) elision, (e) linking. Reduced Forms Instruction (RFsI) was delivered through the web page designated for the study for five weeks and the performance of the eight groups was measured twice throughout the study as pre- and post-tests for both treatment and control groups. This study proposed intervention in two conditions as audio versus video and investigated their contribution to the learning of RFs and overall listening comprehension for both L2 learners of low and high proficiency levels. In total, 343 university students at an English preparatory school of a state university in Turkey were randomly assigned to one of the four RFs instructional groups: RFs instruction in audio with low proficiency (ALP+RFsI) and with high proficiency (AHP+RFsI); RFs instruction in video with low proficiency (VLP+RFsI) and with high proficiency (VHP+RfsI), and four control groups for each proficiency level and instructional modality as ALP-RFsI, AHP-RFsI and VLP-RFsI and VHP-RFsI. Data were elicited from learners through a discrimination task, a dictation task and a listening comprehension test with multiple choice for a quantitative portion; a weekly reflection as well as an interview for the qualitative portion of the study.

The findings indicated that sentence level of RFsI through web-based learning facilitates the listening comprehension of RFs. On the other hand, modality of instruction as audio and video did not have any significant effect on listening comprehension in regard to the RFs. The results also indicated that when the corresponding proficiency levels were compared both in experimental and control groups, the students of the experimental groups in both high and low proficiency levels performed better than those in the control groups. The study concluded that while the RFsI promoted listening comprehension, it was the feature of “flap” that had no significant effect on listening comprehension on the part of learners both in audio and video modality instructional groups.

Özet

Duyusal ve Görsel Ortamda Cümle Düzeyindeki Kısaltmalı İfadelerin Dinleme Becerisindeki Başarıya Etkisi: Web Tabanlı Öğrenmenin Rolü

KAİNE GÜLÖZER

Günümüzde ikinci dilde dinleme becerisinin gelişimi, araştırma ve öğretim açısından önem kazanmıştır. Konuşma akışındaki kısaltmalı ifadelerin varlığı ikinci dili öğrenenler için ifadenin ayırt edilebilmesi bakımından sorun teşkil etmektedir. Bu tez, beş farklı özellik taşıyan cümle düzeyindeki kısaltmalı ifadelerin bilgisayar destekli eğitim ile öğretilmesinin dinleme becerisindeki başarıya etkisini araştırmıştır. Beş özellik (a) kısaltma, (b) benzeşme, (c) çarpmalı ses (flap), (d) ses düşmesi, (e) bağlama özelliklerini kapsamaktadır. Bilgisayar destekli eğitim ile sağlanan kısaltmalı ifadelerin eğitimi beş hafta sürmüş ve tüm çalışmada yer alan sekiz grubun dinleme becerisindeki performansları öntest – sontest aracılığı ile değerlendirilmiştir.

Bu çalışmada eğitim duyusal ve görsel olmak üzere iki şekilde sağlanmış, her iki öğretim yönteminin kısaltmalı ifadeleri öğrenme ve dinleme becerisinin geliştirmeleri acısından düşük ve ileri seviyedeki dil öğrenenler üzerindeki etkisi de araştırılmıştır. Bu çalışmaya Türkiye'deki bir devlet üniversitesinin İngilizce hazırlık okulu öğrencilerinden toplam 343 öğrenci rastgele seçilmiş; deney ve kontrol gruplarına rastgele dağıtılmışlardır. Bu gruplar deney grubundaki öğrenciler kendi içinde iki dil düzeyi ve öğretim grubuna ayrılarak öğretmeyi amaç edinilen özelikleri hakkında eğitim almışlardır. Bu çalışmada dil düzeyi düşük seviyede olan öğrencilere işitsel eğitim, (ALP+RFsI), dil düzeyi ileri seviyede olan öğrencilere işitsel eğitim, (AHP+RFsI); dil düzeyi düşük seviyede olan öğrencilere görsel eğitim, (VLP+RFsI), dil düzeyi ileri seviyede olan öğrencilere görsel eğitim, (VLP+RFsI) olmak üzere dört deney grubu bulunmaktadır. Ayrıca her bir dil düzeyi ve öğretim ortamı için eşdeğer olmak üzere ALP-RFsI, AHP-RFsI, VLP-RFsI, VHP+RFsI dört kontrol grubu yer almaktadır. Veri toplama amacı ile fark gözetme (discrimination), yazma (dictation) ve dinlediğini anlama testi (listeningcomprehension test) olmak üzere üç nicel veri toplama aracı ayrıca düşünce bildirme (reflection) ve mülakat olmak üzere iki

nitel veri aracından yararlanılmıştır. Bulgular gösteriyor ki cümle düzeyindeki kısaltmalı ifadelerin web tabanlı öğretiminin bu ifadeleri dinlediğini anlamaya katkı sağlamıştır. Diğer taraftan, kısaltmalı ifadelerin işitsel ya da görsel ortamda öğretimin dinlediğini anlama üzerinde ayırt edici bir fark olmadığı tespit edilmiştir. Bununla birlikte deney ve kontrol grubundaki ayni dil düzeyleri birbiri ile karşılaştırıldığında deney grubunun dinleme becerisindeki başarının kontrol grubundakilere göre daha başarılı olduğu gözlemlenmiştir. Mevcut çalışma, İngilizce kısaltmalı ifadeleri öğrenmenin dinleme becerisini geliştirdiğini fakat bu ifadelerden "flap" özelliğinin işitsel ya da görsel olarak dinleme arasında fark olmadığını ortaya koymuştur.

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Genc, H. & Gulozer, K. (2013). The effect of cognitive load associated with instructional formats and types of presentation on second language readig comprehension performance. *TheTurkish Online Journal of EducationalTechnology TOJET* 12(4), 171-182.

Genc, H. & Gulozer, K. (2011). An Experimental Study: The EFL Pre-service Teachers' English Language Writing Experience throughWiki. In Proceedings of Society for Information Technology&Teacher Education International Conference 2011 (pp.1498-1503)Chesapeake, VA: AACE. RetrivedfromhttpL//www.editlib.org/p/36507.

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DEDICATION

I dedicate this thesis to my beloved Mum, Mürvet GÜLÖZER and Dad, İbrahim GÜLÖZER who have been my sole unwavering supporters and motivators throughout my life…

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LIST OF ABBREVIATIONS

ESL	English as a second language
EFL	English as a foreign language
L2	Second language
CTML	Cognitive Theory of Multimedia Learning
SLM	Speech Learning Model
RF(s)	Reduced Form(s)
RFsI	Reduced Forms Instruction
AHP+RFsI	Audio modality for high proficiency learners in Experimental Group
VHP+RFsI	Video modality for high proficiency learners in Experimental Group
ALP+RFsI	Audio modality for low proficiency learners in Experimental Group
VLP+RFsI	Video modality for low proficiency learners in Experimental Group
AHP-RFsI	Audio modality for high proficiency learners in Control Group
VHP-RFsI	Video modality for high proficiency learners in Control Group
ALP-RFsI	Audio modality for low proficiency learners in Control Group
VLP-RFsI	Video modality for low proficiency learners in Control Group

CHAPTER 1- INTRODUCTION

1.1.Background and the Purpose of the Study

The notion of pedagogical concepts in listening comprehension has been a long-standing issue that is the least understood and under-researched compared to other components of language skills such as reading, writing and speaking. (O'Bryan & Hegelheimer, 2009; Vandergrift, 2004, 2007). However, Feyten (1991) remarks on the power of listening and stresses that listening provides the highest proportion of our total communication (45%), while speaking occupies 30%, reading 16% and writing 9%. A number of research studies have indicated that listening is crucial for picking up new messages more conveniently (Luo, 2008) and for social interactions (Hsu, Hwank, Chang & Chank, 2013). Field (2003) proposes that the main goal of a whole listening text should be regarded as 'diagnostic', providing insights into where understanding has broken down. Furthermore, Hasan (2000) asserts that "listening comprehension provides the right conditions for language acquisition and the development of other language skills" (p.138). In fact, many scholars have highlighted the importance of listening comprehension in language learning (Brown, 2005; Field, 2003, 2008, 2011; Goh, 2000; Ito, 2001; Matsuzawa, 2006; Carreira, 2008; Rost, 1994). Compared with the amount of research conducted into language skills, very little attention has been devoted to focus on the effect of speech modifications on learners' listening comprehension along with a design for teaching these features in a web-based learning environment (Yang & Chang, 2013).

A small number of studies do, however, investigate a cognitive perspective on language learners' listening comprehension problems (Goh, 2000, 2002; Kim & Philips, 2014), and metacognitive awareness in the context of L2 listening (Coşkun, 2010; Cross, 2010; Goh, 2008; Goh & Hu, 2013; Vandergrift, 2006, 2007). Given the notion that the development of listening ability and the learning of language through the medium of listening are interlinked processes

(Kemp, 2010), learners' exposure to meaningful input is likely to be a crucial component in listening comprehension. It is clear that speech perception plays a significant role in a second language (L2) listening context, where language learners will be expected to focus and receive information. Speech perception is defined by Boothroyd (2006) as the process of measuring sensory and contextual input to draw inferences about the original language patterns and the message they possess, including the speaker's intent. Hence, whether the listener perceives the input correctly is the key question related to the ultimate purpose of listening. It is also of great importance to outline what influences perception in a stream of speech in the context of L2.

It is obvious that there are some elements that cause learners difficulty in speech perception. Apart from the physical circumstances such as loudness and the setting, many other factors such as rate of speech, word familiarity, topic familiarity, size of vocabulary, length of sentences including the duration of speech are all important elements in speech perception. There is also another factor that strongly affects the L2 listener: reduced forms (henceforth abbreviated to RFs). RF is also termed in several ways such as 'sandhi-variation' (Henrichen, 1984), or modifications (Matsuzawa, 2006). RFs are prevalent in real life speech or in an idea unit of a sentence in particular, making the utterance enunciated altogether. An idea unit, in other words thought group, is defined by Celce-Murcia, Brinton & Goodwin (2011) as a distinct chunk of speech that makes a semantically and grammatically cohesive unit of discourse. They further state that an utterance can be separated into an idea unit when a speaker can normally pause in the real time of speech. For example, in a sentence: "I hope you won't open the window when it's so cold and snowing" two idea units occur: "you won't open the window" and "it's so cold and snowing". However, in the sentence: "The cat, with which I used to travel, is gone", the only idea unit can be considered as "I used to travel" because the speaker is supposed to give a logical pause before a comma. It is reported that all languages have a range of RFs which they employ (Rosa, 2002), the reason for which is attributed to the fact that not every word

uttered in natural speech is fully articulated (Aquil, 2012; Avery & Ehrlich, 1992; Celce-Murcia et al., 2011; Roach, 2009). Rather, the speech organs articulate sounds together to save time and energy instead of forcing speech organs to take a new position for each sound. Hence, a variety of phonological modifications occur in naturally spoken English, which causes different pronunciation of words from their graphic (Buck, 2001; Mitterer, Kim & Cho, 2013; Zielinski, 2007).

RFs are difficult for second language (L2) learners to perceive and identify the boundaries between the words, which in turn cause disruption in listening comprehension (Ur 1984; Levis & Levis, 2010; Underwood 2012; Brown, 2006). Listening to the sentences articulated in isolation is markedly different from those articulated in RFs (Aquil, 2012; Toro, Sebastian- Galles & Mattys, 2009). When ESL learners are asked to judge the intelligibility of a native speaker's (NS) speech through audio, they tend to focus more on global comprehension rather than that of the modifications in real life speech. Because ESL learners can easily perceive content words, they may not be able to determine what RFs impede their perception in the audio. With this in mind, the RFs such as contraction, assimilation, flap, elision and linking could be promoted to raise awareness of perception on the part of ESL learner through explicit instruction. Moreover, the limited training or the lack of the incorporation of technology in listening instruction may result in experiencing misperception and not catching up with the instructor in the class on the part of listener (Seferoğlu & Uzakgören, 2004). Thanks to the recent accessibility of online or offline tools, videos, podcasts or a range innovative mobile applications are increasingly incorporated in second language classes in second language(L2) listening instruction. What is more, course delivery through technology allows learners independent learning, in which they can regulate their learning independently apart from the classroom context (Bayyurt & Karatas 2011; Chang, 2005; Douglas et al., 2004; Hsu et al., 2013). By doing so, learners can be exposed to hearing and seeing a stream of speech on a video

and imitate the native speaker as a part of natural language learning situation (Kuhl et al, 2008). This may also allow learners to follow their own pacing in that they can check themselves over and over again at their own convenience. Hence, learners become autonomous and enhance ownership of learning the reduced forms. Learners' monitoring their own learning through visual entities is especially important when the input is slightly beyond their linguistic competence (Danan, 2004; Erçetin, 2011). A video modality, (yet with no captions) may serve to increase language perception, specifically RFs, by connecting auditory to visual input. As mentioned before, audiovisual materials through technology are potential tools that are believed to improve second language listening skills (O'Bryan & Hegelheimer, 2007; Winke, Gass & Sydorenko; 2010).

On the other hand, one might suggest that training L2 learners with RFs in the context of listening comprehension forms only a small part of meaning construction. However, a conclusion drawn by a study showed that learners failed to perceive RFs in about 50 % of cases (Ernestus, Baayen & Schreuder, 2002). In this regard, RFs may form a partial element among overall listening comprehension. However it might also be causing frustration due to accumulation of RFs when the sentences are gathered during listening comprehension. In fact, even in a simple sentence or in a stream of speech, modified speech is a highly important factor to be considered. The training of phonological awareness in RFs could enable learners to overcome their listening comprehension difficulties and enhance listening comprehension development. Moreover, Turkish not being a stressed-time language (Bleile, 2014), learners of English with L1 Turkish will not be able to rely on stressed units in the same way as native speakers of English do in English. This conception is also supported by Cutler (2001) who points out that L2 listeners employ their L1 segmentation procedures to identify L2 speech. Based on this assertion, the researcher has reason to assume that learners who have not been

familiarized with the phonological modifications of natural speech will be confronted with challenges when exposed to real life English by native speakers.

Proficiency levels of learners play an important role in L2 speech perception as language processing automaticity may differ between high- and low-proficiency listeners. In this regard, Xie and Fowler (2013) investigated the intelligibility of native Mandarin-accented English speech for native English and native Mandarin listeners with two distinct proficiency level language learners; they concluded that low-proficiency listeners could rely on more bottom-up processing and L1 specific acoustic information than high-proficiency listeners, resulting in misperception. The higher-proficiency learners, however, might able to achieve sufficient automation in perceptional processing, and therefore might not need to rely on grasping the idea units (Moyer, 2006)

It has also been shown that low-proficiency language learners may be influenced by vocabulary, rate of speech and context differently from high proficiency L2 learners (Chang, Tseng & Tseng, 2011). In other words, higher-proficiency learners might perform better in perceiving RFs than lower-proficiency learners of English. A lack of vocabulary knowledge (Dang, Webb, 2014; Staehr, 2009) and fast rate of speech (McBride, 2007) may contribute to L2 learners' difficulty in segmenting the boundary between the words, thus hindering perception. However, both low and high proficiency level second language learners might also have difficulty in perceiving them and segmenting the lexicon during their L2 listening experiences, which may also result in an obstacle to comprehension (Henrichen, 1984; Huang & Eskey, 1999; Ito, 2001; Kelly, 2000; Aquil, 2012). The ontological question that the researcher considers here is whether phonological awareness of RFs will help learners to improve their listening comprehension skill.

Additionally, the natural rhythmic pattern of English in speech might be substantially maintained by stressing content words and rather than the function words (Bell, Brenier, Gregory, Girand & Jurafsky, 2009; Mehrpour & Rahimi, 2010). Content words refer to the words that carry meanings semantically and function words refer to the words that play a grammatical role in a sentence (Bell et al., 2009). Because the pronunciation of function and content words constitutes different durations in pronunciation, learners might be affected by the function words since duration of enunciation is much shorter than that of the content words. In this vein, the researcher aims to delve into the issue as to whether function or content words are easier to perceive, including what modality of display of listening scripts will facilitate the perception of RFs.

Assuming segmental features are perceptible, teachable and learnable, it can be hypothesized that promotion of RFs to L2 learners can further help language learners to identify the stream of speech and in turn develop their listening comprehension. Yet, will the instruction of those characteristics of speech through web-based learning help L2 learners improve their perception of those features and improve L2 learners' self-regulation skills in listening comprehension? This is the fundamental question that stimulated the present research: what feature/s of RFs will be improved most by instruction?

This study aims to explore the impact of RF instruction on Turkish EFL learners' comprehension of RFs, namely, contraction, assimilation, flapping, elision and linking displayed at a sentence level. Additionally, the researcher aims to examine the contribution of web-based environment, developed by the researcher as a platform to let participants perceive RFs in two modalities: audio versus video through the designated web-page entitled "CONSPERsent", the acronym which stands for "CONnected Speech PERception through SENTtences.

1.2. The Statement of Problem

The present study has derived from the researcher's classroom observations during the fall term of 2013-2014 academic year in the field of listening instruction. The following quotes from the students who took the listening and speaking course in their preparatory year of English language learning illustrated the real time impediments during the class:

"The speech is too fast to keep up with because there is no isolation between the words"

"I cannot determine the word boundaries within a statement, it sounds that all words run together"

"I can hear only the subject of the sentence, the rest is impossible to pick up".

These are the statements characterizing the phenomenon on the part of non-native English language learners whose first language (L1) is Turkish in Turkey. It has also been reported in a range of studies that ESL learners have difficulty in understanding naturally spoken English (Hasan, 2000; Field, 2004, 2008). This is likely to be the case due to the fact that listeners' segmentation of words relies on procedures determined by the phonological characteristics of their first language (L1). Turkish has been said to hold the characteristic of "sound-phoneme correspondence and syllable timing" in contrast to the "stress-timing" and "no sound-phoneme correspondence" characteristic of English (Otake, Hatano, Cutler & Mehler, 1993, p.258). Since the rhythmic properties of Turkish are substantially different from English in which rhythm is based on stress units, Turkish learners of English may be influenced by some features of L2 speech such as linking, elision, and assimilation. For example, the change of the sound in assimilation may cause learners not to be able to identify the boundary between the words.

Another possible reason for difficulties in listening comprehension is the RFs that are prevalent in a natural stream of speech by native speakers. Brown and Kondo- Brown (2006) remark that RFs make up an actual unit of the spoken language that manifests in both formal and informal ways of speech. Because the enunciation of words in isolation is different from

those uttered in real life speech, RFs such as “Contraction, Assimilation, Flapping, Elision and Linking” (hereafter CAFEL) are challenging factors that reduce the perception on the part of ESL listeners, and in turn impede the comprehension of a stream of speech. This conception is also confirmed in other studies (Aquil, 2012; Brauwer, 2010; Field, 2003) Therefore, it is reasonable to consider that RFsI might alter the impediment for learners’ perception and comprehension in listening. In other words, it might be that listening practice with no training in RFs leads to uncertainty about perception in listening. In this vein, target-like perception of RFs is an important element to perceive the spoken audio (Kissling, 2012). Hence, it is essential that explicit instruction on how boundaries are blurred in RFs be delivered through e-learning since it enables learner-centered ways of learning (Kukulska-Hulme & Shield, 2008). Furthermore, listening comprehension is reported to be “the least understood and the least researched skill” (Vandergrift, 2007, p.191). A number of studies in listening have dealt with either perception of problematic sounds, syllables in a range of languages such as Spanish, English, Japanese, and French (Kissling, 2012; Chan, 2011; Otake et al., 1993) or production (Thompson, 2011; Underwood & Wallace, 2012) rather than that of comprehension of RFs . In relation to listening comprehension, on the basis of the researcher’s observation during listening instruction courses for over twenty years, students report that they get quite limited listening courses during their high school education in Turkey. When they start their tertiary education, their listening comprehension scores in their proficiency tests seem to be the lowest one among the four language skills. In most listening materials, the delivery of audio texts is tailored through the clear articulation of each segment, which makes language learners get accustomed to slow pacing. Yet, when language learners are exposed to a natural speech, they are challenged by stress, rapid speech and modifications in speech even though they have high proficiency in language. Based on these elements in natural speech and the variety of language proficiencies of the learners, we can hypothesize that learners who have been in different proficiency levels

will have different amounts of confrontation when encountering natural speech from native speakers. In other words, language learners with low-proficiency level are assumed to encounter more difficulty in perceiving RFs than of high-proficiency language learners. Furthermore, even though higher-level understanding, namely world knowledge, is given great importance in a range of studies in second language (L2) listening comprehension (Field, 2003), studies on low level of understanding such as connected speech, perception and lexical segmentation of L2 listening are succinct (Brown 2006). Field (2003) remarks on the fact that many high-level breakdowns of communication may emerge from low-level errors. Giving the sample statement that "*I won't go to London as I want to go to London*" (p.325), he highlights the problem of phoneme discrimination that would result in a mistaken understanding of the following part in the spoken text and this may even have an impact on comprehension as a whole. In fact, it seems that the source of the problem is not only the difficulties in sound discrimination but also the identification of the presence of RFs. There is a dearth of intervention studies that examine the effect of explicit instruction of all five RFs to ESL learners. In this regard, it is vital that not only one feature but also an amalgamation of RFs be integrated in computer assisted language learning (CALL) designs and studies.

1.3. The Present study and its significance

In order to understand how we perceive the stream of speech, it is of great importance to consider some of the RFs, and the particular obstacles they pose for listeners in natural speech segmentation. Because the spoken discourse is quite fast the listener is supposed to perceive and process it online. Most studies conducted on RFs, so far, have offered either phonological, cognitive linguistic, or psycholinguistic perspectives (Ito, 2001). Yet, there is dearth of research in instructional perspectives (Underwood & Wallace, 2012). The study on RFs is important for several reasons:

First, most studies, to our knowledge so far, have dealt with non-native speaker's sound perception, or phonological awareness in L2 (Chan, 2011; Kissling, 2012;Venkatagiri & Levis, 2007), perception of phonetic detail in unfamiliar words (White, Yee, Blumstein & Morgan; 2013) non- native speakers' comprehension of non-native speakers' accent and speech rate (Matsuura, Chiba, Mahoney & Rilling, 2014; Weber, Broersma & Aoyagi; 2011) overall listening comprehension (Graham et al., 2011) as well as sound production (Kang & Moran, 2014), RFs production (Underwood & Wallace, 2012) or word recognition (Shi, 2009) rather than that of perception of RFs (Levis & Levis 2010). It is also clearly acknowledged in literature that both intermediate and advanced level of language learners have difficulty in segmenting speech (Altenberg, 2005). The study conducted by Levis and Levis (2010) attempted to use the sentence focus with content words, yet they ignored the function words in L2 listening contexts. Most content words are salient in regard to perception yet the collective use of both content and function words may cause extra burden in perception and so what we wonder is whether the presence of function words causes extra burden with recognizing the idea units in a sentence. In brief, studies were mainly concerned with phonemes, production or global comprehension in listening rather than with RFs, focusing on idea units to perceive RFs at a sentential level.

Secondly, even though the negligence of both studies and materials on RFs is clearly highlighted by several scholars such as Brauwer (2010), Ur (1984) and Rosa (2002), to our knowledge, so far, no comprehensive research study has been conducted incorporating several CSFs through idea units in sentences. Rosa (2002) stresses that "very little material is available on the systematic use of RFs" (p. 57). An examination of the materials teaching listening and pronunciation reveals a dearth RFs. If they are covered at all, most provide a few of them not a comprehensive view of all information regarding RFs. Furthermore, in almost all of them, one of the RFs (flap) is missing. The list of the books and the coverage of the RFs are as in the following:

Table 1.Coverage of RFs in Literature

Author	Book	Coverage of RFs	Missing
Celce-Murcia (2011)	Teaching Pronunciation a course book and a reference guide	Linking Elision Assimilation	Contraction Flap
Lodge (2009)	A Critical Introduction to Phonetics	Assimilation	Elision Linking Contraction Flap
Roach (2009)	English Phonetics and Phonology	Assimilation Elision Linking	Contraction Flap
Gilbert (2005)	Clear Speech	Linking Flap (reduced t)	Assimilation Elision Contraction
Kelly (2008)	How to teach Pronunciation	Contraction Assimilation Elision Linking	Flap
Avery & Erhlich (1992)	Teaching American English Pronunciation	Contraction Assimilation Elision Linking	Flap

As this chart indicates, most of the materials provide an amalgamation of RFs, yet a comprehensive one including all in one instructional material and the linguistic and/or pragmatic constraints of usage are not specifically addressed. Furthermore, flap is identified as

the most difficult one to recognize by ESL learners (Matsuzawa, 2006). This is an area of research that is definitely limited with respect to covering five RFs namely, contraction, assimilation, flap, elision and linking. The RFs illustrated above have been indicated by the research (Rosa, 2002; Brown, 2006; Brown et. al., 2006; Matsuzawa, 2006; Aquil, 2012; Underwood, 2012) and it is remarked that L2 learners have difficulty in identifying words in a speech, which has frequently been an obstacle to follow the meaning during the process of listening comprehension.

In this regard, what is unique in this study is that the researcher developed a web-based learning program along with the face-to-face language instruction within the classroom setting to deliver training on RFs at the sentential level. The researcher developed an instructional program on a website called "CONSPERsent (Connected Speech Perception through Sentences) and delivered it through web-based instruction and face-to-face instruction along with practice exercises on RFs. Even though there are studies on computer-assisted training on perception of L2 (Moussalli, 2013; Thomson, 2011), they do not serve the instruction and interaction with the learners for the perception of RFs in a sentence form. This study will shed light on the potential of web-based instruction in overcoming RF learning and overall listening comprehension.

A web-based program on RF instruction may be considered to be helpful for the learners whose first language is Turkish for several reasons. First, the nature of Turkish is agglutinative with its inflectional, derivational morphology, vowel harmony as well as free word order of main constituents (Saygin & Wilson, 2010). Since Turkish bears this topological difference from English and many other commonly spoken European languages, it is of great importance to conduct a study on perception of RFs for language learners whose first language (L1) is Turkish. Secondly, what is notable in Turkish is that the verb stands out as an acoustic and a

salient unit while one is listening even if she or he does not know Turkish (Kuntay& Slobin, 2002). Yet this is not the case in English due to the distinguishing length conducted to the articulation of content and function words in English. It is known that Turkish is a 'syllable timed' and orthographically transparent language in contrast to the stress timing characteristic of English phonology. Hence it is the syllable not the stress which is important for the perception of segmenting a word in a sentence in Turkish. Because each syllable in a word occupies the same amount of time, it will simply take equal time to articulate as well. Even though stress elements occur in some certain cases in Turkish, it does not occur as content or function word variation but it is used for signaling a question, an exclamation or stressing one particular issue within a sentence. Even though stress timing nature in English is questioned in some studies (Barrera-Pardo, 2008), the general consensus in literature is that English is stress timed language (Marks, 1999).

The following sentence will demonstrate the phenomena of perception in a stream of speech, where some units of the sentence undergo a number of modifications that would cause a constraint in perception on the part of L2 learners:

"Di**dy**ou tell **him** wha**ty**ou saw" (Avery, Ehrlich, 1992). (pp.87-88)

/dɪdʒə tɛl əm watʃə sa/

a) The final /d/ of 'did' and the initial /y/ of 'you' are pronounced as the consonant /dʒ/ (assimilation).
b) The vowel of the word 'you' is reduced to schwa in the two instances. The two words 'did' and 'you' are pronounced as a single syllable: /dʒə/ (elision)
c) The word 'him' is reduced to /əm/, the initial consonant being dropped and the vowel being reduced to schwa (elision).

d) The final /t/ of ‘what’ and the initial /y/ of the ‘you’ are pronounced as the consonant sound /tʃ/ (assimilation).

Each of the above units may vary in a number of sentences as it preserves a form of a RF within itself. The stream of speech will be hard to perceive on the part of the Turkish speakers of English as the /h/ sound is elided and the combination of /d/, and /y/ sounds are assimilated within one sentence. Additionally, to my knowledge, because these RFs at the sentential level are not currently available in most language instruction curricula (Settler & Jenkins, 2005), the need to solve L2 learners’ confusion and the need to train language listeners in this field are obviously called for. Turkish speakers of English, with syllable- timed language, learners will be considerably influenced by unstressed part of the stream of speech- RFs. Taking these factors into account, it seems to be plausible that learners need sound and explicit instruction to raise their perception which might also incidentally contribute to their target-like production of these connected speech features.

Another significance of the study is that poor listening ability may result from several factors, such as listeners’ lack of vocabulary, lack of necessary listening strategies, lack of teaching methodologies, or lack of emphasis on listening; but the most important one is the notion of RFs that poses a substantial obstacle in parsing the elements of an uttered sentence. Yet, it might be a possible solution to the problem to implement e-learning along with the face to face instruction in a classroom. This research, “the effect of RFsI on L2 listening comprehension”, will contribute to teachers, material developers, policy makers, program designers to devise ample techniques for incorporating RFs practice into the classroom, leading toward the comprehensibility of natural native English speech. Furthermore, it will enforce the importance of placing appropriate teacher training and development opportunities in the field of phonology instruction, because this study will enlighten the crucial role of teacher

development in their future language instruction as well. What is more, not all language teaching materials include authentic ones, which might hinder awareness on phonological modifications on the part of the learners. For example, watching TV shows or listening to an inauguration speech given by a president at a university, or listening to a lecturer in a conference given by a native speaker would include a range of reduced forms that might cause disruption of listening comprehension on the part of the listener.

It is also of great importance to consider the context of diverse communicative practices and recent social relations in globalization when we look through English as a Lingua Franca (ELF). Canagarajah (2014) remarks that English is highly elucidated as setting up situational norms in specific contexts of interaction. Specific context of interaction in discrete varieties of English requires update and explicit pedagogical practice as it is more significant in accounting for one's listening comprehension development. In this regard, this study will contribute to phonological variety in relation to its pedagogical developments in teaching ELF as well.

Last but not least, the additional benefit of RFsI is not limited to the classroom context but also beyond the classroom context (Underwood, & Wallace, 2012). Language learners will raise awareness in regard to RFs and produce comprehensible spoken English. This current research will shed light on learners' listening difficulties, pinpointing the places where comprehension is impeded on the part of L2 learners and enable teacher trainers, pre-service and in-service language teachers, testers, and material developers to understand the phenomenon of RFs clearly in language instruction, thereby empowering them to teach RFs in language courses (Ito, 2007).

In brief, further research is needed to determine whether reduced forms instruction (RFsI) has a positive or no effect on perception performance of the mentioned features. Additionally, it is critical to determine which RFs are important and which modality of listening (audio

without text or video without text) is also more useful for recognition of RFs on the part of the learners.

1.4. Research Questions

The following research questions are formulated for the aim of the study:

1- Is there any significant difference between the experimental (+RFsI) and control (-RFsI) groups in terms of the comprehension of RFs, namely contraction, assimilation, elision, flap and linking after the treatment?

a) Is there any significant difference between AHP+RFsI group and AHP-RFsI group in terms of the comprehension of RFs?
b) Is there any significant difference between VHP+RFsI and VHP -RFsI groups in terms of the comprehension of RFs?
c) Is there any significant difference between ALP+RFsI and ALP-RFsI groups in terms of the comprehension of RFs?
d) Is there any significant difference between VLP+RFsI and VLP-RFsI groups in terms of the comprehension of RFs?

2-Is there any difference between the students who learn RFs through audio modality (AHP+RFsI, ALP+RFsI) and those who learn through video modality (VHP+RFsI, VLP+RFsI in terms of the comprehension of RFs?

a) Is there any significant difference between AHP+RFsI and VHP+RFsI groups in terms of the comprehension of RFs?
b) Is there any significant difference between ALP+RFsI and VLP+RFsI groups in terms of the comprehension of RFs?
c) Is there any significant difference between audio and video groups in terms of the comprehension of contraction?
d) Is there any significant difference between audio and video groups in terms of the comprehension of assimilation?

e) Is there any significant difference between audio and video groups in terms of the comprehension of flap?

f) Is there any significant difference between audio and video groups in terms of the comprehension of elision?

g) Is there any significant difference between audio and video groups in terms of the comprehension of linking?

3- Is there any significant difference between the high proficiency experimental groups control groups (AHP+RFsI vs AHP-FRsI, VHP+RFsI vs VHP-RFsI) and low proficiency level experimental and control groups (ALP+RFsI vs ALP-RFsI, VLP+RFsI vs VLP-RFsI) in terms of comprehension of the RFs after instruction?

a) Is there any significant difference between AHP+RFsI and AHP-RFsI in terms of posttest scores?

b) Is there any significant difference between VHP+RFsI and VHP-RFsI in terms of posttest scores?

c) Is there any significant difference between ALP+RFsI and ALP-RFsI in terms of posttest scores?

d) Is there any significant difference between VLP+RFsI and VLP-RFsI in terms of posttest scores?

e) Is there any significant difference between AHP+RFsI and VHP+RFsI groups in terms of posttest scores?

f) Is there any significant difference between ALP+RFsI and VLP+RFsI groups in terms of posttest scores?

4-What are the students' perspectives on the instruction of reduced forms through web-based learning.

1.5.Definition of Key Terms

Contraction refers to the process by which we combine two words and articulate them as one word or syllable. Some illustrations of this form are "I've","wanna", and "would've"

Assimilation can be defined as the way sounds modify each other when they are close by either across word boundaries or within words. For instance, the words *that* and *boy* involve /ğæt/ and /bɔɪ/. When we incorporate these words into a sentence as "*Can you help that boy, please?"* the /t/ phoneme at the end of *that* does not sound like it does in the word said on its own. In other words, the sound /t/ at the end of the word *that* and the sound /b/ at the beginning of the word *boy* will be modified and pronounced as the sound /b/ (Kelly, 2008).

Flapping refers to the instances of pronunciation of /t/ sounds as /d/ such as the words 'letter', 'literature', 'butter', 'scatter', 'pattern'.

Elision can be defined as disappearance of a sound. For example, in the utterance *"We can meet next week"* speakers usually elide the /t/ in the word *next* for the sake of economy of effort and saying /neks wi:k/. Similarly /d/ as in "we reached the campus", /v/ as in "it is a complete waste of time" can disappear in natural speech.

Linking (re-syllabification) can be defined as the phenomenon when groups of words within a sentence or phrase are connected together. When words are properly blended, a smooth transition from one word to the following one occurs. Additionally, this is a term to refer to the use of phonemes such as /r/, /j/ or /w/ in order to link the preceding vowel to a following one. For instance, in the following sentence "Her English is excellent" the phoneme /r/ underlined is pronounced, however in the sentence "Her German is awful" the phoneme /r/ is not enunciated. In another example where we link the phoneme /j/ is "I ought to be" as /aɪjɔ:t/. As for the linking /w/, we can give example units as "go in!" pronounced as /gəʊwin/ (Kelly, 2000, p. 112).

Intrusion can be defined as the opposite of elision as the articulation of /r/ phoneme in a thought group is possible even though the letter does not exist in the word. In particular, this phenomenon occurs when two vowel sounds meet, and when the speaker tends to ease the transition. For example, in the sentence "It's a question of law and order" (Kelly, 2000, p. 111) the sound /ɔ/ and /ən/ are intruded and the phoneme /r/ is placed between, so that the utterance is articulated as /ɔ:rən/. However, this feature is out of the scope of this study.

Accentedness is referred to as "a judgment of how much one's speech differs phonologically from the local variety" (Derwing, 2010, p.29).

Comprehensibility is defined as "a judgment of how easy or difficult an individual's pronunciation is to understand" (Derwing, 2010, p.29)

Another key term in regard to listening comprehension is *intelligibility* defined by Derwing (2010) as "the degree to which a listener understands a speaker" (p. 29). In other words, accent is difference, comprehensibility is effort, and intelligibility is actual understanding.

Rate of speech refers to the speed of speech and it is measured by the distribution of words per minutes in an audio or spoken discourse. According to Xu (2011), speech rate on the basis of words per minute (wpm) in radio monologues as 160 wpm, and in conversations it is 220 wpm. The nature of faster or slower speech essentially results from the amount of pausing that speakers employ during the speech.

CHAPTER 2- THEORETICAL BACKGROUND

2.1. Aspects of Reduced Forms (RFs)

Before defining the features in RFs, it is important to define listening comprehension. Clark and Clark (1977) provided a comprehensive definition of listening comprehension in two aspects as narrow and broad. In the former one, comprehension denotes the mental processes through which listeners receive the sounds by a speaker and build up an interpretation of what they take in. However, in the latter case, the listener constructs additional interpretations to what they hear, and there is no end within comprehension per se. Another definition given by Xu (2011) offered two categories: traditional and recent. The traditional understanding of listening comprehension was "a passive process, in which our ears were receivers into which information was poured, and all the listeners had to do was passively register the message. Today we recognize that listening is an 'active' process, and that good listeners are just as active when listening as speakers are when speaking" (p. 161).

RFs are a prevalent phenomenon observed in real life speech of native speakers. Crystal (1980) defines connected speech as:

> "A term used by linguists to refer to spoken language when analyzed as a continuous sequence, as in normal utterances and conversations. Its significance lies in the contrast implied with studies of linguistic units seen in isolation, such as an individual sound, word or phrase, which was the subject matter of traditional linguistic enquiry. It is now realized that important changes happen to these units when they are used in connected speech, as demonstrated by such processes as assimilation and elision, e.g. and becoming /n/ in such phrases as *boys and girls*" (p.81).

Brown (2006) extends the definition by underlying RFs as a relationship between contextual and linguistic rules through pragmatic rules, and encapsulating further processes within the concept of RFs "word stress, sentence stress and timing including strong and weak forms of words" (p.15). Given the importance of contextual and linguistic rules in a stream of speech, we adopt Brown's definition of RFs for the purpose of our study.

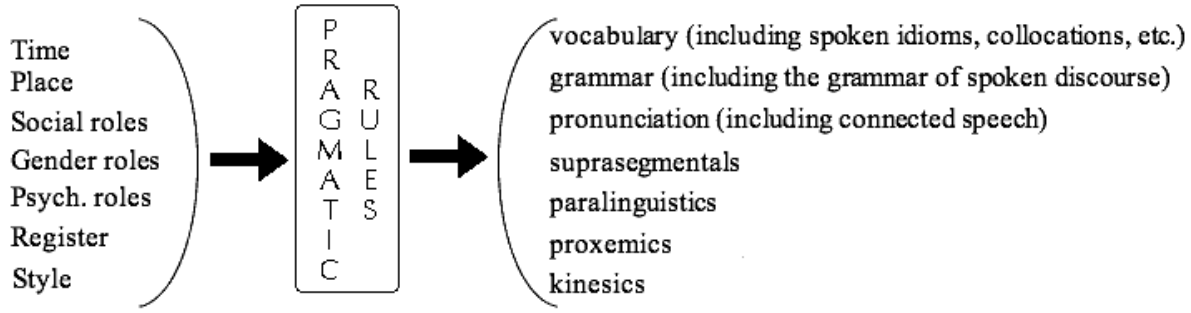


Figure 1. Proposed features of oral proficiency (Brown, 2006).

Content and function words also tend to serve as a basis of RFs due to the fact that content words receive stress, whereas function words are mostly unstressed during connected speech (Celce-Murcia et al., 2011). Word stress refers to "the way stressed syllables in a word are organized in terms of their relative prominence" (Brown, 2006). Content words refer to the words that carry information such as verbs and nouns, whereas function words are the ones that do not carry information per se, rather they carry information with the combination of content words. In other words, they are grammatical elements in a sentence such as articles, auxiliary verbs, personal pronouns, possessive adjectives, prepositions and conjunctions (Celce-Murcia et al., 2011). For example, in the sentence *I ask her to do a survey in the classroom*, the sound of *her* is reduced; accordingly, instead of /hɜr/, *her* is pronounced as /ər/ or /schwa + r/.

2.2. The Speech Learning Model

Language learning models, exclusively for listening perception, have been developed in order to account for the intricate process of how second language phonology is acquired. Among these models are the Perceptual Assimilation Model (Best & Tyler, 2007), The Native Language Magnet Model (Kuhl et al., 2008), Automatic Selective Perception of first and second language speech (Strange, 2011), The Speech Learning Model (SLM) (Flege, 1992, 1993, 1995, 2002,

2003), and The Cognitive Theory of Multimedia Learning (CTML) (Mayer, 2009; Mayer & Moreno, 2003).

The present study utilizes both SLM and CTML as a theoretical framework to explain the instructional design and the results of the study. Both theories are explained in order to integrate two different perspectives on listening comprehension instruction.

Flege's SLM accounts for how a learner perceives phonetic segments in a second language, regardless of the age factor. This model proposes that L2 learners should initially learn to distinguish subtle phonological differences between L2 sounds and identical sounds in their L1 due to the fact that they take place in a range of phonetic environments. Hence, L2 learners can overcome new phonological sound categories for L2 sounds and may be able to perceive the L2 sounds correctly. The model also holds that an individual's perception decreases along with second language acquisition. Flege's cut off line for L2 perception is three years, which is a contrasting argument to Lenneberg's CPH (Critical Period Hypothesis) which contends that L2 acquisition takes place between age two and puberty (Lenneberg, 1967). In SLM, exclusive phonemes in a language and the position of the phoneme within that particular language, termed "phonetic categories", occupy perceptual representations and are stored in long term memory. In this regard, it is proposed that learners are more likely to notice the differences from any existing L1 phonetic category than that of more identical L2 categories. In other words, L2 phoneme categories are well established when L1 and L2 categories are salient by their difference. However, when L1 and L2 categories are quite similar, then a sort of warp of L1 and L2 perceptions will occur. Because SLM operationalizes listening perception through L1 and L2 perceptual representations, highlighting phonetic awareness both in L1 and L2, the researcher adopted this model for the study.

In this study, the SLM would detect and predict Turkish listeners' difficulty perceiving the place of articulation of both content and function words in an idea unit, yet with different

degrees of difficulty. Because Turkish is agglutinative, and function words are connected to content words through employing inflections to the root of a word, it could be predicted according to SLM that the difference of enunciation in both content and function words will be learned as new L2 phonetic categories.

2.3. Cognitive Theory of Multimedia Learning (CTML)

Drawn from several cognitive theories such as Baddeley's model of working memory, Paivio's dual coding theory, and Sweller's theory of cognitive code, the CTML was developed by Richard E. Mayor who focused on promoting student understanding by multimedia instructional practices and the implementation of the cognitive strategies to enable students to learn the subject matter efficiently. Multimedia is defined as the integration of words and pictures through which mental representation is built and active learning is actualized (Mayer, 2001, 2005). In order to reach optimum learning in CTML, the words can be presented in spoken or written modality and pictures can be presented through any modality of graphical imaging such as illustrations, photos, animations or videos (Sorden, 2005). As such CTML can provide a powerful instructional design regarding listening comprehension, RFsI in particular. Following one of the main aims of multimedia instruction, the researcher attempts to encourage the learners to establish a coherent mental representation from the RFs presented through the sequential stages in the designated web page as well as the summary presented at the end of the instruction pertaining to the preceding instruction of the RFs. What the researcher expects ofthe novice learners of the RFs is to conceptualize the RFs as an active learner, ultimately constructing meaningful and intelligible comprehension of the RFs in L2 listening.

Mayer's (2001) CTML is based on cognitive science that embodies three main assumptions in relation to how the information processing system works. The three assumptions are the dual channel, the limited capacity and the active processing (Mayer & Moreno, 2002,

2003). The first assumption, the dual channel, refers to the idea that working memory has subsystems as auditory and visual channels. The second assumption, the limited capacity, suggests that each subsystem of working memory has a limited capacity. And the third one, the active processing assumption states that learners construct knowledge effectively when they pay attention to the subject matter, rectify and store it into a coherent mental structure, as well as integrate it with their prior knowledge (Mayer, 2001, 2005, 2009).

A framework for the CTML is presented in Figure 2. The theory is displayed in two sets of rows and five columns that are linked to the following sections via arrows within itself. The two rows represent the two information-processing systems as auditory/verbal system on the top and the visual/pictorial channel on the bottom. The five columns illustrated in the figure are labelled as the modes of knowledge representation that is explained in the following:

1- Physical representation refers to words or pictures that are presented to the learner.
2- Sensory representation refers to ears and eyes of the learner
3- Shallow working memory representations are like sounds or images attained by the learner
4- Deep working memory representations are verbal and pictorial models constructed by the learner
5- Long term memory representation are the learners' relevant prior knowledge (Mayer & Moreno, 2003)

In relation to the limited capacity assumption, except for the working memory system, long term memory and the capacity for physical word or picture representation are unlimited.

Cognitive processing is represented by the arrows. Learners select words or images, construct a coherent verbal representation through organizing words or images, then integrate the verbal or pictorial model that is activated or connected through the learners' prior

knowledge. In brief, active learning through the model is actualized in five cognitive processes: selecting words, selecting images, organizing words, organizing images and integrating.

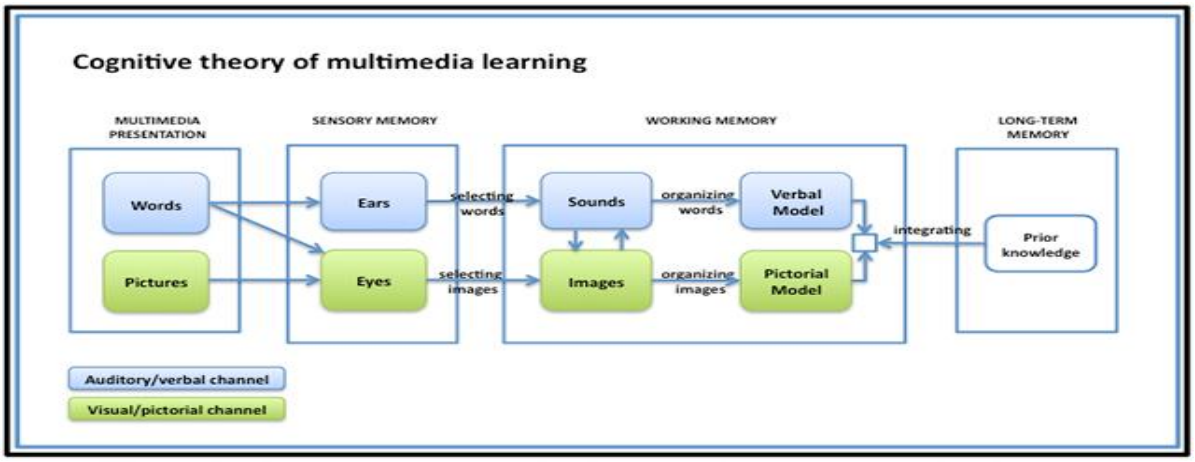


Figure 2. Cognitive Theory of Multimedia Learning (Mayer & Moreno, 2003)

CHAPTER 3- LITERATURE REVIEW

This chapter provides a literature review of studies in relation to the target RFs – contraction, assimilation, flap, elision and linking - and Reduced Forms Instruction (RFsI) using a variety of methods. This chapter consists of five headings as follows:

Studies Addressing English Reduced Forms

Studies Addressing Modality in Listening comprehension

Studies Addressing Proficiency in Listening Comprehension

The Statement of the Problem

The Present Study and its Significance

Research Questions

3.1. Studies Addressing English Reduced Forms

Since the seminal study conducted by Henrichsen (1984) on RFs, research has been conducted from a variety of angles, especially, in relation to the RFs' effect on listening comprehension. The existing body of research on RFs has explored four main factors along with their emphasis on L2 learners' listening comprehension development: perception, processing, production and instruction of RFs.

In relation to listening comprehension development, Henrichsen (1984) aimed to determine how presence and absence of reduced forms influence the comprehensibility of English input. Recruiting 65 subjects with three distinct English proficiency levels (high, low and native speakers), and employing two treatment conditions (presence or absence of RFs), subjects were given three tests as RF exercises in two versions: one with the presence and another without the presence of RFs as well as Bowen's (1975) Integrative Grammar Test. The RF exercise test included the RFs of "contraction" and "assimilation". The result of the study

showed that there was a difference between the RF test scores of native speakers and those of high-level language learners in the presence of RFs, yet the difference was not significant in the condition without the RFs.

A comprehensive account of how multi modal processing via multimedia would be available for listening comprehension development was presented by Meskill (1996). Highlighting the importance of the use of multimedia for instructional purposes, Meskill (1996) remarks that learners can have the chance to process audio input, text and video simultaneously via multimedia. Furthermore, she emphasizes that multimedia is especially convenient to guide learners in their understanding of RFs of English due to the fact that the delivery of the written version of the fast spoken input on a computer screen allows learners to access to both written and spoken forms. She also gives the examples of "wadjagonnado?" instead of "what are you going to do?" or "whaddjasay" instead of "What did you say?" (pp.190) to compare the aural and the written text so that learners can decipher the RFs. Meskill argued that reduced forms could be delivered through the contrast forms in a written text and perception or pronunciation of the RFs could be explicitly taught.

In an examination of perception of native English RFs in Chinese Learners, Wong, Chung, Leung, Bishop and Chow (2015) investigated the role of perception of English RFs in listening comprehension. In their investigation, they tested 60 Chinese-speaking tertiary level students through a battery of tasks such as general listening comprehension, RF dictation, minimal pair discrimination, speech gating, phonemic awareness, receptive vocabulary and non-word repetition. In the RF dictation task, the RFs included nine types of representatives: contraction, juncture, elision, vowel weakening, assimilation, intrusion, flapping, glottalization and palatalization, each of which was comprised of 8 target sentences. The results showed that the ability to perceive RFs phonologically was a significant predictor of comprehension of English speech by the L2 learners. The researchers also found that receptive vocabulary and

part-word recognition were crucial for successful comprehension of English RFs. Based on the phonological representations hypothesis, they further classified the phonological components that were predictive of RF perception in regard to their relative importance and the direct or indirect effect. As implied by the study, vocabulary and part word recognition may work independently in underpinning the comprehension of RF perception.

Even though there have been few studies investigating the effects of RFsI on listening comprehension recently, listeners' performance seems to have improved when they were delivered instruction on these peculiar features (Brown, 2006; Brown & Hilferty, 1986a, 1986b; Henrichsen, 1984; Brown & Hilferty, 2006; Ito, 2006; Masahiro, 2012; Matsuzawa, 2006; Yang, Lin and Chung 2009; Underwood & Wallace, 2012, Alameen, 2014; Ahmadian & Matour 2014). Brown and Hilferty (1986b) investigated the degree to which RFsI was effective for 32 intermediate level Chinese graduate students. The treatment group received four weeks of daily RFsI in ten minutes on each day, and the control group received the same amount of instruction only on discrimination of minimal pairs. The researchers administered three tests: the Integrative Grammar Test, a version of UCLA English as a Second Language Placement Examination listening comprehension subtest, and a RF dictation task. The results showed that RFsI had a significant effect on students' performance of the dictation task. Yet, they found no difference between the two groups in terms of listening comprehension that was measured by the UCLA listening comprehension test. One explanation given for this was that the RFs in this test represented a very small part of this subtest. Nonetheless, the results indicate some evidence that RFsI may not be helpful in overall listening comprehension. In another study dealing with the instruction of RFs, Brown and Hilferty (2006) investigated the effectiveness of teaching RFs for improving listening comprehension among 32 EFL students in an experimental study in China. The instruction was delivered on contractions during a total of thirty ten-minute classes. The control group received the same number of lessons that covered minimal pairs in

pronunciation. The researchers found a beneficial effect on listening comprehension in favor of the experimental group in three measures they utilized: the Bowen (1976) Integrative Grammar Test, the UCLA English as a Second Language Placement Examination listening comprehension subtest, and RF dictations. In the same vein, introducing the contrastive analysis in relation RFs, Toda (2006) dealt with the instruction of contraction, elision, contraction and assimilation in Japanese focusing on the instruction of contrastive analyses in English and found similarities in both languages in relation to reduced forms. He suggested that it would be much more beneficial for L2 learners to present contrastive samples of RFs in their L1 so that they can perceive and internalize the RFs. Matsuzawa (2006) also proposed instruction to improve the comprehension of RFs, selecting ten RFs that seemed challenging for Japanese college graduates. The selected categories were assimilation, contractions, deletion, flapping, glottalization, linking, -nt reduction, palatalization and weak forms of function words. Three versions of dictation tasks with 30 sentences in each one and a retention test were administered to 20 people with no control group in order to identify the performance scores of the reduced forms. The results of the study showed that the students' performance in all chosen categories highly improved. Replicating Matsuzawa's (2006) study, Cormier, Zhang and Matsuzawa (2013) investigated whether Chinese business people could understand RFs and whether instruction of RFs would improve learners' listening comprehension of RFs. The RF categories in this study included assimilation, contraction, deletion, flapping, glottalization and linking. Adopting Matsuzawa's (2006) instructional materials as well as extending the test materials with additional ones, 37 Chinese business people without a control group were delivered a posttest and a retention test through a gap-filling task composed of 30 sentences after the delivery of a four-hour instruction on target RFs. The results of the study showed that the comprehension of RFs by Chinese business people was limited and the instruction was helpful to the participants.

In an attempt to adopt audio-visual feedback and audio only feedback in teaching linking and developing online materials, Alameen (2014) investigated the effectiveness of linking instruction on nonnative speech perception and production. A total of 45 students in two experimental groups and a control group with 15 students in each one were recruited. A pretest, posttest and delayed test design was employed and students' perception and production were measured by a dictation task of old and new sentences and audio recordings. The results indicated that both audio and audiovisual training were effective in developing learners' perception and production of linking. However, the method of audio visual instruction with waveforms yielded greater improvement both in perception and production of linking. The audiovisual training also received more positive learner feedback than that of audio only training. The results also showed that learners' improvement of linking high frequency words was higher than that of low frequency words. Similarly, Yang, Lin and Chung (2009) moved the mode of instruction of RFs from audio to video medium and reported the positive effect of the development of a learning program on comprehension of contraction, assimilation, elision, linking, and hybrid through movies or television programs. They recruited 32 students at the tertiary level, developing an instructional system in five modules called "Support Vector Machine , Training Module, Characteristic Judging Module, Characteristic Annotation Module, Listening Close Module, and Film Subtitles Searching Module" (Yang et al., *ibid.,* p.76). Students chose an assigned film, the 10th season of an American television series, "Friends", and a subtitle source from the database of the RFs. The subtitles were imported in the Characteristic Judging Module that followed to examine the following: the characteristics of the sentence, word positioning within the sentence, the syllable position in each word, and articulation of new syllables by the nature of a reduced form. Another step to follow was to import the information to a Characteristic Annotation Module to produce an XML file in order to create a sentence pattern database of RFs in conversations. The sentence pattern became a

reference resource along with a keyword function for the searching module as well as the Listening Close Module. In brief, the program helped the students observe RFs that they had learned.

In another study, Underwood and Wallace (2012) highlighted the importance of RFsI and investigated the comprehension and productive development of RFs with 52 low-proficiency level undergraduate Japanese students. An eleven-week instruction on RFs such as elision, assimilation, and elision/assimilation was provided in two parts, the first of which consisted of 10- 20 minutes of weekly instruction to develop conversation along with the RFs. The second part of instruction was covered through a textbook entitled "Speak Easy: Spoken English for Japanese Learners" by Underwood, Bridges & Hattori (2010): it aimed to expose students in RFs through the dialogues in the book. The results of the study showed a significant increase in comprehension of RFs. In relation to the productive development of RFs, the researchers found that there was an increase in the production of RFs measured by pre- and post-instruction speaking tests. Employing two experimental and a control group in a study with a pretest and posttest design, Ahmadian and Matour (2014) investigated the effect of explicit instruction of RFs on listening comprehension with forty Persian speaking English learners. The experimental group received explicit instruction on elision, assimilation, and linking through the use of a website as well as a textbook during the three sessions of a 75-minute class. Conversely, the control group followed their usual classes only with implicit instruction on listening comprehension. On the basis of the pretest and posttest scores assessed through a listening comprehension test and a gap filling task on RFs, the results indicated that the experimental group outperformed the control group, thereby indicating that explicit instruction of RFs was helpful for developing learners' listening comprehension skill.

Czech students' production of RFs was examined by Erbanova (2014) and such aspects of RFs as stress, intonation and rhythm in English speech in particular were identified. The

researcher delivered instruction on sentence stress, rhythm, linking and elision to 11 students at intermediate language level through the methods of communicative learning and task-based instruction. The students' RF production skill was assessed through two recordings –reading aloud and free speech. The researcher found that almost all participants doubled their performance in both speaking tasks of RFs and that the instruction was highly effective on the part of the learners.

The effect of context in assimilation was investigated by Gaskell and Snoeren (2008) by conducting two experiments. In their first experiment, 20 undergraduate students were presented with a set of spoken sentences in a semantically neutral sentential context, with the two response choices (*run vs rum*) to identify the target word (p.8.). A delayed response by the participants meant that assimilation created lexical ambiguity, which also led to higher miscommunication rates in the identification task. In the second experiment, different groups composed of 49 participants were asked to respond to 40-item sentences that were identical to those utilized in the first experiment, except that each sentence was preceded by a semantically biasing sentence. The result indicated that there is no context effect in assimilation. This finding contradicts Gow and Im (2004). The contradictory results are possibly due to the perceptual accounts of language specific knowledge as they dealt with the perceptions of Hungarian and Korean students.

More recently, a cross-linguistic study of perceptual processing by Mitterer, Kim and Cho (2013) investigated how Korean listeners cope with the consequences of labial-to-velar place assimilation. They probed whether the mismatch between spoken and printed words would be treated as mispronunciation, or whether listeners would associate the context to trigger an assimilation. Recruiting 20 Korean undergraduate students, the researchers utilized four one syllable minimal pairs in a categorization task out of 48 minimal pairs. The instructions were given through the use of a screen in which participants clicked on a labial-ending printed target

while hearing a velar-ending spoken word in two conditions to collect reaction time and eye tracking data: when a target word was followed by the velar consonant /k/ that activates assimilation, and when the target word was followed by the alveolar consonant /s/, as the control context, in which no assimilation could arise. Results in both data showed that listeners were better able to deal with the mismatch in the assimilation-activating than in control context.

Flap is another phenomenon of RFs that commonly occurs in a stream of speech. Most of the work regarding flapping has investigated either its perception (Idsardi & Sung, 2003; Sung, 2003a; Tucker, 2007), its production (Sung, 2003b; Eddington & Elzinga 2008) or its nature in the representation of lexicon (Connine, 2004). Idsardi and Sung (2003) focused on the comparison of acoustics and perception of American English and Korean flaps through a phoneme identification task in their cross-linguistic study. Korean flap is manifested in /r/ sound while American English flap is characterized in /t/ and /d/ sounds. Some words are presented in either embedded in either a flap or its variations. Students were asked to identify the initial segment (b or p) of word or non-word variations as in "pretty- betty" (p.187).The results indicated that American English and Korean flaps are identical and have no statistically significant differences in duration and instances of burst. The researchers further suggested that listeners perceive flaps based on their preexisting representation in their lexical memory, in other words, based on their first language background. In another study dealing with flapping, Tucker (2007) investigated the effect of flapping on processing. The total of 64 undergraduate American students whose L1 is English participated in the study. Four experiments were designed and measured by the auditory lexical decision and cross-modal identity priming task. Participants' responses to reduced and unreduced flaps were recorded. The results indicated that the phonetic variation in speech styles including reduction causes variations in processing. Additionally, it was found that processing of flapping was inhibited by weakened acoustic information and that participants used information about speech style to process the widely

varying acoustic reflection of a segment in RFs. Connine (2004) also conducted a study on the American English flap and that nature of its representation in the lexicon. Similar to Idsardi and Sung (2003), Connine contrasted flapped words with real and pseudo words. The contrasted items were /t/ and /r/. The results indicated that listener responses as highly frequent word such as pretty was contained in the lexical representation of words rather than that of the pseudo word “bretty”.

The influence of flapping on listening comprehension has been discussed by researchers. In a cross-language acoustic study on both perception and production of flapping, Sung (2003b) investigated the relationship between the phonological phenomenon and the effects of the L1 Korean phonological system in perception with 10 American and 10 Korean undergraduate students. Flaps in both American English and Korean were stated to be acoustically similar though they were categorized as obstruents in American English and sonorants in Korean. A word list of the test items both in English and Korean orthography was given and students’ production was recorded. The comparison of the acoustic properties were measured by closure duration, existence of voicing and occurrence of bursts. The result of the production experiment yielded that there were no significant differences between American English and Korean flaps in relation to the mean values of closure duration and mean percentage of voicing instances. However, the results also showed that there was a significant difference in the mean values of burst occurrence with more burst in Korean flaps. On the basis of the findings, the researcher suggested that phonetic properties of sounds were not able to account for phonological functions of the sounds. In another study describing two corpus analyses, (Eddington & Elzinga, 2008) investigated the influence of stress and following vowel quality on word-internal flapping. More precisely, they examined the phonetic context of word internal flapping by taking into account some entities such as stress placement, following phone, and syllabification. In the two experiments conducted, they tested whether the specific allophones

of /t/, and /d/ influence judgements of syllabification. In comparison of stress and vowel quality, the researchers utilized "*CMU Pronouncing Dictionary (n.d.)"* (p. 247) and chose 3114 words as the representative of word internal flapping. A total of 39 test items –flapped words with initial stress and final stress- along with nonce words were read to 26 native speakers of American and asked which one sounded like a natural American English pronunciation. Results indicated that stress and vowel quality are main indicators of whether /t/ or /d/ appear word-medially in American English.

In addition to the RF perception studies, a body of research on RF production also exists in literature. Saad and Pilus (2013) investigated the occurrences of phonological assimilation in the Malaysian language teachers' (L2) speech of English and native speakers of British English (L1). The study compared reading and spontaneous speech performance by the two groups using the three types of tasks as 11 phrases, 8 sentences another 5 phrases. They found that L1 group assimilated more than the L2 group in their production. The performance across different task types was compared. The results indicated that assimilation occurred more often when the task required less focus on the words.

In an investigation of linking, Melenca (2001) developed an instructional program and investigated the effectiveness of linking instruction on learners' speech production. A pretest, treatment and a posttest research design with an experimental and control group was implemented among nine tertiary level Japanese learners of English. The experimental group received the pronunciation instruction on how to link words with three sound boundaries as consonant to vowel, vowel to vowel and consonant to consonant. The control group read the poetry with no explicit instruction on linking. The instruction of the pronunciation in linking took in a series three 30-minute instructional activities. The learners' speech performance was measured by the tasks of reading aloud and elicited free-speech monologues. Though the

sample size employed in the study was small, results indicated that learners' awareness of the use of linking while speaking seemed to have increased.

In another study focusing on linking, Alameen (2014) investigated the effectiveness of using two methods of teaching linking to learners of English over a two week period. The two methods included audio-visual (AV) feedback and audio only (AO) feedback. A pretest, posttest and a delayed test design with two treatment groups and a control group was implemented among a group of 45 learners of English. One of the treatment groups of 15 participants undertook audio-visual feedback, whereas another treatment group of 15 students undertook audio-only feedback so as to help improve learners' perception and production of linking. The control group received no training but took the pretest and posttest. The learners' performance on perception and production of linking was measured by the learners' dictation of old and new sentences, their audio recordings of the two read texts as well as a post training questionnaire. The influence of high frequency and low frequency words on linking production was the additional focus of the study. Results of the study indicated that both of the AV and AO training were facilitative in increasing learners' perception and production of linking and that the facilitative effect was also retained one month after the training. In relation to the learners' improvement in linking high and low frequency words, the results indicated that low frequency words were more difficult to improve than high frequency words.

As can be seen from the above mentioned studies, RF studies are being conducted in relation to receptive and productive skills as well as its processing. The present study aims to contribute to the field of listening comprehension research with its comprehensive and empirical focus on the features, namely, contraction, assimilation, flap, elision and linking.

3.2. Studies Addressing Modality in L2 Listening comprehension

The popularity of digital technology has enabled the additional modalities to be integrated both in the instruction and testing of listening comprehension. A significant body of research comparing modalities in the context of enhancing listening comprehension has emerged since the 1970s. The types of modality studied in earlier investigations ranged from audio (such as traditional audio CDs that came with the course textbook, radios and podcasts) to visual (such as video and multimedia or the amalgamation of both or even multiple modalities).

Aural input is considered to be a main stimulus in L2 language learning as well as listening comprehension. Rosell-Aguilar (2007) presented a comprehensive overview of podcast materials both in audio and video form and asserted that effective practice in podcasting was worthwhile for language learners. Many researchers utilized audio modality mainly for providing target language input or supporting learners' independent learning (Chang, 2009; Cross, 2013; O'Bryan & Hegelheimer, 2007; Yeh, 2013).

Employing two modalities of auditory input, Chang (2009) compared the impact of "reading while listening (R/L)" and "listening only (L/O)" modality on listeners' listening comprehension performance. A total of 84 college students were assigned to read two story books in one of the modalities that followed the listening comprehension tests with 95 items in the form of sequencing and gap filling. A questionnaire was also administered so as to get students' perceptions regarding the two stories. Results indicated that students gained only 10% more with R/L modality and that they opted for the R/L modality rather than that of L/O modality in their L2 listening.

Delivering simultaneous presentation of written and auditory input is considered not to have beneficial effects as well. Kalyuga, Chandler and Sweller (2004) investigated whether the delivery of the same material in written and spoken input is beneficial for listening comprehension. Based on cognitive load theory, Kalyuga et al. (2004) conducted three

experiments with 25 students in an attempt to compare the auditory only and visual modalities through four different sections of text that followed a total of 32 multiple choice questions regarding the texts delivered. Results indicated that presenting the same input through video modality was not verified to be beneficial, and that an excessive working load memory was generated on the part of the learners. Toh, Munassar, Yahaya (2010) investigated the effect of redundancy and modality on L2 learners' listening comprehension and their perceived motivation towards the modality of instruction. The two types of modalities included a redundant modality and the modality: in the first one static pictures and audio narration were delivered along with synchronized redundant on screen text yet in the second modality, only static pictures audio were presented. Pretest and posttest design was adopted and a total of 209 Yemeni students participated in the study. Testing instruments were comprised of 20 multiple choice comprehension questions from an English comprehension passage and the Instructional Material Motivation Scale. Results of the study demonstrated that the students in the redundancy mode could achieve better gains than the ones in the modality mode in listening comprehension.

In another study, in an attempt to present pedagogical insights into independent listening of podcasts implemented as a case study of a Japanese learner of English as a foreign language, Cross (2013) found that the autonomous use of the BBC's online podcasts could improve students' L2 listening ability. The researcher explored the effect of delivering guidance and feedback on meta-textual skills and aspects of metacognitive instruction on an L2 learner's autonomous use of podcasts over a period of 9 weeks. Podcasts were presented by a multimedia file delivered through the internet using syndication feeds, for playback on mobile devices and/or computers or on portable players after downloading the one in interest via the internet. Meta-textual skills is regarded as a phenomenon that enables students' improvement from lower-order text comprehension processes such as word recognition and syntactic parsing to

higher level ones such as drawing conclusion about the purpose and content of the text (Bull & Anstey, 2010). Data collection tools were listening journals in which the student recorded aspects concerning the listening podcasts that she had chosen to listen from the BBC and an interview. The results of the weekly journal entries and transcribed interview responses indicated that the learner could improve her metacognitive capacity and enhance her understanding of what listening comprehension in an L2 entails, showing improvements in her listening performance.

The importance of podcasts in developing language learners' listening skills and investigated the extent to which CALL could be integrated into an academic English as a Second Language course along with the instruction of listening strategies was also highlighted by O'Bryan and Hegelheimer (2007). Both graduate and undergraduate students from a range of majors such as Economics and Engineering participated in the study over fifteen weeks with two hours per session of instruction. A total of fourteen podcasts were delivered in two modalities designed for the listening course as two video podcasts and twelve audio podcasts. Students received explicit strategy instruction on a range of academic and general listening strategies in which students were listening to the lectures, taking notes and coping with the difficulties they encountered in their audio and video listening materials. On the basis of the reflective journals collected from instructors and structured interviews and surveys with the students, results of the study showed that podcasts were potentially facilitative for developing listening comprehension skills and that the delivery of the video podcast – the notetaking in this case - was reported to be more appealing and informative than the audio counterparts on the part of the students.

In another study dealing with podcasts as audio resources to promote extensive listening and independent learning, Yeh (2013) examined students' learning experiences and their projections of using podcasts for educational purposes over two months. A total of 23

undergraduate students participated in teacher-directed podcast courses and they wrote personal learning experiences, diaries, and gave oral presentations regarding their learning outcomes of the podcasts. A triangulation of the data collection tools - students' podcast diaries, questionnaire responses as well as the teacher-researcher's notes on students' personal learning - was employed. Results of the study indicated that students were strategic in choosing podcasts at their own proficiency level and that they found learning through podcasts is both convenient and effective for improving their listening comprehension.

A number of studies combined more than one modality to compare the effectiveness of the audio and video modalities in an identical listening comprehension test (Başal, Gülözer & Demir, 2015; Batty, 2015; Hayati & Mohmedi, 2011; Pardo-Ballester, 2016; Wagner, 2010). Hayati & Mohmedi (2011) focused on the video modality in relation to listening comprehension, examining the efficacy of subtitles under the three treatment modalities as English subtitles, Persian subtitles and no subtitles with 90 undergraduate students majoring in ELT department. The students watched the six episodes of a documentary film under one of the randomly assigned modality, which ensued the six sets of multiple choice tests to assess listening comprehension of the learners. Results indicated that the English subtitles group outperformed the Persian subtitles group. Of all the groups, the group with no subtitles achieved the least performance in listening comprehension test. Batty (2015) also compared the audio and video modalities, investigating interactions between format -multiple choice listening test forms- and the three text types – monologue, conversation, and lecture. A three minute listening tests comprised from a placement test along with a four option multiple choice questions in the two modalities were delivered to a 164 Japanese students majoring in English in four different proficiency level. The delivery of audio modality included a still picture of a speaker along with the name of the test. Many-facet Rasch modeling was utilized to compare the difficulties of the audio and video format in which two main concepts were focused: interaction between audio

and video modality and text type. In this study, this modeling referred to the multiple choice test data, a one or a zero as being the product of the difficulties of the facets. Results of the study indicated that modality had no effect on students' responses, that is, both audio and video modality were equally effective on the part of the students to answer the listening comprehension test questions. Similarly, Başal, Gülözer and Demir (2015) also compared audio and video modality in a post-test only control group design study in which they examined how the use of audio and video modality would affect L2 listening test-takers' performance. A total of 57 EFL learners majoring in ELT program participated in the study. The instruments used consisted of four lectures chosen from a TOEFL textbook and five items of multiple choice comprehension questions for each lectures. The questions inquired about the main idea, vocabulary as well as inferred meaning based on a clear reference from the text. Results revealed that students answering the questions in each modality performed in idiosyncratic ways, so it was difficult to draw conclusions that would apply to all students in one modality. Some students in video modality could perform better in two of the lectures whereas some students in audio modality could perform better in audio modality depending on the topic familiarity. As such it could be argued that the use of video might also be potentially distracting on the part of the language learners, which could lead to inhibit comprehension. On the other hand, the findings of Batty (2015) and Başal et al.'s study (2015) contradict with what Wagner (2010) has found in which he asserted that the video group outperformed the audio group on the overall posttest. Designing a quasi-experimental pretest and posttest study, he investigated the effect of non-verbal information in a video listening text on learners' listening test performance, comparing the performance of two groups on a listening test through audio only or and video only modality. The set of short dialogue texts and a three to four minute lecture type of listening along with multiple-choice and open-ended comprehension questions were administered to the total of 112 students assigned in experimental and control groups.

In the same vein, learners had better listening comprehension scores in video modality than in audio modality in another study. Pardo-Ballester (2016) compared the effects of listening support in audio and video modality adding the redundancy elements for the both conditions for the total of 246 intermediate level of Spanish learners who enrolled in two distinct format of the courses as online – hybrid and face2face- blended. A cross-over design was adopted and a battery of eight web-based listening tests with monologues and multiple choice questions for each one in audio and video modality were administered. While the video modality included word fillers such as umm, eh, the audio modality was in audible form with non-word filler.

Focusing exclusively on single and bimodal modality, Bird and Williams (2002) investigated the effect of the two modalities of presentation as sound or text modality (single) and sound and text modality (bimodal) on vocabulary learning. A total of 16 native speakers of English and 16 non-native speakers of English in high proficiency level participated in the study. Two sets of 20 words classified as familiar and unfamiliar ones along with the fillers were constructed by the researchers. Conducting two experiments, the researchers measured the students' performance in both modality through the improvements in spoken word recognition and recognition memory. Results of the experiment 1 revealed that auditory lexical decisions on familiar words were equally primed by the two modalities of presentation. However, no priming effect was realized for non-words. In the experiment 2, a rhyme judgement task on non-words was employed, which resulted in priming effect in that auditory rhyme judgement decisions were primed by bimodal presentation rather than that of single modality. The issue Bird and Williams raised on the assessment of implicit and explicit memory with a single and bimodal presentation could become a valuable aid for even advanced level of language learners' word learning as well as their listening comprehension.

Students' use of subtitles and the written scripts were taken into account and acknowledged in some studies (Diao, Chandler & Sweller 2007; Grgurovic, Hegelheimer, 2007). Employing the three types of instructional modalities, Diao, Chandler and Sweller (2007) investigated the effect of simultaneous written presentations on L2 listening comprehension based on cognitive load theory. The three instructional modalities consisted of listening with auditory materials only, listening with a full written script and listening with simultaneous subtitled text. Of all the 159 tertiary level Chinese students recruited, 53 students were assigned to listening only modality, 49 to the listening and full script modality, 57 to the listening and simultaneous subtitles modality. The students were delivered listening instruction and a subsequent test through a computer program in which three instructional modalities were installed. Initially, learners' prior vocabulary knowledge was tested on the basis of the presented words' translation from English to Chinese. Results indicated that the students in listening with simultaneous subtitled text outperformed the ones in listening with auditory input only.

The use of video texts help listeners to access the non-verbal components of communication that can help learners process and comprehend the aural input. For example in an attempt to explore the consistency of the learners' test taking behavior on an L2 video listening test, Wagner (2007) looked at the extent to which L2 listeners watched the video monitor during the time they were delivered a listening video text. Employing 36 tertiary level of students, the researcher developed and incorporated six separate video listening tasks as three dialogue texts and three lecture texts that followed the comprehension questions in a short answer and the multiple choice forms. In order to evaluate the learners' test taking behavior, Wagner videotaped the students, and computed the amount of time that test-takers made eye contact with the video monitor while they were taking the test. Results showed that the test takers directed to the video monitor 69% of the time while the video was played. In other words, the students highly interacted with the video, paying close attention to the video monitor over

two thirds of the time. In this regard it can be obvious to postulate that the use of videos on L2 listening test tasks could be effective. Furthermore, video could be employed in L2 listening instruction not only because it provides the simulation of the features of authentic spoken language but also the incorporation of the visual channel in presenting the spoken input could help learners construct and conceptualize the information.

Aiming to test listeners' engagement with two modes of delivery comparing the listening performance in both still images and video modality, Ockey (2007) carried out a study with a total of 6 international students (French, Spanish, Taiwanese, Chinese, Japanese and Korean) who were categorized into three proficiency levels (advanced, upper-intermediate and lower intermediate. A videotaped university classroom lecture in five still images extracted from the videotaped lecture and video modality were displayed to listeners and listening comprehension was measured through observations, retrospective reports and interviews. Findings based on observation data indicated that listeners engaged very little with video input. In fact, listeners' engagement was not uniform across the two modalities. Findings based on retrospective reports indicated that the mode of still images were beneficial on the outset to conceptualize the context of listening item yet they were not potential cues to follow up the subject matter on the part of the learners. Findings regarding the video modality yielded a contradictory result as it was regarded helpful and distracting on the one side, yet not helpful and distracting on the other side. The researcher attributed the contradictory result to individual differences of the participants.

The effects of multimodality on L2 comprehension was investigated by Guichon and McLornan (2008). A total of 40 undergraduate intermediate level French learners of English, assigned to four groups with 10 in each one, were exposed to four different types of modalities, group 1 to sound alone, group 2 to image and sound modalities, group 3 to image sound and L1 subtitles and group 4 to image, sound and L2 subtitles. A 3-minute BBC news report was

presented to each group in the modality they were assigned. Students' comprehension of the testing material was measured by a summary written by the students. The results indicated that of all the modalities employed, the one with L2 subtitling was the most beneficial for the learners.

In order to test the voice identification benefits of visual representation in relation to voice identification with multi-talkers, Kilgore (2009) conducted two experiments. A total of 18 participants responded in the task for four and eight voice environments in the first experiment. Selected stimuli from the total of 2048 auditory stimuli adopted from the Coordinate Response Measure speech corpus were presented through three distinct display conditions as non-spatialized voices with an audio-only display, under three display conditions, spatialized voices reinforced by a visual display of relative talker locations. The same task was given in the second experiment to 32 participants with the only difference that the task included audio and visual displays of differing angular scale. The participants' response time and accuracy of response were automatically measured and recorded. The results indicated that visually talker locations augmented voice identification performance in relation to response time and accuracy.

In a meta-analysis of research studies on the effect of captioning for listening comprehension and vocabulary learning, Perez, Noortgate and Desmet (2013) reviewed journal articles and doctoral dissertations written between 1989 and 2011. Reviewing over 150 research studies, the researchers found out about 13 published journal articles and 5 unpublished doctoral dissertations on the basis of the inclusion criteria they initially determined. Their criteria in selecting the studies included the following four main concepts. First, the studies contained quantitative and statistical data for calculating the effect size. Secondly, the studies aimed at using video in the context of L2 learning and dealt with L2 on-screen text as modification of the input. Thirdly, listening comprehension and /or vocabulary learning were dependent

variables in the studies. Finally, the ones compared a control group (without captioning) and a treatment group (with captioning), either with two independent groups or with one group tested under both experimental conditions. The total of 18 retained studies were coded under the categories such as publication characteristics, learner characteristics, research design features, video materials as well as test features so as to categorize and determine their common features. The researchers measured the effect size of the studies by Hedges' g that was calculated using basic descriptive statistics. The results revealed that the captioning group significantly outperformed the control group on listening comprehension posttests. In relation to the effect size for vocabulary learning, the results revealed the large effect size of captioning for vocabulary learning as well. The researchers remarked that captioning could have a triggering effect on learners in that it reinforced learners' comprehension through video based materials.

A study on the effect of audio-assisted reading on reading rates and comprehension was conducted by Chang and Millett (2015) using a pre-test, posttest and a delayed posttest. A total of 64 students participated in two groups: a silent reading group (SR) and an audio assisted reading group (AR). The training took over a 26 week, and it was implemented through 20 graded readers. The results indicated that both groups increased the reading rates and their comprehension levels. Yet, the AR group is the one who outperformed the SR group in relation to reading tests and comprehension levels. In further analysis on the delayed test scores, it was found that the improvement in both group was retained.

The question of whether listeners recalibrate the place of articulation contrast in sounds /p/ and /t/ across manner of articulation to nasals /m/ and /n/ using lipread information was investigated by Reinisch and Mitterer (2016). A total of 55 German undergraduate students were presented a set of 11 different words within a 154 trial decision exposure. Results indicated that recalibration happened although relevel disambiguating cues are not salient in a typical set up for visually guided recalibration where the same input was presented several times. In other

words, visually guided recalibration was effective even when the majority of entities in exposure was completely aligned with audio and visual input.

Nowadays, many recent researchers have shifted from audio to multimedia in which texts or captions along with audio input are integrated into a source of listening material. Yang and Chang (2013) conducted an experimental study with a pretest and post-test design and they tested whether different modes of captions could increase listening comprehension. Three modes of captions are full, keyword-only, and annotated keyword captions. They also investigated the possible contribution of the three captions to the learning of RFs and overall listening comprehension. A total of 44 Taiwanese students were recruited and randomly assigned to one of the three modes of caption groups. The source of captions were animation, cartons, movies and TV series with a total of 51 video clips to be utilized in the test. Target RFs were assimilation, liaison, contraction and elision. Pictorial symbols for each type of RFs were added to facilitate learning in annotated keyword captions mode. For example, while a blue dot indicated an assimilated sound, a grey letter marked a contracted sound. Testing instruments included a total of 41 questions of listening comprehension test covering tasks of dictation cloze, short dialogue comprehension, reduced form recognition as well as RFs marking. Results of the study indicated that the annotated keyword caption group got significantly higher performance in reduced form recognition when compared to that of the two other groups. Furthermore, incorporating the full caption was the least beneficial factor on the part of the listeners. The researchers suggested that the addition of the pictorial symbols provided the maximum effect on learners' listening comprehension.

3.3. Studies Addressing Proficiency in L2 Listening Comprehension

A body of research studies has dealt with the level of proficiency at which learners benefit most from the sources they were delivered in listening comprehension. The results of past research

are mixed. For example, past research found that there was difference between the RF test scores of native speakers and those of high-level language learners in the presence of RFs, yet the difference was not significant in the condition without the RFs. When the low-level and high-level language learners were compared in relation to the comprehension of RFs, high-level learners performed better than the low-level learners in the presence of RFs (Henrichsen, 1984).

A comparison of high-intermediate and low-intermediate proficiency students' listening comprehension scores in relation to the effect of prior knowledge and speech modification - supplying redundant and elaborated information in the listening material - on listening comprehension performance was carried out by Chiang and Dunkel (1992). The four forms speech modification in a lecture included: familiar unmodified, familiar modified, unfamiliar unmodified discourse and unfamiliar- modified topics. A total of 180 students in each of the two proficiency levels and 45 in each of the four experimental groups were assigned and presented two different lectures-"Conficius and Confucianism", "The Amish People and Pennsylvania Dutch Country" adopted from textbooks in the designated modalities. Post lecture materials included 30-item multiple choice test one for modified and unmodified versions of the familiar topic lecture and one for the modified and unmodified versions of the unfamiliar topic lecture. Results indicated that while high intermediate students benefited from speech modifications in which elaboration and redundancy of information was included, low intermediate students did not. Additionally, for both proficiency level students, prior knowledge had a significant impact on memory for information in the passage.

Dealing with the possibility of difference between the high and low proficiency groups in relation to the choice of options in a software program, Hegelheimer and Tower (2004) conducted a study to determine if proficiency plays a role in terms of the options in a CALL program called New Dynamic English, DynEd incorporated in an 8-week syllabus of language

instruction. A total of 94 Emirati EFL students took part in the study. The options displayed on the screen of the program allowed the learners to use a variety of functions through the buttons such as microphone, headphone, rewind, repeat, pause, forward, glossary as well as the option of repeating the previous sentence along with its transcription. Except for the glossary option, all other options were introduced to the learners to use. On the basis of the "records manager" developed within the system, the options were tracked when the control bar of the screen was pressed. The students utilized this program at their own pace at their own choice of exercise. The students in two proficiency level were compared in relation to their choice of options. The results indicated that low proficiency learners preferred to use the option of repeating the previous sentence along with its transcription than the high proficiency learners. Conversely, the repeat button was the one that high proficiency learners utilized much more frequently than the lower proficiency learners. The repeat button on the screen enabled learners to repeat the sentence to which they had previously listened.

In order to examine whether captioned video was beneficial for beginning-level learners, Taylor (2005) divided a total of 85 Spanish learners into two: first year of Spanish (low- proficiency) and three years of Spanish (higher proficiency group). They watched a Spanish language video with or without Spanish captioning. A videotape chosen from a Spanish textbook was used for the study, which included a voiceover narration on the consumption of some foods in Spain and captions as the verbatim transcriptions were incorporated into the video. The two groups' comprehension scores were measured by free recall, multiple choice test in English, self-reports on strategy use. The results indicated that students with higher proficiency group significantly outscored those in lower proficiency group on the free recall measure. The researcher argued that this finding was plausible as the students with more years of study could attain further reading and listening comprehension practice than the ones who were at the first year of their degree. On the other hand, there was no difference between the

captioning and no-captioning groups measured by free recall and a multiple choice listening test in English.

The extent to which L2 listening comprehension is a function of L1 listening comprehension, L2 proficiency or both was investigated by Vandergrift (2006) who employed a hypothesis-testing study in relation to proficiency level. The two hypotheses he asserted were the following: First, "poor listening comprehension in the L2 was due to poor listening comprehension ability in the L1. Low ability L1 listeners would listen poorly in the L2, and good L1 listeners would listen well in the L2". Second, "poor listening comprehension in the L2 is due to inadequate knowledge of L2" (p.9). Seventy five English speaking French learners participated in the study. Participants were tested through French listening comprehension and English listening comprehension test with multiple choice items in both cases. Employing regression analysis, the results indicated that both L1 listening ability and L2 proficiency were significant indicators of L2 listening comprehension and that L2 proficiency accounted for 39 % of the variance in listening comprehension.

A comparison of high-proficiency and low-proficiency level learners in relation to the effect of modality of input on the performance of the learners was conducted by Chang (2009). The proficiency level of the students were classified on the basis of the students' final grade score as those who attained a final grade score of 80 or above were grouped in high listening proficiency level, and a score below 80, in the lower proficiency. The two input modalities presented were reading while listening (R/L) and listening only (L/O). A total of 84 college students participated in the were assigned to read two story books in one of the modalities that followed the listening comprehension tests with 95 items in the form of sequencing and gap filling. Results indicated that for the students at the higher proficiency level there was no difference in students' performance when the input was displayed in R/L modality or L/O. High proficiency learners achieved higher performance on gap-fill in task when the modality was

delivered through L/O and low proficiency learners performed better on gap filling when they were delivered through R/L. However, the results for the lower proficiency students revealed that they performed poorly in both tasks of ordering sequence as well as gap filling when compared to the performance of the higher proficiency level students. Chang argued that different tasks seemed to have some but not a substantial effect on learners' listening performance. The researcher also attributed the performance of the low-level students to the fact that they employed bottom-up skills as they were filling in the gaps during the gap-filling tasks.

Using a total of 61 undergraduate language learners, Rahimi and Abedini (2009) investigated the relationships between EFL learners' self-efficacy regarding listening comprehension and listening proficiency. The testing instruments were twofold: an author designed self- efficacy questionnaire consisting 20 Likert-scale items, and listening diagnostic pretest consisting 30 multiple choice questions. Results of the study indicated that there was a direct and significant correlation between learners' self-efficacy beliefs in relation to language learning and their listening proficiency.

L2 learners' use of captions while watching videos in a listening activity was investigated by Winke, Gass and Sydorenko (2010). One hundred and fifty native speakers of English who were learning Spanish, Russian, Arabic or Chinese took part in the study. Testing instruments included a series of videos on short English documentaries, each of which took about 3-5 minutes in length. The videos were presented twice in the learners' target language: with captioning in the first case and without captioning in the second case. A total of 67 students in the Spanish learners' group were divided into another two groups on the basis of delivery of the captioning modality: the students who were displayed the videos twice without captions and the students who were displayed the videos twice with captions. Based on the comprehension test scores followed by each video, the results indicated that Spanish and Russian learners as

either sophomore students or senior students perform equally in listening comprehension test regardless of year of the study. Winke et al. (2010) suggested that captioning seems to be a potentially powerful tool for all proficiency levels in that it supports processing and provides a substantial language learning tool.

An experimental study to investigate the effects of a metacognitive, process-based approach to teaching L2 listening was conducted by Vandergrift and Tafaghodtari (2010) with two proficiency groups: high-beginner and lower-intermediate French learners delivering metacognitive instruction to one group for over 13 weeks through a pedagogical cycle. Control group was not delivered the instruction in an identical listening sequence across the same period for the control group. 59 students in experimental group listened to texts using a methodology that guided students through the metacognitive processes of planning, monitoring, evaluating and problem solving in L2 listening comprehension. The instruments included Metacognitive Awareness Listening Questionnaire that was utilized three times as at the beginning, middle, and end points of the study. Results demonstrated that both of the proficiency level students in the experimental group outperformed the ones in control group.

The effects of English proficiency and material presentation mode on English listening comprehension, cognitive load, and learning attitude in a learning environment were explored by Chang, Tseng and Tseng (2011). In a quasi-experimental study with 162 Taiwanese undergraduate students, the researchers employed a personal digital assistant (PDA) to deliver training on listening as a ubiquitous learning activity. Three language proficiency levels as beginning, intermediate and advanced on the basis of General English Proficiency Test scores were assigned. Additionally, two different material presentation mode groups as 'spoken message only' and 'text and spoken message' were employed. The ubiquitous learning activity through either PDA or an audio guide included the topics such as exploration of animals, map, and students' location to be displayed on the screen. In other words, in this experimental

learning activity, while the listeners in the spoken message only group received the training through spoken messages, the other ones in the text and spoken message group got the delivery of the same content of training through both text and spoken messages. Four listening passages with a total of 20 multiple choice questions ensued the learning activity. The results indicated that high proficiency learners attained better in listening comprehension and that both high and low proficiency learners trained through the text and spoken message delivery modality had better performance in listening comprehension. On the other hand the learners in low proficiency group who received the training through the modality of text and spoken messages modality had significantly lower extraneous load than learners who were trained through the modality of spoken message. In brief, high English proficiency learners performed better in listening comprehension and they had lower intrinsic and extraneous load than low proficiency learners.

In another study dealing with proficiency levels in a mobile learning context, Chen and Chang (2011) conducted a study to explore whether English proficiency affects the impact of presentation mode on the perceived cognitive load in the process of task engagement. One hundred and sixty- two undergraduate students majoring in English participated in the study. The students utilized the same technological devise, PDA as Chang et al. (2011) utilized as a part of the learning tool of the listening comprehension. Two modalities of presentation were employed: a single and a dual modality. While the students were exposed to the auditory messages in the single modality, the students in dual modality were delivered both audio and textual stimuli simultaneously. Texts for listening comprehension on animals ranging from 180 to 220 words were selected from the websites of National Geographic Each listening comprehension text followed five multiple choice questions. In relation to the assessment tools, the intermediate-level of general English proficiency test was delivered in pretest, which followed the orientation and the training of mobile learning through the PDA screen in the two

modalities. The listening comprehension test took place after the delivery of the training. Cognitive Load Rating Scale and participants' opinion survey were also employed as testing instruments. The results showed that the presentation mode in the dual modality was more facilitative in listening comprehension than the single modality for all the participants regardless of their L2 proficiency levels

The effects of using two types of written advanced organizers and key vocabulary on the improvement of EFL learners' listening comprehension were explored in another study dealing with the learners' proficiency levels (Jafari & Hashim, 2012). Designing a pretest posttest study in two groups as two treatment groups and a control group with a total of 108 sophomore students, the researchers offered the students in the first treatment group the preview a list of key sentences. The second treatment group received a list of vocabulary items. The control group did not received any form of advance organizers. The students were tested with four listening passages in three test formats: multiple choice, short answer and true/false questions. Additionally, an informal interview and attitude questionnaire were employed so as to gather students' reflections on the use of advance organizers in their listening courses. The results indicated that the proficiency level of learners was a significant factor in listening comprehension tests. However, the effect of advanced organizers did not differ when the scores of the two proficiency levels were compared.

In an experimental study with both English monolinguals and Spanish bilinguals, also grouping the bilinguals into three as early, intermediate and late bilinguals depending on their age of exposure to English, Archilla-Suerte, Zevin and Bunta (2012) investigated how age of acquisition and proficiency level is a predicting factor of the native-like perception of statistically dissociated L2 categories. As testing instruments, a picture vocabulary task, a dictation task, and a similarity task with 780 pairs of syllable sounds displayed to be rated in a 4-point scale were given to the total of ninety-eight college students in English for monolinguals

and in both English and Spanish for bilinguals. The results of the study indicated that the intermediate bilinguals did not significantly differ from early bilinguals or from late bilinguals in English proficiency. The researchers attributed this result to the learners' cognitive processes available at the age of L2 exposure concerning the discrimination of non-native sounds. The researchers argue that the perceptual distance that exists between L1 and L2 sounds may facilitate or impair the perception of sounds. In other words, a long acoustic distance between two phonemes may improve segregation while a short distance may lead to perplexity.

An experiment comparing the actual reliance on captioning of 43 low-level, 53 intermediate and 43 high-level Taiwanese students who completed a 12-week listening instruction with captions was conducted by Leveridge and Yang (2014). The students were tested through an English proficiency test, a caption reliance test, self-reports reports pertaining to the perceived degree that students relied on captions for English listening comprehension. The results indicated that captioning was helpful for high-intermediate students only for concentration of listening as well as for cognitive processing and that the real comprehension was provided through the aural message. On the other hand, the students in lower-intermediate level reported that they had close reliance on captions while listening.

The effect of the audio and video modalities on listening comprehension was investigated by Batty (2015), comparing the performance of the two proficiency level of learners in relation to, specifically, interactions between format -multiple choice listening test forms- and the three text types – monologue, conversation, and listening comprehension of a lecture. A three minute listening test comprised from a placement test along with a four option multiple choice questions in the two modalities were delivered to a 164 Japanese students majoring in English in four different language proficiency levels. The delivery of audio modality included a still picture of a speaker along with the name of the test. Results revealed

that the students in four proficiency levels displayed similar performance under the two modalities.

Designing an application on word recognition from speech (WRS), Matthews, O'Toole and Chen (2016) provide the clearest evidence for the degree to which differences in L2 WRS affects the learners' interaction with the application. They implemented a pretest/ treatment/ posttest research design for 65 Chinese students in three different language proficiency levels- high, a moderate and a low proficiency group- The pretest included receptive vocabulary knowledge and a word recognition pretest. The intervention took place through the web-based application with a total of 72 monologues during the five weeks (an hour per week) for all groups in a listening class. Assessment instruments are composed of four types: a task interaction in which learners' the number of times learners chose to listen within the monologues, a task success in which learners transcribed the spoken monologue in written form as well as word recognition gain scores. Results indicated that although there was not a significant difference between the moderate and high groups, there was a significant difference between low and high groups in relation to the task interaction, task success and word learning outcomes that they undertook through the monologues. This study provides clear empirical support for the design of the instructional tasks of listening comprehension to cater to different proficiency levels.

The majority of the studies in listening comprehension have used beginner to advanced proficiency level students and it seems that the use of a variety of tools has been effective at all proficiency levels. Since 1984 the body of research on RFs has been growing with increasing frequency. The present study aims to contribute to the field of L2 listening comprehension research with its comprehensive and empirical focus on the effect of audio and video modality on listening comprehension of RFs in sentential level.

CHAPTER 4. METHODOLOGY

This chapter introduces the research design of the main study, the data that were collected, how they were collected as well as the pilot study.

4.1. Research Design

A mixed method research design was used for this study as seen in Table 2. This method is used when both qualitative and quantitative components exist in a study (Creswell, 2012). For the quantitative part, a pretest, posttest experimental design was utilized while interview and reflection were employed for the qualitative part of the study.

The study was conducted at a language school of a state university where participants were randomly selected for the research, including four treatment groups from high (AHP +RFsI, VHP+ RFsI) and low proficiency groups (ALP+RFsI, VLP+RFsI) who received two different modalities of instructional packages through the web page at www.kainegulozer.com (CONSPERsentA for audio and CONSPERsentB for the video modality) and four control groups (AHP-RFsI, VHP-RFsI, ALP-RFsI, VLP-RFsI) who did not receive anything about the connected speech features explicitly; instead, they followed the syllabus in their course book's CD and DVD in which written and spoken samples regarding the target connected speech features were included implicitly. The study was conducted as a counterbalanced pretest posttest only design (Brown, 2006).

Table 2. Overview of Research Design

Quantitative	Qualitative
Background questionnaire	Interview with AHP+RFsI, ALP+RFsI, VHP+RFsI, and VLP+RFsI groups (Week 7) Week1-Reflections Week2- Reflections Week3- Reflections Week4- Reflections Week5- Reflections
Pre-Test (Week 1)	
1) Dictation task	
2) Discrimination task 3) Listening Comprehension Test Audio to High Proficiency group (AHP+RFsI), Audio to Low Proficiency group (ALP+RFsI), Video to High Proficiency group (VHP+RFsI), Video to Low Proficiency group (VLP+RFsI). Audio to High Proficiency group (AHP-RFsI), Audio to Low Proficiency group (ALP-RFsI), Video to High Proficiency group (VHP-RFsI), Video to Low Proficiency group (VLP-RFsI).	
Training for five weeks	
Post-Test (Week 7)	
1) Dictation Task	
2) Discrimination Task 3) Listening Comprehension Test Audio to High Proficiency group (AHP+RFsI), Audio to Low Proficiency group (ALP+RFsI), Video to High Proficiency group (VHP+RFsI), Video to Low Proficiency group (VLP+RFsI). Audio to High Proficiency group (AHP-RFsI), Audio to Low Proficiency group (ALP-RFsI), Video to High Proficiency group (VHP-RFsI), Video to Low Proficiency group (VLP-RFsI).	A semi-structured interview with Audio & Video group for both proficiency level participants.

In brief the study was conducted as pretest posttest design the sequence of which is displayed in the Table 3.

Table 3. Illustration of the Sequence of the Pretest and Posttest

	Pretest	Treatment	Posttest
Instructional Groups	Test	Instruction	Test
Control Group	Test	Textbook	Test

The participants were randomly selected and assigned into four instructional groups receiving audio and video modality with the two different proficiency levels as AHP+RFsI, ALP+RFsI, VHP+RFsI, and VLP+RFsI and finally into four control groups of high and low

proficiency level as AHP-RFsI, ALP-RFsI, VHP-RFsI, and VLP-RFsI. The procedure on how the researcher selected the participants in both language levels is explained in the participants section in the main study.

The design of modality and the proficiency group is illustrated in the following table 3.

Table 4. The Illustration of the Proficiency Groups and the Modalities

Groups	**Proficiency**	**Modality**	
Experimental	High	Audio	Audio to High Proficiency (AHP+RFsI)
	Low		Audio to Low Proficiency (ALP+RFsI)
	High	Video	Video to High Proficiency (VHP+RFsI)
	Low		Video to Low Proficiency (VLP+RFsI)
Control	High	Audio	The CD of the textbook in a class form Audio to High Proficiency Control Group (AHP-RFsI)
	Low		Audio to Low Proficiency Control Group (ALP-RFsI)
	High	Video	The DVD of the textbook in a class form Video to High Proficiency Control Group (VHP-RFsI)
	Low		Video to Low Proficiency Control Group (VLP-RFsI)

The learners were tested twice throughout the study as given in Table 4. They took the pretest one week before the instruction; immediate posttest, the week after the instructions. Pretest analysis was carried out using the same cutoff score (60%) as in the previous studies (Ito, 2001; Cahill, 2006), thereby helping to eliminate those who scored at and above 60% and discard learners' listening comprehension scores prior to the study. In this regard, this procedure enabled learners to have equivalent knowledge of the target structure prior to receiving any instructional treatment, hence successfully managing to assert any increase in the posttest scores 'to the instructional treatments not to the learners' prior knowledge' (Lee

and Benati, 2009, p. 144). The posttest measured the immediate effects of both audio and video modality for the two different proficiency levels.

Table 5. The Summary of the Timeline for the Research

	Experimental Group		Control Group		All Groups
	AHP; ALP	VHP; VLP	AHCG;ALCG	VHCG;VLCG	
Pretest (All Groups)	Instruction (March16-April13)	Instruction March16-April 13)	Audio through text book (March16-April 13)	Video through textbook (March16-April 13)	Posttest (April 27)
Week 1 March 9	Week 2 Reflection 1	Week 2 Reflection 1	Week 2	Week 2	
	Week 3 Reflection 2	Week 3 Reflection 2	Week 3	Week 3	
	Week 4 Reflection 3	Week 4 Reflection 3	Week 4	Week 4	Interview
	Week 5 Reflection 4	Week 5 Reflection 4	Week 5	Week 5	
	Week 6 Reflection 5	Week 6 Reflection 5	Week 6	Week 6	
Week 7					Week 7

Each of the treatment groups had a minimum of 20 minutes for each instruction of each feature in their regular classes for five weeks. Throughout the instructional stage those in AHP+FRsI and ALP+RFsI received material packet CONSPERsent A; those in VLP+RFsI and VHP+RFsI groups material packet CONSPERsent B. In other words, while learners in CONSPERsentA were exposed to sample utterances in five target reduced forms, learners in CONSPERsent B group were exposed to the video while listening to the same target forms. Following each instructional session, participants were requested to write their reports when they are distributed to them.

4.2. Pilot Study

The researcher piloted the instructional materials and data collection instruments to ensure the validity and reliability of the study and made the necessary adjustments before conducting the

main study. The results of piloting are given below. Unlike the main study which included four instructional groups (AHP+RFsI, ALP+RFsI, VHP+RFsI,and VLP+RFsI) as well as the four control groups (AHP-RFsI, ALP-RFsI, VHP-RFsI, VLp-RFsI), the piloting study involved only instructional groups as the control groups were already using CDs and DVDs as instructional materials.

4.2.1. Setting

The piloting took place at a preparatory school of a state university in Istanbul, Turkey, in the 2014-2015 academic year. It was the beginning of the spring semester when the piloting process was initiated and completed in the second week. Learners were following a main course book entitled "New Language Leader" by Lebeau, Rees, (2004) along with its supplementary materials. They were taking 20 English class hours and two hours of extra speaking courses a week at the time of the pilot study.

4.2.2. Participants

Total of forty EFL learners from elementary (20) and pre intermediate (20) level were randomly recruited for the pilot study. Also the learners were randomly assigned into two instructional modalities as AHP+RFsI, VHP+RFsI, ALP+RFsI and VLP+RFsI. All participants in the pilot were aged between 18 and19. Just over half of the sample (60.4%) was male; 40.6% female. Instruction for each group was administered in piloting separately.

4.2.3. Instruments

4.2.3.1. Instructional Materials

While twenty learners in AHP+RFsI and ALP+RFsI group received CONSPERsent A for audio instruction of reduced forms, the rest (VHP+RFsI and VLP+RFsI) received CONSPERsent B

for the video based instruction. The audio and video materials in four instructional groups started with explicit articulation information along with the sample sentences of the target reduced forms. Learners were reminded to pay attention to the audio or visual input delivered to them in a computer lab. While learners in audio groups were allowed to listen, the ones in video groups were allowed to watch the instructional material and both groups were delivered weekly assignment concerning the feature to be taught each week. When the instructional materials were delivered, time was taken to ensure that the sound quality of the recording and the speed of speech was appropriate for the listeners. Additionally, confirmation regarding the difficulty of sentence structure in audio or video input as well as average time to allocate for each reduced form instruction were provided in piloting. The piloting for each group took an hour and a half for each group.

Both instructional packets included the same activities: pre-, while-, and post-listening sections along with a short description and anticipated problems with the target feature. Instructional packets were devised according to the procedure used by Kissling (2012) in which she developed online video modules to teach pronunciation in Spanish to English speakers. That is, the researcher adapted the modules with the purpose of teaching reduced forms and developed both audio and the video version of the same material.

A syllabus of the instructional package was prepared following Hagen (2000) and Matsuzawa (2006). Arbaugh and Benbunan- Fich's (2006) Constructivist Teaching Approach Framework was employed as it relies on the assumption that "students construct their own knowledge independently by actively interacting with the subject matter and combining information from different sources" (p.438). Sentences incorporating the target features were compiled from several resources, such as Avery & Ehrlich (1992) and Kelly (2000) as well as the course book of the learners, Lebeau, Rees (2004) (New English File by Pearson).

4.2.3.2. Testing materials, Reliability and Validity of the Materials

Data collection instruments are composed of pretest, posttest, reflection notes, questionnaire and a semi-structured interview. RFs listening pretest and posttest were developed in three test formats: dictation, discrimination and multiple choice. Pretest and posttest were parallel both in content and format. Detailed descriptions of the three data collection instruments as well as the reliability and validity of the instruments are presented below.

4.2.3.3. Dictation task

After analyzing various dictation tasks mentioned in the literature, three steps were followed in developing the dictation task: first, a pool of 50 sentences were developed by the researcher. Secondly, following Matsuzawa's (2006) instrument, the researcher chose 20 sentences from the pool developed: four sentences representing each five target features to be tested to obtain students' comprehension scores on RFs in a sentential level. Voice recording of the selected sentences by a native speaker was carried out. Finally, prior to the administration of the task, the voice quality and the comprehension of the sentences were piloted with 40 volunteer language preparatory students at the university who were eliminated from the study later on.

The reliability for the dictation test was .76. Item difficulty was also checked using Kuder Richardson 20 formula to determine which sentences are possible to utilize and which ones should be used in pre-test and post-test and also which ones should be removed or fixed. The difficulty level of the sentences was in the range of .08 and .65, meaning that the sentences were in the medium difficulty level (Clark & Clark, 1977; Larson- Hall, 2009). Additionally, item discrimination was checked to determine the difference between high and low performers as %27 top performers and %27 bottom performers by creating total test score (15 points for this task) for each student. Based on Crocker and Algina (2008), item difficulty for each question was calculated for each high performer and low performer group by using the formula

that the number of the correct answers in each group was divided by the total number of the total test takers. Then the released number (top performers' yielded item difficulty point) is subtracted from the calculated bottom performers' yielded item point score. The numbers ranging from -1.0 to 1.0 is suggested to be written or discarded and an index of discrimination above .40 is an acceptable level of discrimination. In other words, the more the scores are dispersed in the range of .40 and 1.0, the better the items are discriminated. On the basis of item analysis results in the dictation test, 5 items were eliminated due to the fact that the score fell below the suggested range, which meant that students seemed to have difficulties in understanding those items. Therefore, the remaining 15 sentences were retained and used in the final form of the dictation task (see Appendix F).

To establish the content validity of the instruments (pretest, posttest and instructional materials), a panel of four native English experts as well as 5 Turkish instructors teaching listening and speaking course at various language schools were provided with a copy of teaching materials to be used in the treatment and with a copy of tests. Test items of the target RFs that did not achieve minimum agreement by the expert panel were either removed or revised and resubmitted to them for a final assessment. All the instructors agreed on the 15 items in the dictation and another 15 items in the discrimination task.

4.2.3.4. Discrimination task

Following Brown & Kondo-Brown's (2006) Cahill's (2006), Matsuzawa's (2006) and Roach's (2009) suggestions on preparing dictation tasks, sentences for each feature were chosen from the students' textbook "New English File, Pre intermediate" published by Pearson. The course book was chosen as a reference so that learners would not be cognitively overburdened by the task demands and rather would be able to focus mainly on listening comprehension during the test. All grammatical rules and vocabulary contained in the sentences appeared in the course

book for both low and high proficiency level learners. In this vein, the words and sentences containing the target features were chosen on the basis of two criteria: being included as a feature target in literature, and being present in students' main course book so that all learners would be equally familiar with the words and linguistic structure.

Initially, the pool of 50 sentences was developed, and content validity was enhanced by the total of nine experts as mentioned above. The panel of experts agreed on the 15 items in the discrimination task, representing 3 tokens for the five target RFs.

The sentences of the target features were recorded by two native speakers (a female and a male from the States) who have been working at a language school at another public university. Total of 15 sentences were piloted on 40 students. After the piloting, a female speaker was preferred by the learners, and the results verified that the test of the audio input could be comprehended by the listeners. The audio input produced had enough degree of reduction and could well represent the five features to be tested as contraction, assimilation, flap, elision and linking. The recordings were processed using the audio editing software Soundtrack Pro, at a 16-bit sampling rate of 48 KHz in a sound-proof booth.

To ensure reliability, Kuder Richardson 20 (KR- 20) a reliability study was performed. KR- 20 reliability co efficiency is used to evaluate the reliability of the test items in which the items are assessed dichotomously. The reliability for dictation test was computed using the KR-20 formula, which yielded the score of .88.

The test items are presented in Appendix E with blanks representing the target features bolded. The target features were not bolded in the list presented to participants.

4.2.3.5. Listening Comprehension Test

Thirty questions in a dialogue form along with questions in multiple-choice form from the TOEFL Practice test workbook (2003) were adopted for the listening comprehension test. In

each question there was a conversation that was followed by a comprehension question. Questions and conversation were listened only once. Students chose the best answer for each question and filled in the space that corresponded to the letter of the answer they had chosen. The reliability for the test computed through KR- 20 formula was .89

In brief, in order to find out how much consistency of the values remained within the tests, a KR- 20 analysis was conducted for the 60 items on the three assessment tools as a dictation, a discrimination task and a listening comprehension test, revealing high overall reliability indexes as .81 that exceeded the benchmark value of .70-.80 (Larson-Hall, 2009). A total of 60 items with a 0.81 overall reliability was used in this study to measure students' reduced form performance. On the basis of the KR-20 computations, it can be indicated that the test developed for the comprehension of RFs is reliable, in medium difficulty (See Table 6).

Table 6. Reliability of the Reduced Form Comprehension Test

Test	KR 20
Dictation	.76
Discrimination	.88
Listening Comprehension	.89
Total	.81

4.3. Main Study

A detailed explanation of the experiment is displayed in this section. The same experimental design along with pre and posttest measures was adopted as in the pilot study. The overview of the research design was provided above in detail.

4.3.1. Setting

The present study was conducted at the Preparatory School of Yıldız Technical University, in Istanbul at the beginning of Spring semester in 2014- 2015academic year. The prep school education takes place for two semesters (one year), aiming to teach English for general academic purposes. The learners at the prep school follow the course book "New English File" series and its supplementary materials by Pearson. Each of the learners has to take a language proficiency exam and Placement exams at the beginning of the semester and is placed into one of three levels: elementary, pre-intermediate, and intermediate. Learners at upper intermediate and advanced levels do not pursue their education in preparatory school; instead, they follow their own freshmen year program in their particular departments or faculties. There were over 130 English language teachers at the school in the specified semester. The number of learners in each class was around 28. Each class had one CD player and a loudspeaker, one overhead projector camera. The researcher carried out the study in a computer lab where there were 60 PCs along with a headset, and one projector camera. Learners at the prep school were having 25 hours of English class hour each week, generally taught by three teachers at the time of the study.

4.3.2. Participants

In order to define the participants' proficiency levels, an English language proficiency test was administered and delivered by the language school at the beginning of the semester. Of all the proficiency test takers (n=2424, 100 %) at the beginning of the fall semester, the results showed that the majority of the participants (n= 1200, 49, 5 %) had an elementary level of proficiency in English, while 768 (34%) were pre-intermediate and 456 were intermediate (18,8%). As suggested by Ito, (2007), it was both elementary and pre intermediate learners that were the target population for this study as those in intermediate levels had already some

knowledge about the RFs to be tested. In this regard, after the approval of the language school director was obtained, selection of elementary and pre intermediate students was as follows:

One thousand and two hundred elementary students were randomly distributed into forty classes of which ten classes were then randomly selected for the study additionally, 768 pre intermediate students were randomly distributed into thirty two classes of which ten classes were then randomly selected for the study and randomly assigned into

a) four instructional classes (AHP+RFsI, VHP+RFsI, ALP+RFsI, VLP+RFsI)
b) four control group class (AHP+RFsI, VHP+RFsI, ALP+RFsI, VLP+RFsI)

The initial sample consisted of 357 learners, four of whom did not consent to be involved into the study, and 10 did not answer all the questions given during the pre or posttest. Thus, a total of 343 participants, 181 of whom were male (74 %), 162 of whom female with an average of 19.41 years old (SD=1.36), who reportedly have normal hearing and vision were recruited for the investigation. All participants possessed Turkish as a first language and had a mean self-reported duration of English language study of 9.18 years (SD= 2.51). None of the participants' major is English. English courses at preparatory school are four skill classes as well as grammar. The participants were preparatory language school students from eighteen different classes at the Language School of Yıldız Technical University with a range of eight different majors. See Table 7 below for the detailed distribution of learners in each instructional and control group.

Table 7. The Detailed Distribution of Learners in each Group and Proficiency Levels

Classes	Instruction	N of sample	N of Total
Class B2	AHP+RFsI	9	
Class B4		22	
Class B22		20	51
Class B16	VHP+RFsI	18	
Class B14		13	
Class B13		22	53
Class C5	ALP+RFsI	13	
Class C14		20	
Class C20		20	53
Class C23	VLP+RFsI	19	
Class C35		15	
Class C39		19	53
Class B18	AHP-RFsI	22	
Class B14		12	34
Class B9	VHP-RFsI	22	
Class B29		10	33
Class C6	ALP-RFsI	25	
Class C8		8	32
Class C15	VLP-RFsI	19	
Class C11		13	32
Total		343	343

All participants were enrolled in consecutive five courses and took the pre-test and posttest at the computer lab of the university. Distribution of participants both in the treatment and control groups is presented in Table 8.

Table 8. Distribution of Participants both in the Treatment and Control Groups

Modality	Level	Treatment		Control		Total	
		N	%	N	%	N	%
Audio	High	51	24,05	34	26,56	85	25
Audio	Low	53	25	32	25	85	25
Video	High	54	25,47	33	25,78	87	25,58
Video	Low	54	25,47	29	22,65	83	24,41
Total		212	100	128	100	340	100

4.4.Educational Context

Both norm referenced and criterion referenced tests are incorporated in this public university. Students are usually informed of the number of the units in their course book that they follow during the course. The form of the questions is multiple choice, gap filling or short answers to the given questions. The interpretation of the result is pass/fail. The participants in this study, however, did not know the general content of the test as it could influence pre/post test results. What they knew was the type of the questions in each of three sections: identification, gap filling and multiple choice.

In a listening course, students are trained to be able to understand and answer the comprehension questions properly. To this end, there have been three parallel instructional mediums to reinforce students' listening comprehension at the preparatory school of the university: Podcasts, speaking clubs and the regular contact hours of the listening course that takes four hours a week.

Students listen to podcasts delivered on the website http://www.ybd.yildiz.edu.tr/sayfa/2/Y%C4%B1ld%C4%B1z-Technical-University-Podcasts/204 and http://www.ybd.yildiz.edu.tr/sayfa/2/Y%C4%B1ld%C4%B1z-Technical-University-Podcasts/204 that has been designed by the administrative office and voiced by native speakers of English who have been working at the university. The Podcasts are provided both in elementary and intermediate levels aiming to reinforce the highlighted vocabulary in each unit of the course book and for both elementary and intermediate proficiency levels. Additionally, both slow and fast format of the same listening texts are delivered in each unit of the podcasts. Each podcast takes 3 to 5 minutes to listen to and is spoken at a rate of 130 words per minute. Students could have the chance of listening to the same podcast again through an online access to the website if they wanted to practice further listening. There are no questions to be answered by the students while listening. In other words, students practice and refine their

speaking skill based on the topics given in each unit of the main course book, New Language Leader Elementary and Pre-Intermediate by Pearson. The books have additional DVDs in which listening exercises for each unit are delivered through videos.

Speaking clubs are also offered as a part of the listening and speaking component of the class in preparatory classes. Native speakers of English working at the Language school give an hour of weekly face-to-face speaking sessions apart from the regular listening courses. During the sessions, students are given some tasks aligned with the topics and the structures given in the units that they follow in their main course books. No exams are given during both podcasts or speaking clubs. Students also follow the listening section allocated in each unit of the course book.

As the main component of the course, a traditional face-to-face classroom is maintained. Ninety-minute listening classes are held for 15 weeks. Instructors are given a schedule to implement and cover the listening portion of the "New English File" textbook. They have also considerable materials of the course book such as CD and DVD to be covered on the basis of the pacing of the coverage. The listening or watching activities included materials developed by Pearson related to listening activities such as pronunciation, documentaries or movie dialogue clips. In order to ensure a similar learning experience across classes, all courses follow a department- approved syllabus and use the same course book. Classes meet once a week for a face-to-face course, with an emphasis on oral practice. Students' listening grade accounts for 20 % of the final grade.

4.5.Testing Materials and Instrumentation:

Researchers investigating connected speech features typically use dictation tasks (Matsuzawa 2006), discrimination tasks (Ito, 2006) as well as listening comprehension tests. The

experimental listening test consisted of three tasks: a dictation task, a discrimination task and a listening comprehension test the summary of which can be seen as in the following:

Table 9. Distribution of RFs for each Assessment Instrument

Tasks/Test	Type of Connected Speech Feature					Total
	Contraction	Assimilation	Flap	Elision	Linking	
Dictation	3	3	3	3	3	15
Discrimination	3	3	3	3	3	15
Listening Comprehension	9	4	3	5	9	30

The distribution of the number of the RF items in the pretest and posttest to be tested is: total of 15 items comprise the "*Contraction*", total of 10 items comprise the "*Assimilation*", total of 9 items comprise the "*Flap*", total of 11 items comprise the "*Elison*", and total of 15 items comprise the "*Linking*" for the comprehension of RFs in English. The highest possible score is 60. The current test, which underwent validity and reliability processes, can be used to determine the comprehension of RFs of language school preparatory level students in listening development.

The qualitative section of the data collection was provided through the reflection reports written by the participants.

4.5.1. Dictation Task

To date, a dictation test is the most widely used instrument to test and measure RFs. Therefore, participants were asked to complete a dictation to measure the comprehension of RFs. The dictation task developed was similar to those used in other studies to evaluate the comprehension of the five connected speech features (e.g., Brown& Hilferty, 1986a, 1986b; Kissling, 2012; Brown, 2005; Cahill, 2006; Matsuzawa, 2006; Wong et al. 2015).

The dictation task consisted of 15 sentences in which subjects were presented with an auditory stimulus along with a sheet of paper and asked to identify and fill in the blanks for each sentence. The blanks given in each sentence were representing a target reduced form. Each

target feature was evenly distributed across the sentences as three different sentences for contraction, assimilation, flap, elision and linking. Table 10 lists sample sentences of the connected speech features tested in the dictation task.

Table 10.Sample Sentences in Dictation Task

Feature	Sentence
Contraction	I wish I knew her problem before. I **(------)** my best to solve it. *(would've done)
Assimilation	When you were really hopeless, I **(--------)**! *(got you)
Flap	He couldn't succeed so he **(-------)**. *(needed a tutor)
Elision	He says today seems **(----------)** *(bright and beautiful)
Linking	Could you **(-------)** this sofa? I don't need it any more. *(take away)

The distribution of the target RF items in the dictation test are as follows: the items 1, 6 and 11 comprise the "*Contraction*", the items 2, 7 and 12 comprise the "*Assimilation*", the items 3, 8, and 13 comprise the "*Flap*", the items 4, 9 and 14 comprise the "*Elision*", the items 5, 10, and 15 comprise the "*Linking*" (See Table 11).

Table 11. Distribution of Target RFs in Dictation Task

Tasks/Test	Type of RFs					Total
	Contraction	Assimilation	Flap	Elision	Linking	
Dictation	1,6,11	2,7,12	3,8,13	4,9,14	5,10,15	15

In relation to the scoring procedures, following Henrichsen's (1984) and Matsuzawa's (2006) method of measurement, only exact spelling was counted correct even if the sound was seemingly understood. For example, the answer "'d done" instead of "would've done" in "I wish I knew her problem before. I'd done my best" was considered incorrect. This rule was to ensure that the participants had understood not only the sound of a connected speech feature but also correct comprehension of the utterance.

4.5.2. Discrimination Task

The discrimination task was an AX discrimination test similar to those used in other studies to evaluate the comprehension of relevant targeted contrasts (e.g., Ito, 2006; Kissling, 2012; Cahill, 2006).

The discrimination task was used to establish whether a difference in meaning exists between the two audio stimuli containing both reduced and unreduced forms of each targeted feature in 15 sentences as a whole. A response that is same or different for a reduced form than an unreduced form indicates an effect of comprehension of RFs. For example, a listener might understand clearly uttered items in the same way as the reduced items. Conversely, a listener might understand unreduced items in a different way than that of reduced forms, meaning that the presence of RFs has an impact on the comprehension of the sentences. The AX discrimination task paired target connected features with the presence and absence of the same target in sentences with the five RFs (Contraction, Assimilation, Flap, Elision, Linking). The stimuli consisted of sound recordings made by a female native speaker from the States who has been working at a language school at another public university. The recordings were made using the audio editing software Soundtrack Pro, at a 16-bit sampling rate of 48 KHz in a sound-proof booth.

The test items of target features included 3 items for each of the five targeted features. In other words, contraction was given in 3 different sentences along with the presence and absence of the feature. In this sense, the number of features was evenly distributed across the total of 15 sentences. The same procedure was followed for the rest of the target features. A pilot study showed that perceiving the distinction of connected speech features in the presence and absence of the targeted features was difficult for both low and high proficiency level learners. The number of items in this task was initially 20. However, five items were found to be quite easy for participants to distinguish in pilot testing. Thus, in total, the discrimination test included 15 items in which target features were contrasted with presence and absence of the same connected speech feature. During the pretest and posttest, participants were asked to tick on the spaces so that their knowledge of RFs could be assessed by checking the difference or similarity of items in given sentences. In other words, learners were asked whether the meaning was the same or different when they hear a sentence with both a reduced and an unreduced form. Table 12 lists the RF targets tested in the discrimination task.

Table 12. Reduced Form Targets Tested in Discrimination Task.

Feature	absence of the feature	presence of the feature
Contraction	This experience **is going to** be hard.	This experience'**s gonna** be hard.
Assimilation	This is the **kind you** are interested.	This is the **kind you** are interested.
Flap	Things will **settle** down.	Things will **settle** down.
Elision	I wan**t** him to study.	I wan**t** him to study
Linking	How's your mother coming along?	How's your mother **coming along?**

The whole list of the 15 item pairs that was included in the discrimination test is provided in Appendix E. All items, scrambled into different intra pair RF orders, were used for the pretest and posttest. While recording the stimuli, both the researcher and the native

speaker of English took great care that the only audible differences in the AX stimuli pairings were the target segments. The other parameters such as volume, pitch, duration, and length of sentences were kept as identical as possible between the presence and absence of the feature in the AX pairings.

The distribution of the target RF items in the discrimination test are:items 16, 21 and 26 comprise "*Contraction*", items 17, 22 and 27 comprise "*Assimilation*", items 18, 23 and 28 comprise "*Flap*", items 19, 24 and 29 comprise "*Elision*" and items 20, 25, and 30 comprise "*Linking*" (See Table 13).

Table 13.Tokens of Target RFs in Discrimination Task

Tasks/Test	Type of Connected Speech Feature					Total
	Contraction	Assimilation	Flap	Elision	Linking	
Discrimination	16,21,26	17,22,27	18,23,28	19,24,29	20,25,30	15

4.5.3. Listening Comprehension Test and Scoring Procedure

The listening comprehension test consisted of thirty short dialogues. There was a 10-second interval after each question so that students could mark their answers on the answer sheet. Each dialogue was followed by one question consisting of comprehension questions. Each listening dialogue was approximately 10 to 13 seconds long. Five native English instructors and 2 native Turkish instructors who teach English took the test before it was piloted with 10 students of preparatory students who were later on excluded from the study. In addition, the seven instructors were asked to identify the dialogues incorporating the target RFs. All of them distinguished connected speech type correctly. The pilot results from the preparatory class students indicated that the test was functioning appropriately. An example of the listening dialogue is shown below. All of the dialogues with questions are shown in Appendix G.

Tables 14, 15, 16, 17, 18 show the five RFs in a dialogue with an example question for each feature as “contraction, assimilation, flap, elision and linking” (CAFEL)

Table 14.An Example of Contraction Incorporated in Listening Comprehension Test

Connected Speech Feature	Short Dialogue and question sample
Contraction	(woman):Somebody’s been leaving this door unlocked. (man): Don’t look at me! (narrator):What does the man mean? ***a) He’s not the one to blame.** b) Somebody just left c) he has been looking for the key d) Somebody’s knocking at the door

Table 15. An Example of Assimilation Incorporated in the Listening Comprehension Test

Connected Speech Feature	Short Dialogue and question sample
Assimilation	(man): I brought back your astronomy book- I thought you might be able to use it on your project. Sorry I kept is so long. (woman): I was wondering where that book was! (narrator): What does the woman imply? a) She wanted the man to read the book. b) She no longer needed the book. ***c) She had been looking for the book.** d) She thought the man’s book was wonderful.

Table 16. An Example of Flap Incorporated in the Listening Comprehension Test

Connected Speech Feature	Short Dialogue and question sample
Flap	(woman): It's really cold in this apartment, can we turn up the heat? (man): No, my last fuel bill was so high, I had trouble paying it. Would you like a sweater? (narrator): Why does the man refuse the woman's request? a) He's already too hot. b) He hasn't received a fuel bill yet. ***c) he can't afford to turn the heat up.** d) He has no more sweaters.

Table 17. An Example of Elision Incorporated in Listening Comprehension Test

Connected Speech Feature	Short Dialogue and question sample
Elision	(woman):The radio says there may be snow today. You'd better grab your boots, just in case. (man):I was planning to do just that. (narrator):What will the man probably do? a) wipe the snow off his boots. b) turn on the radio c) unpack his suitcase ***d) take his boots with him.**

Table 18. An Example of Linking Incorporated in Listening Comprehension Test

Connected Speech Feature	Short Dialogue and question sample
Linking	(woman):Excuse me your car is blocking my driveway, and I need to go to the store. (man) Oh, I'll move it right away. (narrator) What will the man probably do? a) drive the woman to the store b) move the woman's car ***c) get this car out of the woman's way** d) park his car in the driveway

Note. * indicates correct answer.

Participants listened to a short dialogue that took between 10 to 13 seconds, and answered multiple-choice questions per dialogue. The listening items were allocated to measure overall listening. In order to grasp the meaning, students had to distinguish between targeted RFs incorporated in dialogues as well.

The distribution of the target RF items in the listening comprehension test are: the items 32,33,36,37,49,54,55,58,60 comprise the "*Contraction*", the items 40,42,48,57 comprise the "*Assimilation*", the items 39, 53, 50 and 56 comprise the "*Flap*", the items 34,38,51, 52 and 59 comprise the "*Elision*", the items 31, 35, 41, 43, 44, 45, 46 and 47 comprise the "*Linking*" (See Table 19)

Table 19.Tokens of Target RFs in Listening Comprehension Test

Tasks/Test	Type of Connected Speech Feature					Total
	Contraction	Assimilation	Flap	Elision	Linking	
Listening Comprehension	32,33,36,37, 49,54,55,58,60	40,42,48,57	39,53,56 50	34,38,51 52,59	31,35,41,43 44,45,46,47	30

4.5.4. Reflection Report & Interview

A reflection report elicited students' weekly understanding of the RFs delivered to them each week. A sheet of paper along with written questions was delivered to the students for each RFs and written reports were requested at the end of each session of the instruction. Following the instruction of each feature in each modality (audio versus video), students were asked to answer the four open-ended questions in order to get in-depth understanding on how learning of the targeted features is perceived on the part of the learners. Five students from the four instructional groups volunteered to write reflections, providing informed consent for the researcher to analyze their reflection reports. Questions to be answered in reflection reports for each week are displayed in Tables 20, 21, 22, 23, 24.

Table 20. Reflection Report Questions for Contraction

(REFLECTIONS - WEEK 1)

After practicing listening this week's portion of the CONSPERsent course, answer the following questions. This must be completed by Sunday night (11:59 P.M.).

1. How would you describe your experience of the listening practice on “contraction”?
2. Do you think your listening practice on contraction through the web improves your listening comprehension? If yes, can you give a specific example?
3. Did you have any challenges during your listening practice through the web? If yes, can you specify your answer?
4. Was there one contracted form in your listening practice that you had had difficulty before?

Table 21. Reflection Report Questions for Assimilation

(REFLECTIONS - WEEK 2)

After practicing listening this week's portion of the CONSPERsent course, answer the following questions. This must be completed by Sunday night (11:59 P.M.).

1. How would you describe your experience of the listening practice on “assimilation”?
2. Do you think your listening practice on assimilation through the web improves your listening comprehension? If yes, can you give a specific example?
3. Did you have any challenges during your listening practice through the web? If yes, can you specify your answer?
4. Was there one assimilated form in your listening practice that you had had difficulty before?

Table 22. Reflection Report Questions for Flap

(REFLECTIONS - WEEK 3)

After practicing listening this week's portion of the CONSPERsent course, answer the following questions. This must be completed by Sunday night (11:59 P.M.).

1. How would you describe your experience of the listening practice on “flapping”?
2. Do you think your listening practice on flapping through the web improves your listening comprehension? If yes, can you give a specific example?
3. Did you have any challenges during your listening practice through the web? If yes, can you specify your answer?
4. Was there one flapped form in your listening practice that you had had difficulty?

Table 23. Reflection Report Questions for Elision

(REFLECTIONS - WEEK 4)
After practicing listening this week's portion of the CONSPERsent course, answer the following questions. This must be completed by Sunday night (11:59 P.M.).
1. How would you describe your experience of the listening practice on “elision”? 2. Do you think your listening practice on elision through the web improves your listening comprehension? If yes, can you give a specific example? 3. Did you have any challenges during your listening practice through the web? If yes, can you specify your answer? 4. Was there one elided form in your listening practice that you had had difficulty?

Table 24. Reflection Report Questions for Linking

(REFLECTIONS - WEEK 5)
After practicing listening this week's portion of the CONSPERsent course, answer the following questions. This must be completed by Sunday night (11:59 P.M.).
1. How would you describe your experience of the listening practice on “linking”? 2. Do you think your listening practice on linking through the web improves your listening comprehension? If yes, can you give a specific example? 3. Did you have any challenges during your listening practice through the web? If yes, can you specify your answer? 4. Was there one linked form in your listening practice that you had had difficulty before?

Apart from the weekly reflection reports, the student interviews elicited students’ perceptions of the web-based RFsI for listening comprehension development. Interview questions were piloted and revised accordingly. The interviews were conducted by the researcher in either Turkish or English depending on the interviewees’ preference. Each student interview lasted around 6 minutes. The participants were given minimal guidance in their responses, with only follow-up questions being asked to elicit more in-depth responses and clarification questions being asked to confirm the intended meaning of the participants.

To gain detailed information from each participant, the researcher also conducted a semi-structured interview with 20 students (five from each treatment group) at the end of the administration of the posttest. Interviews can be defined as open ended questions and responses about people's opinions on a subject (Patton, 2002). In a semi-structured interview, the questions are prepared before the interview yet they can also be modified on the basis of the answers given. In this regard, the purpose of the interview was to elicit information pertaining students' reflections on the RFs instruction and the use of audio and video modality in the study. The main interview question was, *"What is your opinion about the RF instruction that you were delivered through the webpage during the five weeks?"*

4.6. Instructional Materials for the Experimental Group

A website for the purpose of this study was developed at http://kainegulozer.com/, and considered as a tutoring tool. The web page is located on an HTML site under which there are six main headings and 3 sub headings with a user-friendly interface. Two different sections were allocated for audio and video modality, under the heading of CONSPERsent A and CONSPERsent B. The former one, CONSPERsent A served for audio and the latter one served for the video modality to provide practice on RFs in sentential level. RFsI group (AHP+RFsI, ALP+RFsI, VHP+RFsI,VLP+RFsI) completed 6 web-based asynchronised modules focusing on: 1) an introduction to sound perception, 2) contraction, 3) assimilation, 4) flap, 5) elision, 6) linking. The listening practice exercises provided are not interactive synchronous in nature. All learners completed the introduction to sound perception first, and the number of sentences in each feature in 5 modules was counterbalanced. Instructional material packet was developed according to Mayer's (2009) principles of multimedia design. The design of the website consisted of three main parts as courses and weekly assignments. Another section served for the weekly assignments that students were asked to post listening activities for the following

week. The instructional material included the total 5 modules of web-based asynchronous activities allocated for the five RFs, focusing on an introduction to each RF as contraction, assimilation, flap, elision and assimilation. On the basis of the modality, (audio versus video) all learners completed listening or watching the modules. The modules were created by the researcher and by Dr. Anson Musselman at Yıldız Technical University and are free and partially open to the public. The modules presented the following information and activities, all of which are typical of instruction in a listening class and have empirical evidence supporting their use (Kissling, 2012): an explanation of "anticipated problem of perception" was written and it was translated into Turkish only for the elementary level of learners during the practice session , an explanation of how the feature to be produced was given through sample sentences; and dictation activities which required learners to write the missing words to grasp the target feature were also offered. After each of these sections of the module, there was a reflection writing section for both audio and video modality in treatment groups on how the instruction of that particular feature was helpful for the learners. Learners received feedback about which items they answered incorrectly, and they had to check the answer key before they could proceed to learn the next connected speech feature. Finally, each module contained listening activity that directed learners to listen to a native speaker uttering sentences that incorporated the target features and filling in the missing spaces while listening. Learners received no additional instruction other than their listening practice and dictation exercises. Appendices (U, W,X, Y, Z, AA, BB, CC, DD) contain the screen shots displaying all the information covered in one example module.

The instructor spent 20 or 30 minutes on each module as a guide during the practice period in a computer laboratory. A time limit of 25 minutes per module was suggested, but the students had a 10-minute additional time to practice listening to the exercises of the dictation for each module. The instructional time per feature was brief but on par with the

amount of time devoted to each feature in other language courses in similar studies (e.g. Matsuzawa, 2006). On average, the instruction exposed learners to (30) target RFs incorporating each target feature in sentences, none of which were contained in the dictation practice (pre/post listening) section.

Tables 25 and 26 present a side-by-side comparison of the number of tokens in each feature for both instructional groups in audio and video modality.

Table 25. Tokens of Target RFs in Experimental Groups via Audio Modality

	Audio Modality					
	Contraction	Assimilation	Flap	Elision	Linking	Total of 5 features
AHP	61	35	20	30	30	176
ALP	61	35	20	30	30	176

Table 26. Tokens of Target RFs in Experimental Groups via Video Modality

	Contraction	Assimilation	Flap	Elision	Linking	Total of 5 Features
VHP	61	35	20	30	30	176
VLP	61	35	20	30	30	176

4.7. Instructional Materials for the Control Group

Learners in this group included two sub groups as control group 1 and control group 2 serving the two modalities (audio and video).

Control group 1 (AHP-RFsI, ALP-RFsI,) completed listening to self-paced audio files through the CDs of the course book "New English File for the assigned units that exposed them to the target features in amounts roughly equivalent to the AHP+RFsI, and ALP+RFsI. Control groups received no explicit instruction in the target features. AHP-RFsI and ALP-RFsI

instruction consisted of audio vignettes featuring native speakers of English talking about variety of topics. They were instructed to compare their dictation with the official transcript, evaluate their dictation, and also repeat a particular sentence in the audio until their pronunciation was identical to the speaker's. The audios chosen for the study were appropriate for learners and were related to the current topics of study in the learners' courses.

Control group 2 (VHP-RFsI, VLP-RFsI) was exposed to the same content and procedure as those in group 1. However, the learners in this group watched self-paced video files through the DVDs of the course book "New English File".

On average, the instruction exposed the control groups minimally to 20 minutes for each consecutive course, which is the same amount of time to allocate for the experimental groups. However, learners in both experimental and control groups could click and listen to sentences as often as they liked.

The control group instructional materials included sub materials (CD for audio groups and DVD for video groups) of the course book "New English File". The listening vignettes were varied across the units of the book when the instruction was delivered so as to follow the parallel topics of the weekly syllabus. Thus, the control groups could not be strictly controlled as to contain the target features in exactly the same amount as the experimental groups. Table 27 presents the number of tokens of each feature included in both audio and video modality for the control groups.

Table 27.Tokens of Target RFs in Control Groups via Audio Modality

	Audio Modality					
	Contraction	Assimilation	Flap	Elision	Linking	Total of 5 features
AHCG	27	12	9	8	23	79
ALCG	27	12	9	8	23	79

Table 28. Tokens of Target RFs in Control Groups via Video Modality

	Contraction	Assimilation	Flap	Elision	Linking	Total of 5 Features
VHCG	27	12	9	8	23	79
VLCG	27	12	9	8	23	79

It was thought that the dictation exercises could be fairly compared to the instruction through CDs or DVDs for control groups in that both experimental and control groups were delivered the target features in roughly equal amounts, requiring that learners were exposed to listening practice with identical feedback conditions. Time allocated for tasks was also equivalent across experimental and control groups. The main difference was that the dictation exercises of the control groups (AHP-RFsI, ALP-RFsI; VHP-RFsI, VLP-RFsI) provided no explicit instruction in connected speech features. However, it must be noted that learners in the control groups were never told which features were the targets of the study, which may have constituted an important difference between the experimental and control groups. Also listening practice was different in that control groups practiced listening with extended sentences and the experimental group practiced with short sentences. Table 29 presents the summary of the nature of instruction for both experimental and control groups.

Table 29. Summary of the RFsI in Experimental and Control Groups

Ex. Group (Audio) AHP+RFsI & VHP+RFsI Conspersent A	Ex. Group (Video) ALP+RFsI & VLP+RFsI Conspersent B	Control Group 1 AHP-RFsI & ALP-RFsI CD	Control Group 2 VHP-RFsI &VLCP-RFsI DVD
*Explicit feature instruction *Instruction through the use of website 20 minutes per week (total 5 weeks)	*Explicit feature instruction *Instruction through the use of website 20 minutes per week (total 5 weeks)	*No explicit feature instruction *Instruction through submaterials of the coursebook "New English File" supplementary CD materials for 20 minutes per week (total 5 weeks)	*No explicit feature instruction *Instruction through the submaterials coursebook "New English File" supplementary DVD materials for 20 minutes per week (total 5 weeks)
*Activities Pre-listening While listening Post-listening	*Activities Pre-listening While listening Post-listening	*Activities Pre-listening While listening Post-listening	*Activities Pre-listening While listening Post-listening

4.8. Questionnaire

A background questionnaire asked all participants to report their listening comprehension practice experiences as well as basic demographic information. The questionnaire is presented in Appendix C. The questionnaire took approximately 20 minutes to administer for all participants.

4.9. Reduced Forms Test Administration Procedures

Participants were seated at individual PC computer stations in the computer lab of the university and they completed all tests and questionnaires. The RF test was made up of 3 sections: a) dictation task, b) discrimination task, c) listening comprehension test. The Instruction for each part of the test was written in English yet a verbal Turkish explanation for the instructions was also delivered by the researcher so that all participants could pursue the test regulations properly. The researcher used an overhead camera along with computer demonstration monitors

to give instructions before administering the test. Then each participant got his/her headset and filled in the spaces given to them for each sentence on their spreadsheet of paper. Due to the poor speed of typing on a keyboard, and the ease of writing on a sheet of paper reported by the students in piloting, the participants typed their answers on a separate spreadsheet given to them along with the sentences. The participants were allowed to listen to each input only once then they typed their answers to the given spaces on their spreadsheet. Students had 60 seconds for each question in the three types of assessment tasks to type their responses after listening to each input. All the tests took 45 minutes to conduct in one session.

After the pretest, the students in treatment groups (AHP+RFs, VHP+RFs, ALP+RFs, and VLP+RFs groups) received five class hours of instruction from the same teacher in the form of audio and video. All the experiments took place in learners' regular classes apart from the class hour. When the researcher was in the class to give instruction, another instructor, a native speaker of American English, also stayed in and used an observation sheet to control whether any bias to one of the instructions was raised (see Appendix O). The teacher also checked the time for the each web-based instructional activity, as well as the time for each instructional activity. Upon completion of the instructions, the groups received an immediate posttest.

4.10. Scoring Procedure

Each test had three types of tasks: dictation, discrimination and listening comprehension. Each of the dictation and discriminations tasks had fifteen target items involving the target connected speech features. The listening comprehension task had 30 questions involving fifteen target items. In total, there were 60 target items for all tasks. Because the items were definite, one item one point procedure was employed, which means that the highest score was 60 for the present study. Partially-correct status was not employed as the procedures suggested by

Matsuzawa (2006) and Ito (2006) were adopted in scoring. Apart from this, blank and incorrect responses were marked as zero.

4.11.Data Analysis

In this study, both quantitative and qualitative analyses techniques were used. The qualitative data were collected through interviews and reflection reports; and the quantitative data were collected through a discrimination task, a dictation task and a listening comprehension test.

SPSS package program (Version 15) was used to perform the quantitative portion of the analyses. Frequencies, means, standard deviations and percentages were used for descriptive statistics. A paired sample t-test was used to compare the means of significant differences between paired groups. Independent sample t-test results were used to analyze the difference between the experimental and control groups. A probability level of .05 was used to evaluate significance for all analyses.

In order to support the results obtained from the quantitative analyses, the data obtained from the students' reflection reports and the interview were analyzed by means of content analysis following Patton's (2002) evaluation methods. Written consents were obtained in advance of the self-reflection reports and face-to-face interviews with the four instructional group of learners. The interview data were transcribed verbatim in either English or Turkish by the researcher, and double-checked for accuracy by another expert in the field. As for the self –reflection reports, the data were categorized into organizational themes based on the questions provided in weekly reflection reports. The excerpts under each organizational theme were coded through content analysis. The literature review also supported the need for and applicability of this study. The following chapter presents the results of the reflection reports (see Appendix EE, FF, GG and HH).

In order to support the researcher's understanding of the students' perceptions regarding the RFs instruction, the study group of 20 students was asked an open-ended question: *What is your opinion about the RF instruction that you were delivered through the webpage during the five*

weeks? ”. The feedback provided by the participants was analyzed through categorical content analysis and the results were listed in the following chapter. The results from the categorical content analysis are given in Tables 52, 53, 54 and 55.

CHAPTER 5–ANALYSES AND RESULTS

This chapter presents the results of the analyses for the effects of reduced form instruction (RFsI) on the listening comprehension of the five reduced forms (RFs) namely, contraction, assimilation flap, elision and linking as measured by a dictation, a discrimination and a listening comprehension test in the pre and posttest.

In this study, both quantitative statistics and qualitative analyses were used. In the quantitative statistics both descriptive and inferential statistics were calculated. Descriptive analyses were conducted for the purpose of determining the frequencies in demographic and linguistic information in the questionnaire. SPSS (Statistical Package for Social Sciences, Version 15.0) was used. Kolmogorov Smirnov was conducted to ensure that there was normal distribution among the treatment groups and the control groups before the instruction. The analysis revealed no significant difference among the eight groups on listening comprehension of RFs as the value was found to be greater than .05 ($p>0.05$). In other words, normal distribution across the eight groups of test takers was confirmed. Therefore, it can be stated that the eight groups in the study started at the same level of knowledge of the target RFs before they received instruction, thereby leading to the assumption that any improvements in their performance were due to instructional treatment. Upon confirming the normal distribution across the eight groups, the data were ready to compute descriptive and inferential statistics to compare the effect of RFsI across the treatment groups. The analyses were conducted for all treatment groups on RF listening comprehension test.

For research question 1, results regarding the effect of RFsI were provided, comparing the difference between the scores of pretest and posttest across the treatment and the control groups. Whether there were any differences in audio in each group (high and low proficiency) and whether the two groups differed in their use of audio and video modality were analyzed by a two–way split plot design ANOVA with two grouping variables (AHP+RFsI and AHP-RFsI)

and modality (audio) and one within-subjects variable (RFs comprehension). Hence language proficiency (high proficiency and low proficiency) and modality (audio and video) were the independent variables with two levels, whereas the RF Comprehension test was the dependent variable with five levels measured on a dichotomous scale. In order to support the findings through inferential statistics, reflection reports were asked to the treatment group to find out the perceptions of the participants towards web-based RFsI.

For research question 2, the results regarding the difference between the posttest scores in RF listening comprehension of the two treatment groups (those who were delivered instruction through audio and those who were delivered instruction through video modality) were provided. Independent sample t-test results were computed and the results were supported through a content analysis of the interview and the reflection reports. As for the sub questions for research question 2, a two way ANOVA (2 x 5 design) was used to test the effect of two modalities (audio and video) on the comprehension of five dependent variables (the RFs - contraction, assimilation, flap, elision and linking). Initially, the Pearson correlation coefficient was computed in order to ascertain whether there is correlation among the five dependent variables. Results indicated that correlation among the dependent variables was significant ($p<0.05$) and positive.

For research question 3, the results regarding the difference between high proficiency and low proficiency groups in terms of the comprehension of RF listening comprehension after the treatment, dependent sample t-test results were performed. Additionally, content analysis of the interview regarding the question was submitted.

Finally, for the research question 4, the results regarding the students' perspectives on reduced forms instruction (RFsI) through web based learning were analyzed through content analysis.

The statistical analyses of each research question are given in detail in the following.

5.1. Results for Research Question 1

R.Q.1.*Is there any significant difference between experimental (+RFsI) and control (-RFsI) groups in terms of the comprehension of RFs after the treatment?*

The first research question was whether RF instruction helped students improve their listening comprehension with regard to previously specified RFs. The RF listening comprehension posttest scores of treatment (N=51) and control groups (N=34) were compared to determine whether RFsI influenced student performance in each proficiency levels of treatment and control groups on RFs listening comprehension tests (dictation, discrimination and listening comprehension). The highest score in dictation task is 15, discrimination task 15 and multiple choice 30, which makes 60 as the total score. A 2X2 repeated measures ANOVA was conducted to test whether the mean differences between the pretest and posttest results as well as the differences within each group with respect to the pretest and posttest on each proficiency level (AHP +RFsI, AHP-RFsI; VHP+RFsI,VHP-RFsI; ALP+RFsI, ALP-RFsI; VLP+RFsI, VLP-RFsI) were different.

Table 30 shows the means and the standard deviations for the pretest and posttest of the AHP+RFsI and AHP-RFsI groups in the RF comprehension test. Note that the means indicate the ratio of the total number of participants in the specified groups to the total number of correct answers that participants could accomplish.

Table 30. Means and Standard Deviations for Pretest and Posttest Results of the AHP+RFsI and AHP-RFsI Groups

Test type	Groups	N	M	S
	AHP+RFsI	51	12.52	3.73
Pre total	AHP-RFsI	34	14.20	3.07
	Total	85	13.20	3.56
	AHP+RFsI	51	22.78	5.61
Post total	AHP-RFsI	34	15.09	7.69
	Total	85	19.71	7.50

As the table indicates, the AHP+RFsI group (M=22.78, SD=5.61) had a higher mean for RFs comprehension in posttest than that of the control groups (AHP-RFsI), (M=15.09, SD=7.69), thus the common sense notion that whether RFsI helps students improve their listening performance of RFs appears to be supported.

Prior to performing the two way ANOVA analyses of variance tests, the sample data were checked for the assumptions of ANOVA. Descriptive statistics indicated that variables were normally distributed. In order to examine the group means regarding pretest RFs comprehension test, a 2x2 repeated measure ANOVA was conducted. Table 31 shows the results of the ANOVA test.

As Table 31 indicates based on the ANOVA results, there was a significant instruction effect for the AHP+RFsI group and pretest posttest (2X2) RFs Comprehension Test F (1-83) =32, 75, p= 0.00. The significant instruction effect indicates that the treatment groups improved the comprehension RFs when the pretest and posttest mean scores were compared in both AHP+RFsI and AHP-RFsI groups.

Table 31. Pretest and Posttest Results of the AHP+RFsI and AHP-RFsI Groups

Source	SS	Df	MS	F	p
Test type	369.60	1	369.60	13.53	.000
Error	2267.02	83	27.31		
(Pretest-Posttest)	1265.19	1	1265.19	46.24	.000
Pretest posttest x AHP+/-RFsI	**896.01**	**1**	**896.01**	**32.75**	**.000**
Error	2270.60	83	27.35		

*****p<0.05

As for the VHP+RFsI and VHP-RFsI groups, Table 32 shows the means and the standard deviations for the pre-test and post-test of the VHP+RFsI and VHP-RFsI groups in the RF comprehension test. It should be noted that the means indicate the ratio of the total

number of participants in the specified groups to the total number of correct answers that participants could accomplish.

Table 32. Means and Standard Deviations for pretest and posttest results of the VHP+RFsI and VHP-RFsI Groups

Testtype		N	M	S
Pretotal	VHP+RFsI	54	13.07	3.44
	VHP-RFsI	33	15.63	3.27
	Total	87	14.04	3.58
Posttotal	VHP+RFsI	54	21.28	7.22
	VHP-RFsI	33	14.82	9.30
	Total	87	18.83	8.62

As seen in Table 32, the treatment group (VHP+RFsI), (M=21.28, SD=7.22) had a higher mean for RF comprehension in posttest than that of the control groups (VHP-RFsI), (M=14.82, SD=9.30), which means that whether RFsI helps students improve their listening performance of RFs appears to be supported.

Table 33. Pretest and Posttest results of the VHP+RFsI and VHP-RFsI groups

Source	**SS**	**Df**	**MS**	**F**	**p**
Testtype	155.55	1	155.55	4.28	.042
Error	3089.24	85	36.34		
Test (PretestPosttest)	558.62	1	558.62	13.87	.000
VHP+/-RFsI x RFs Test	**833.59**	**1**	**833.59**	**20.70**	**.000**
Error	342.83	85	40.25		

*****p<0.05

The ANOVA results revealed, a significant instruction effect for the VHP+RFsI group and pre-test post-test RF Comprehension Test F (1-85) =20.707, p= 0.00. The significant instruction effect indicates that the treatment groups who were delivered through web-based RFsI improved the comprehension of RFs when the pretest and posttest gain scores were compared in both VHP+RFsI and VHP-RFsI groups.

As for the ALP+RFsI and ALP-RFsI groups, the treatment group (ALP+RFsI), (M=14.72, SD=5.93) had a higher gain scores in RF comprehension of the posttest than that of the control groups (ALP-RFsI), (M=7.75, SD=6.15), which means that web based RFsI helps students improve their listening performance of RFs (See Table 34)

Table 34. Means and Standard Deviations for pretest and posttest results of the ALP+RFsI and ALP-RFsI Groups

Testtype		N	M	S
Pretotal	ALP+RFsI	53	13.09	4.16
	ALP-RFsI	32	16.15	3.29
	Total	85	14.24	4.11
Posttotal	ALP+RFsI	53	14.72	5.93
	ALP-RFsI	32	7.75	6.15
	Total	85	12.09	6.87

Table 35. Pretest and Posttest results of the ALP+RFsI and ALP-RFsI groups

Source	**SS**	**Df**	**MS**	**F**	**p**
Testtype	152.13	1	152.13	5.43	.022
Error	2324.41	83	28.00		
Test (Pretest-Posttest)	459.09	1	459.09	19.87	.000
ALP+/-RFsIxTest	**1003.42**	**1**	**1003.42**	**43.44**	**.000**
Error	1917.08	83	23.09		

*****$p<0.05$

The ANOVA results revealed a significant instruction effect for the ALP+RFsI group, pre-test post-test RF Comprehension Test F(1-83)=43.44, p= 0.00. The significant instruction effect indicates that the treatment groups who were delivered through web based RFsI improved the comprehension of RFs when the pretest and posttest mean scores were compared in both ALP+RFsI and ALP-RFsI groups.

As for the VLP+RFsI and VLP-RFsI groups, the treatment group, VLP+RFsI, (M=14.30, SD=6.81) had a higher mean for RF comprehension in the posttest than that of the control group,

VLP-RFsI, (M=7.38, SD=4.41), thus the common sense notion that RFsI helps students improve their listening performance of RFs appears to be supported (See Table 36).

Table 36. Means and Standard Deviations for pretest and posttest results of the VLP+RFsI and VLP-RFsI Groups

Testtype		N	M	S
Pretotal	VLP+RFsI	53	13.11	3.67
	VLP-RFsI	29	15.44	3.31
	Total	82	13.93	3.70
Postotal	VLP+RFsI	53	14.30	6.81
	VLP-RFsI	29	7.38	4.41
	Total	82	11.85	6.90

Table 37. Pretest and Posttest results of the VLP+RFsI and VLP-RFsI groups

Source	**SS**	**Df**	**MS**	**F**	**p**
Testtype	197.23	1	197.23	7.51	.008
Error	2098.50	80	26.23		
Test(Pretest-Posttest)	443.65	1	443.65	18.96	.000
VLP+/-RFsI X Test	**803.21**	**1**	**803.21**	**34.32**	**.000**
Error	1871.98	80	23.40		

The ANOVA results revealed a significant instruction effect for VLP+RFsI group, pre-test, post-test RF Comprehension Test F(1-80)=34.32, p= 0.00. The significant instruction effect indicates that the treatment groups improved the comprehension RFs when the pretest and posttest mean scores were compared in both VLP+RFsI and VLP-RFsI groups.

As for the results of the sub-research questions, an independent samples t-test was carried out to determine whether students' scores of the comprehension of RFs changed in treatment and control groups. In this regard, each proficiency level of treatment and control groups was compared to identify the likely difference between the groups. The sub questions and the results for each group are as in the following:

a) Is there any significant difference between the AHP+RFsI group and the AHP-RFsI group in terms of the comprehension of RFs, namely contraction, assimilation, flap, elision and linking?

The results in Table 38 revealed that the AHP+RFsI group had statistically higher performance (M= 6.74), (M=5.23), (M=3.72), (M=4.82), (6.33) at the end of the RFs instruction web based program compared to the AHP-RFsI groups (M=5.38), (M=3,64), (M=2.97), (M=3.75), (M=4.64) in five forms of the RFs (t (83)=2.61, P =.01), (t (83)=4.91, P =.00), (t (83)=2.47, P =.01), (t (83)=1.86, P =.04), (t (83)=3.18, P =.02). In other words, there was a significant difference between the AHP+RFsI group and the AHP-RFsI group in terms of the comprehension of each RFs, namely contraction, assimilation, flap, elision and linking.

Table 38. Independent Sample T-Test Results for AHP+RFsI and AHP-RFsI groups according to each RF.

Groups	RFs	N	M	SD	Df	t	p
AHP+RFsI	Contraction	51	6.74	2.45		2.61	.01
AHP-RFsI		34	5.38	2.18			
AHP+RFsI	Assimilation	51	5.23	1.50		4.91	.00
AHP-RFsI		34	3.64	1.39			
AHP+RFsI	Flap	51	3.72	1.28	83	2.47	.01
AHP-RFsI		34	2.97	1.50			
AHP+RFsI	Ellision	51	4.82	1.51		1.86	.04
AHP-RFsI		34	3.75	2.12			
AHP+RFsI	Linking	51	6.33	2.46		3.18	.02
AHP-RFsI		34	4.64	2.28			

* P <.05

b) Is there any significant difference between VHP+RFsI and VHP-RFsI groups in terms of the comprehension of RFs?

The results in Table 39 reveal that the VHP+RFsI group had a statistically higher performance (M= 6.22), (M=4.74), (M=3.66), (M=4.25), (5.96) at the end of the RF instruction web based

program compared to the VHP-RFsI groups (M=5.04), (M=3,57), (M=3.42), (M=4.75) in the four forms of the RFs (t (83)=1.14, P =.03), (t (83)=3.13, P =.00), (t (83)=2.05, P =.04), (t (83)=2.16, P =03). In other words, there was a significant difference between the AHP+RFsI group and the AHP-RFsI group in terms of the comprehension of the RFs of contraction, assimilation, elision and linking. However, there was no significant difference between the treatment and control groups in relation to the feature of "flap", (t (83) = .66, P =.05).

Table 39. Independent Sample T-Test Results for VHP+RFsI and VHP-RFsI groups according to each RF.

Groups	RFs	N	M	SD	df	t	p
VHP+RFsI	Contraction	54	6.22	2.79		1.14	.03
VHP-RFsI		33	5.04	2.52			
VHP+RFSI	Assimilation	54	4.74	1.75		3.13	.00
VHP-RFsI		33	3.57	1.56	85		
VHP+RFsI	Flap	54	3.66	1.50		.66	.50
VHP-RFsI		33	3.45	1.34			
VHP+RFsI	Ellision	54	4.25	1.66		2.05	.04
VHP-RFsI		33	3.42	2.09			
VHP+RFsI	Linking	54	5.96	2.41		2.16	.03
VHP-RFsI		33	4.75	2.68			

* P <.05

c) Is there any significant difference between ALP+RFsI and ALP-RFsI groups in terms of the comprehension of RFs?

The results in Table 40 reveal that the ALP+RFsI group had statistically higher performance (M= 6.64), (M=3.94), (M=3.73), (4.90) at the end of the RFs instruction program (CONSPERsent) compared to that of AHP-RFsI groups (M=4.71), (M=2,93), (M=3.73), (M=4.90) in four of the RFs (t (83)=1.74, P =.02), (t (83)=2.47, P =.01), (t (83)=1.49, P =.04), (t (83)=2.36, P =.02). In other words, apart from the feature of "flap" there was a significant difference

between the AHP+RFsI group and the AHP-RFsI group in terms of the comprehension of each RFs, namely contraction, assimilation, elision and linking. Yet, there was no significant difference between the treatment and control groups in relation to the feature of "flap", (t (83) =.57, P =.56).

Table 40. Independent Sample T-Test Results for ALP+RFsI and ALP-RFsI groups according to each RF.

Groups	RFs	N	M	SD	Df	t	sig
ALP+RFsI	Contraction	53	6.64	2.70		1.74	.02
ALP-RFsI		32	4.71	2.09			
ALP+RFSI	Assimilation	53	3.94	1.57		2.47	.01
ALP-RFsI		32	2.93	2.16			
ALP+RFsI	Flap	53	2.98	1.59	83	.57	.56
ALP-RFsI		32	2.78	1.49			
ALP+RFsI	Ellision	53	3.73	2.73		1.49	.00
ALP-RFsI		32	3.05	1.74			
ALP+RFsI	Linking	53	4.90	1.93		2.36	.02
LP-RFsI		32	3.71	2.67			

* P <.05

d) Is there any significant difference between VLP+RFsI and VLP-RFsI groups in terms of the comprehension of RFs?

The results in Table 41 revealed that the VLP+RFsI group had a statistically higher performance (M= 4.96), (M=3.85), (M=3.54), (4.48) at the end of the RFsI when the scores were compared to that of VLP-RFsI groups (M=4.07), (M=2,30), (M=2.33), (M=3.16) fo each RF (t (83)=.53, P =.03), (t (83)=.07, P =.02), (t (83)=.85, P =.02), (t (83)=.51, P =.01). In other words, apart from the feature of "flap" there was a significant difference between the AHP+RFsI group and the AHP-RFsI group in terms of the comprehension of each RFs, namely contraction, assimilation, elision and linking. Yet, there was no significant difference between the treatment and control groups in relation to the feature of "flap", (t (83) =.67, P =.50).

Table 41 Independent Sample T-Test Results for VLP+RFsI and VLP-RFsI groups according to each RF.

Groups	RFs	N	M	SD	Df	t	sig
VLP+RFsI	Contraction	54	4.96	2.15		.53	.03
VLP-RFsI		31	4.07	1.71			
VLP+RFsI	Assimilation	54	3.85	1.90		.07	.02
VLP-RFsI		31	2.30	2.13			
VLP+RFsI	Flap	54	3.85	1.76	83	.67	.50
VLP-RFsI		31	3.55	1.16			
VLP+RFsI	Ellision	54	3.54	1.64		.85	.02
VLP-RFsI		31	2.33	1.43			
VLP+RFsI	Linking	54	4.48	2.27		.51	.01
VLP-RFsI		31	3.16	2.01			

* P <.05

5.2. Results for Research Question 2

R.Q.2. *Is there any difference between the students who learn RFs through audio modality (AHP+RFsI, VHP+RFsI) and the students who learn through video modality (ALP+RFsI VLP+RFsI?*

An independent sample t-test was carried out to find out whether there was a significant difference between the posttest scores of the students who learn RFs through audio modality and those learn RFs through video modality. The descriptive statistics for audio and video modality are displayed in Table 42. The table indicates that the mean scores of the participants in AHP+RFsI, ALP+RFsI groups (M = 5.74, SD =2.44) in contraction, (M = 4.08, SD =1.83) in assimilation, (M = 3.16, SD =1.50) in flap, (M = 4.02, SD =1.84) in elision, (M = 5.05, SD =2.47) in linking were approximately close to the scores of the video groups VHP+RFsI VLP+RFsI as (M = 5.45, SD =2.43) in contraction, (M = 3.97, SD =1.90) in assimilation, (M = 3.25, SD =1.53) in flap, (M = 3.73, SD =1.74) in elision, (M = 5.01, SD =2.40) in linking

Table 42. Means and Standard Deviations for RF Comprehension in Audio and Video Modality.

	Types of RFs									
	Contraction		Assimilation		Flap		Elision		Linking	
Modality	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Audio	5.74	2.44	4.08	1.83	3.16	1.50	4.02	1.84	5.05	2.47
Video	5.45	2.43	3.97	1.90	3.25	1.53	3.73	1.74	5.01	2.40

Note: N= Audio 170, N= Video 169

Whether there were any significant differences between audio and video group with regard to the comprehension of each type of RFs were analyzed by a two-way ANOVA (2x5 design) with two grouping variables (audio and video modality) and five within-subjects variables (five reduced forms as contraction, assimilation, flap, elision, and linking). Hence, modality was the independent variable in two forms, whereas the five features of the RFs was the dependent variable with five levels measured on a dichotomous form. Before performing a two way ANOVA, correlation coefficients were computed, the results of which can be seen in the following table 43.

Table 43. Results of Correlation Computation of the RFs.

RFs		Construction	Assimilation	flap	elision	linking
	Pearson Correlation	1	,400**	,300**	,424**	,624**
Contraction	Sig. (2-tailed)		,000	,000	,000	,000
	N	343	343	343	343	343
	Pearson Correlation	,400**	1	,253**	,285**	,475**
Assimilation	Sig. (2-tailed)	,000		,000	,000	,000
	N	343	343	343	343	343
	Pearson Correlation	,300**	,253**	1	,155**	,240**
Flap	Sig. (2-tailed)	,000	,000		,004	,000
	N	343	343	343	343	343
	Pearson Correlation	,424**	,285**	,155**	1	,423**
Elision	Sig. (2-tailed)	,000	,000	,004		,000
	N	343	343	343	343	343
	Pearson Correlation	,624**	,475**	,240**	,423**	1
Linking	Sig. (2-tailed)	,000	,000	,000	,000	
	N	343	343	343	343	343

**. Correlation is significant at the 0.01 level (2-tailed).

Table 44. Comparison of the scores between AHP +RFsI and VHP +RFsI Groups in terms of each RF.

Groups	RFs	N	M	SD	Df	t	P
AHP+RFs	Contraction	51	6.74	2.45		2.61	.01
VHP+RFs		54	6.22	2.79		1.14	.03
AHP+RFs	Assimilation	51	5.23	1.50		4.91	.00
VHP+RFs		54	4.74	1.75		3.13	.00
AHP+RFs	Flap	51	3.72	1.28	85	2.47	.01
VHP+RFs		54	3.66	1.50		.66	.05
AHP+RFs	Elision	51	4.82	1.51		1.86	.04
VHP+RFs		54	4.25.	2.66		2.05	.04
AHP+RFs	Linking	51	6.33	2.46		3.18	.02
VHP+RFs		54	5.96	2.41		2.16	.03

Table 45. Comparison of the scores between ALP +RFsI and VLP +RFsI Groups in terms of each RF.

Groups	RFs	N	M	SD	Df	t	P
ALP+RFs	Contraction	53	6.64	2.70		1.74	.02
VLP+RFs		54	4.96	2.15		.53	.03
ALP+RFs	Assimilation	53	3.94	1.57		2.47	.01
VLP+RFs		54	3.85	1.90		.07	.02
ALP+RFs	Flap	53	2.98	1.59	83	.57	.56
VLP+RFs		54	3.85	1.76		.67	.50
ALP+RFs	Elision	53	3.73	2.73		1.49	.00
VLP+RFs		54	3.54.	1.64		.85	.02
ALP+RFs	Linking	53	4.90	1.93		2.36	.02
VLP+RFs		54	4.48	2.27		.51	.01

R.Q.2.1. Is there any significant difference between audio and video groups in terms of the comprehension of contraction?

The ANOVA results revealed a nonsignificant difference between the audio and video groups in terms of contraction F (1.337) =1.207, p>0.05.

R.Q.2.2. Is there any significant difference between audio and video groups in terms of the comprehension of assimilation?

The ANOVA results revealed a nonsignificant difference between the audio and video groups in terms of assimilation F(1.337)=.272, p>0.05.

R.Q.2.3 Is there any significant difference between audio and video groups in terms of the comprehension of flap?

The ANOVA results revealed a nonsignificant difference between the audio and video groups in terms of flap F (1.337) =.295, p>0.05.

R.Q.2.4. Is there any significant difference between audio and video groups in terms of the comprehension of elision?

The ANOVA results revealed a nonsignificant difference between the audio and video groups in terms of elision F(1.337)=2,119, p>0.05.

R.Q.2.5. Is there any significant difference between audio and video groups in terms of the comprehension of linking?

The ANOVA results revealed a nonsignificant difference between the audio and video groups in terms of linking F(1.337)=.031, p>0.05.

Table 46. ANOVA Summary Table for the Audio and Video Modality on each RF

RFs	Modality	N	M	SD	Df	F	p
	Audio	170	5.74	2.44	1.337		
Contraction	Video	169	5.45	2.43		.1,20	.273
	Total	339	5.60	2.44			
	Audio	170	4.08	1.83			
Assimilation	Video	169	3.97	1.90	1.337	.272	.602
	Total	339	4.02	1.86			
	Audio	170	3.16	1.50			
Flap	Video	169	3.25	1.53	1.337	.295	.587
	Total	339	3.20	1.51			
	Audio	170	4.02	1.84			
Elision	Video	169	3.73	1.74	1.337	2,11	.146
	Total	339	3.88	1.79			
	Audio	170	5.05	2.47			
Linking	Video	169	5.01	2.40	1.337	.031	.860
	Total	339	5.03	2.44			

In sum, it can be stated that there is no significant difference between the scores of the students who followed the RFsI through the audio modality and those who followed the instruction through the video modality (F(5.333)=816, p<0.05). These results suggest that the comprehension of RFs did not depend on the modality of instruction. Because there was no significant difference between the two modalities in relation to each RF, no further analysis was conducted.

5.3. Results for the Research Question 3

R.Q.3. *Is there any significant difference between the high proficiency experimental and groups control groups (AHP+RFsI vs AHP-FRsI, VHP+RFsI vs VHP-RFsI) and low proficiency level experimental and control groups (ALP+RFsI vs ALP-FRsI, VLP+RFsI vs VLP-RFsI) in terms of comprehension of RFs after instruction?*

Results of dependent sample t-test performed to find out the difference between pretest and posttest scores in experimental groups indicates that there is an increase in students' posttest scores in favor of posttest scores in the performance test of RF listening comprehension, $t(210) = -9.41$, ($p<0.05$). The mean score of the students after treatment obviously increased ($M= 31.75$), and the mean scores of those students before the treatment was 20.58. This result suggests that RFsI was beneficial for the students in relation to comprehension of RFs.

Tablo 47. Comparison of the Pretest and Posttest Scores in Experimental (+RFsI) Groups.

	Test Type	N	M	SD	df	t	p
Pair 1	Pre-dictation	212	3.62	1.56	211	-3.24	.001
	Post-dictation	212	6.84	3.20			
Pair 2	Pre-discrimin	211	4.01	1.72	210	-13.10	.000
	Post-discrimination	211	6.98	2.85			
Pair 3	Pre-multiplechoice	212	12.95	3.74	211	-4.61	.000
	Post-multiplechoice	212	17.73	6.79			
Pair 4	Pre-total	211	20.58	3.74	210	-9.41	.000
	Post-total	211	31.55	7.43			

R.Q.3.a) *Is there any significant difference between AHP+RFsI and AHP-RFsI in terms of posttest scores?*

In further analyses to check whether there is a difference between the posttest scores of each proficiency level students in +RFsI groups and the proficiency level students in -RFsI groups, a dependent sample t-test was conducted.

Table 48. Comparison of the scores between the students in AHP+RFsI and AHP-RFsI groups

Test Type	Group	N	M	Sd	Df	T	p
Postdictation	AHP+RFsI	51	4.49	2.04	83	3.93	.000
	AHP-RFsI	34	2.79	1.78			
Postdiscrimination	AHP+RFsI	51	8.29	2.00		4.30	.000
	AHP-RFsI	34	5.79	3.35		3.83	.000
Postmultiplechoice	AHP+RFsI	51	10.00	4.35		5.33	.000
	AHP-RFsI	34	6.50	3.76			
Posttotal	AHP+RFsI	51	22.78	5.61			
	AHP-RFsI	34	15.09	7.69			

The dependent samples t-test indicated that audio high proficiency level students (AHP+RFsI) increased their scores significantly after the instruction, $t(83) = 5.33$, ($p<0.05$). In brief, seen in Table 48, there is a significant difference between the posttest scores of the students who are in audio high proficiency level of the experimental group (AHP+RFsI) and the scores of the students who are audio high proficiency level in control group (AHP-RFsI) in the RFs comprehension test in favor of the treatment group ($p<0.05$). Mean score in AHP +RFsI group increased to be the mean score of 22.78 while it was 15.09 in the same group, AHP-RFsI, before the treatment.

R.Q.3.b) *Is there any significant difference between VHP+RFsI and VHP-RFsI in terms of posttest scores?*

Table 49. Comparison of the students' posttest scores between VHP+RFsI and VHP-RFsI

Testtype		N	M	SD	df	t	p
Postdictation	VHP+RFsI	54	4.00	2.12		3.89	.000
	VHP-RFsI	33	2.33	1.57			
Postdiscrimination	VHP+RFsI	54	7.98	2.42		1.90	.06
	VHP-RFsI	33	6.70	3.86	85		
Postmultiplechoice	VHP+RFsI	54	9.30	4.66		3.24	.002
	VHP-RFsI	33	5.79	5.23			
Posttotal	VHP+RFsI	54	21.28	7.22		3.62	.000
	VHP-RFsI	33	14.82	9.30			

As seen in Table 49, there is a significant difference between the posttest scores of the students who are video high proficiency level in the experimental group (VHP+RFsI) and the scores of the students who are video high proficiency level in the control group (VHP-RFsI) in the RF comprehension test (dictation and multiple choice) in favor of the treatment group $t(85) = 3.62$, $p<0.05$. However, it is also realized that there is no difference between the groups in discrimination task ($p>0.05$). The VHP+RFsI group students' average of total score is 21. 28 while the students who are in VHP-RFsI is 14.82.

R.Q.3.c). *Is there any significant difference between ALP+RFsI and ALP-RFsI in terms of posttest scores?*

Table 50. Comparison of the posttest scores between ALP+RFsI and ALP-RFsI groups

Testtype		N	M	Sd	df	t	p
Postdictation	ALP+RFsI	53	2.32	1.70			
	ALP-RFsI	32	1.50	1.52		2.23	.028
postdiscrimination	ALP+RFsI	53	5.81	2.71	83		
	ALP-RFsI	32	3.25	2.41		4.39	.000
postmultiplechoice	ALP+RFsI	53	6.58	4.29		4.19	.000
	ALP-RFsI	32	3.00	2.86			

Posttotal	ALP+RFsI	53	14.72	5.93		5.17	.000
	ALP-RFsI	32	7.75	6.15			

As seen in Table 49, there is a significant difference between the posttest scores of the students who are audio low proficiency level in the experimental group (ALP+RFsI) and the scores of the students who are audio low proficiency level in the control group (ALPP-RFsI) in the RF comprehension test and the total of test scores in favor of the treatment group, $t(83) = 5.17$, $p<0.05$. The students in ALP+RFsI got a total average score 14.72. However, the students in ALP-RFsI could get an average total score of 7.75 before the treatment

R.Q.3.d). Is there any significant difference between VLP+RFsI and VLP-RFsI in terms of posttest scores?

Table 51. Comparison of the posttest scores between VLP+RFsI and VLP-RFsI groups

Test type	Group	N	M	sd	df	t	p
Dictation	VLP+RFsI	54	2.09	1.95		2.81	.002
	VLP-RFsI	29	.97	1.23	81		
Discrimination	VLP+RFsI	54	5.89	3.21		2.72	.003
	VLP-RFsI	29	3.97	2.78			
Multiplechoice	VLP+RFsI	54	6.22	4.80		4.10	.000
	VLP-RFsI	29	2.45	1.59			
Total	VLP+RFsI	54	14.20	6.78		4.88	.000
	VLP-RFsI	29	7.38	4.41			

Table 51 reveal that the VLP+RFsI group (M=14.20) achieved higher scores in the RF comprehension test than the VLP-RFsI group (M=7.38). This indicates that there is a significant difference between the posttest scores of the students who are in low proficiency level through video of the treatment group (VLP+RFsI) and the scores of the students who are in low-proficiency level through video of the control group (VLPP-RFsI) in the RFs comprehension test and the total of test scores in favor of the treatment group, $t(81)= 4.88$, $p<0.05$. In other words, significant differences between the scores of the VLP+RFsI and VLP-RFsI indicate that RF instruction significantly increased students' RF comprehension scores.

R.Q.3.e) *Is there any significant difference between AHP+RFsI and VHP+RFsI groups in terms of posttest scores?*

Table 52. Comparison of the posttest scores between AHP+RFsI and VHP+RFsI groups

Testtype	Group	N	M	sd	Df	t	p
Postdictation	AHP+RFsI	51	4.49	2.04		1,20	.232
	VHP+RFsI	54	4.00	2.12			
Postdiscrimination	AHP+RFsI	51	8.29	2.00	103	.718	.474
	VHP+RFsI	54	7.98	2.42			
Postmultiplechoice	AHP+RFsI	51	10.00	4.35		.798	.427
	VHP+RFsI	54	9.30	4.66			
Posttotal	AHP+RFsI	51	22.78	5.61		1,18	.237
	VHP+RFsI	54	21.28	7.22			

As seen in Table 50, there is no significant difference between the posttest scores of the students who are in audio high proficiency level in the experimental group (AHP+RFsI) and the posttest scores of the students who are video high proficiency level in the experimental group (VHP+RFsI) in the performance test of the comprehension of RFs $t(103)= 1.18$, $p>0.05$. In other words, it can be stated that students in both groups performed almost equally. It is seen that the AHP+RFsI group achieved the average posttest score of 21.78. Similarly, the VHP+RFsI group could attain the average posttest score of 21. 28.

R. Q. 3.f) *Is there any significant difference between ALP+RFsI and VLP+RFsI groups in terms of posttest scores?*

Table 53. Comparison of the posttest scores between ALP+RFsI and VLP+RFsI groups

Testtype	Group	N	M	sd	df	t	p
Dictation	ALP+RFsI	53	2.32	1.70		.643	522
	VLP+RFsI	54	2.09	1.95			
Discrimination	ALP+RFsI	53	5.81	2.71	105	-,135	.893
	VLP+RFsI	54	5.89	3.21			
Multiplechoice	ALP+RFsI	53	6.58	4.29		.412	.681
	VLP+RFsI	54	6.22	4.80			
Total	ALP+RFsI	53	14.72	5.93		.416	.678
	VLP+RFsI	54	14.20	6.78			

As seen in Table 51, there is no significant difference between the posttest scores of the students who are in audio low proficiency level in experimental group (ALP+RFsI) and the posttest scores of the students who are video low proficiency level in experimental group (VLP+RFsI) in the performance test of the comprehension of RFs $t(105) = .41$, $p>0.05$. That is to say, both groups, ALP+RFsI and VLP+RFsI, performed in the RF comprehension test almost equally. It is seen that the ALP+RFsI group achieved the average posttest score of 14.72. SAimilarly, the VLP+RFsI group could attain the average posttest score of 14.20.

5.4. Results for the Research Question 4

R.Q.4. What are the students' perspectives on the instruction of RFs through web-based learning.

A qualitative investigation through the reflection reports and interviews provided in depth information pertaining the participants' perspectives on the instruction of RFs through web based learning and their experience of listening comprehension development through raising awareness on RFs.

All the participants in the four instructional groups – AHP+RFsI, VHP+RFsI, ALP+RFsI, VLP+RFsI- who were interviewed indicated that they enjoyed the experience of listening comprehension concerning the RFs: it was different from listening activities they did in class. More importantly, they reported the web-based RFs listening comprehension experience as "comprehensible", "easier", and "facilitating". Additionally, findings from

reflection reports also indicated parallel results of the students' views in the interview. A few examples of students' point of views on reflection reports are displayed in appendices EE, FF, GG, HH. Findings from student interview data and reflection report data for each instructional group – AHP+RFsI, VHP+RFsI, ALP+RFsI, VLP+RFsI- are given in the following:

Firstly, the results from interview and reflection report data from the AHP+RFsI group are described and participant 1 in AHP+RFsI group described her experience as follows:

You learn what part in a sentence you miss while listening. I can grasp the words much more easily than the times when I used to miss after getting the information about the feature. You have chance to listen to the parts you miss in a sentence over and over, which helps you understand the little parts you miss. In a regular class, we do not have this kind of chance. I have not had any difficulty while practicing the web- based listening activities on RFs. RFs were quite new entities for me to improve my listening comprehension. (see Appendix EE)

Participant 2 provided a similar response:

In a class setting, we listen to a text only once and most of the times I am not able to realize the whole sentence at all. There's always a part that I miss. Yet, there is always somebody who is better in listening and answering the questions so I just keep being silent and try to understand from my friends' answers. But here, I have the chance to keep the icon back and forth when I could not pick up the expression. I like following my own pacing while listening to a series of sentences. Once I clearly learn about what I've missed, I feel secure, which is the case here, in web based application. Thus, the emphasis in these comments was the usefulness of the RFsI as well as effectiveness of comprehension of the RFs on the part of the learners.

Participants were asked to write reflection reports on each type RFs they had learned. The majority of the AHP+RFsI group reported that having listening practice of the RFs –except for flap - were useful to improve their listening comprehension. This group stated that because they had already known about the feature "flap", it was much easier for them to pick up a flapped word while listening. In an attempt to answer the question whether they had any challenges during the listening practice through the web, they said that the instructions were clear enough and the instructor along with another teacher in the computer lab were helpful in each step of the course. Thus the reports suggest that AHP+RFsI learners perceived the RFsI to

be useful for the listening comprehension. The results from categorical content analyses of the interview and reflection reports for AHP+RFsI group is given in Table 52.

Table 54. AHP+RFsI group of students' Views and Reports on web-based RFsI

Groups	Code	Source	Sub codes	F	Source	F
AHP+RFsI	Perceptions of Ss on RFsI	INTERVIEW (n=20, Total f=20)	Useful, Facilitating Beneficial Effective	13	REFLECTIONS (n=5, Total f=20)	4
			Informative Comprehensive	3		1
			Important	1		
			Enjoyable	2		
			Different	1		

Secondly, the results from interview and reflection report data from the VHP+RFsI are described and participant 3 in VHP+RFsI group described her experience as follows:

You can watch the video and follow the sentences while listening. It is much easier to catch up with the way how the person utters certain parts of a sentence. In fact, I have learned a lot about the features as contraction, assimilation, elision and linking. For example, I did not know that native speakers were omitting the "t" sound while they were pronouncing the auxillary verb "wouldn't", "couldn't" in natural speech. I also remember giving mistaken answers to simple questions in the quiz just because I did not know the difference of pronunciation in contracted form of a natural speech. I have not had any problem practicing the exercises through the website. "would've" kind of contraction was the that I had not initially known (see Appendix GG).

Participant 4 in this group found the RFsI beneficial:

You may already know the meaning of a sentence when you read the sentence. However, it is almost impossible to catch up with the speed and the meaning while listening. Getting the

tips for each feature through the web based instruction was so practical and even kind of life saving for our listening comprehension. I wish you had taught us these features at the very beginning of the semester, which would have helped us in improving our speaking fluency as well. Thus, it seems that there was consensus on usefulness and the benefit of RFsI for both VHP+RFsI and AHP+RFsI groups.

Participants in the VHP+RFsI group were also asked to write reflection reports on each type RFs they had learned. The majority of the group reported that having listening practice of the RFs were useful to improve their listening comprehension. They added that having comprehensive information about the features would advance their real time comprehension of utterances and sentences. Because they had the notion that some sounds may change, some others may be omitted or linked to each other in this web-based RFsI program, the blur of the utterances dispersed and the chance of comprehension of a phrase, utterance or expression would be high on the part of the listener. Thus, the reflection reports of the VHP+RFsI group suggest that learners perceived the RFsI to be useful and illuminating for the listening comprehension. The results from categorical content analyses of the interview and reflection reports for the VHP+RFsI group is given in Table 53.

Table 55. VHP+RFsI group of students' Views and Reports on web-based RFsI

Groups	Code	Source	Sub codes	f	Source	f
VHP+RFsI	Perceptions of Ss on RFsI	INTERVIEW (n=20, Total f=20)	Useful, Illuminating Beneficial Effective	17	REFLECTIONS (n=, Total f=37)	11
			Informative Comprehensive	20		16
			Important	15		8
			Enjoyable	4		2
			Different	4		

Thirdly, the ALP+RFsI group's interview and reflection report data revealed the following results. Participant 5 in the ALP+RFsI group reported his experience as follows:

Initially, we had had a lot of listening classes, yet they were different in the several ways: First, we have rarely had sentential forms in a listening course, instead we were listening a whole text or dialogue then answering the comprehension questions in which I used to miss a lot of words and easily get blocked in the first few missing or the very beginning of the listening comprehension activity. But now, thanks to the web-based RFsI program, I know the reasons why I did miss the words. Secondly, I could realize that there have been several features employed in a sentence by a native speaker of English in real time speech. Some examples of features like contracted "would've" or flapped "water", assimilated in "did you" and linked "may I" even in a simple statement or utterance. Unless the statement is too advanced for me, I can clearly identify the features, which enables me further understand the subject matter. Thirdly, it facilitated me with autonomous and a sort of entertaining learning as I could follow my own pacing, giving pauses when I miss specific parts in audio.

Participant 6 in this group found the RFsI beneficial:

I used to think that speakers were just swallowing the words while speaking. I was dealing with vocabulary, the speed as well as the real time of fluent speech while listening to native speaker. Actually, what I could not understand was what unit of a sentence they were swallowing during the speech. I usually watch movies with subtitles and I had just bare information about the natural speech but thanks to the program I could clearly identify some types of utterances are representing certain type of pronunciation, which further helped me identifying the borderlines of words in a sentence. I feel more secure when I start listening on a sentential basis and realize what causes my misunderstanding or even missing the whole bunch of a phrase or a sentence. I got a real relief when I started catching up with the sentences in listening, which was a real problem beforehand. I did not suffer from any problems yet I just wanted to skip practicing flap as I already heard that sound change in most American movies (see Appendix FF).

Two other participants reported that they knew some samples from flap such as "letter", "literature" or "navigator" yet they did not know the other features especially contraction, assimilation, elision and linking.

Participant 7 stated that the easiest feature included the examples of "letter", "literature", navigator" as he had heard those examples on movies before. Nevertheless, the rest were all new for me.

Participant 8 reported that she could not believe what she saw when the sentence uttered was exactly different from what she could guess as it was contracted, elided or assimilated. She also added that of course, they should also know the sentence structure or a meaning of the word, yet learning the way how it was uttered in a natural speech helps us save time in understanding the subject matter.

The overall message from the ALP+RFsI group concerning their perspectives on RFsI was that they heavily favored the instruction as facilitating, and comprehensive. The feature of "flap" was the only one that had prior information in their personal listening practice.

As for the reflection report data in this group, participant 9 highlighted the importance of learning the features, stating that:

"this experience was like getting vitamin pills for me in the concept of listening comprehension cause I could consciously pick up the words while listening, at least I could draw a clear conclusion on the basis of what I have learned and what I should take care when I may have missed in certain units of a sentence. I should have more practice with other sample sentences though. I tried to do weekly assignments, yet they were composed of just seven sentences. I wish we had extra assignments as a free time activity. I believe that the more practice I have on the listening of these features, the more competent I will be in both listening and speaking. What is more, I really enjoy going back and forth with the mouse to catch up with the problematic unit of the chunk in a sentence thanks to the delivery of the information about the features".

Thus, the reflection reports of the ALP+RFsI group suggest that learners perceived the RFsI to be beneficial and practical for listening comprehension. The results from categorical content analyses of the interview and reflection reports for the ALP+RFsI group is given in Table 54.

Table 56. ALP+RFsI Group of Students' Views and Reports on web-based RFsI

Groups	Code	Source	Sub codes	F	Source	f
ALP+RFsI	Perceptions of Ss on RFsI	INTERVIEW (n=20, Total f=60)	Awesome Beneficial Practical	17	REFLECTIONS (n=5 Total f=30)	5
			Informative Comprehensive	20		5
			Essential	15		5
			Entertaining	4		3
			Different	4		3

Finally, the VLP+RFsI group's interview and reflection report data revealed the following results. Participant 10 in this group reported her experience as follows:

I was thinking that I was poor in listening comprehension due to the lack of structural knowledge in a sentence, yet I realized that I could understand the sentence when I read the uttered sentence so my problem was hindered in some features of natural speech. Because I had a chance to learn them through the video examples along with the PDF form of its parallel sentences, I could grasp the sentences more easily. This web-based listening experience was like opening the curtains in your ears and being able to see the beyond much more clearly. It helped me improve in my listening comprehension whatever I listen either on youtube or in the class. I think this should be one of the first steps to be taught in listening comprehension as I had a real difficulty of comprehension while listening to the text in the former semester. It could have been even more fun than the torture if we had had this type of listening exercise beforehand.

Participant 11 in this group found the RFsI beneficial in different ways:

You may watch a lot of movies or listen to popular TED talks, yet you may get only a few messages of the whole listening text without the knowledge of the features delivered in web based RFsI program. Watching American movies, I can now realize the light shed on us through the program. The instruction given to us on the basis of sentences fulfilled our gaps in particular units of a sentence or an utterance. Otherwise, I just used to ignore many parts in

listening, which caused me to misunderstand and simply get discouraged in many cases. In brief, rigorous practice for each feature fueled my listening comprehension.

As was the case for all other groups, participants in VLP+RFsI group were also asked to write reflection reports on each type RFs they had learned. Participant 12 had a clear view of RFsI as a beneficial resource, stating that neither listening exercise in any other resources such as listening books or internet provided this kind of sentential practice on RFs. He also stated that he was getting lost right after listening to a few sentences and he did not know that those features would have been one of the major entities that he should have learned to improve his listening comprehension. The forms "contraction" and "flap" might be an easy feature to pick up in listening yet the feature that a sound is deleted or words are linked together is almost impossible for me to get the real message in listening. Yet, I think I will be overcome this problem as I have a chance to watch the video in a sentential form and learn the notion of RFs. (see Appendix HH)

Participant 13 in this group underlined the importance of learning these features however he did not view of the benefit because he thought that they were not asked the listening questions through videos so it could be fun watching them but also waste of time to watch while we are expected to listen and answer the question in a real exam. Thus, the reflection reports of the VLP+RFsI group suggest that learners perceived the RFsI to be useful and important for the listening comprehension. Yet, the fact that the form of the delivery of a listening exam in a real class setting led some of the participants hesitation on the effectiveness of the video modality.

The results from categorical content analyses of the interview and reflection reports for the VLP+RFsI group is given in Table 55.

Table 57. VLP+RFsI group of students' Views and Reports on web-based RFsI

Groups	Code	Source	Sub codes	F	Source	F
VLP+RFsI	Perceptions of Ss on RFsI	INTERVIEW (n=20, total f=51)	Useful, Facilitating Beneficial Effective	12	REFLECTIONS (n=5, total f=30)	5
			Rigorous	20		4
			Essential	10		17
			Enjoyable	4		4
			Different	5		

In brief, findings from the content analysis of students' interviews and reflections revealed parallel results with the experimental study, specifically the results in relation to flapping was corroborated within the study, the results of which were also in line with Reinisch & Mitterer (2016). Although there were a few negative views, obviously, there was consensus on the facilitating and the effective factor of RFsI and across almost all features but "flap" for all instructional groups as AHP+RFsI, VHP+RFsI, ALP+RFsI, and VLP+RFsI groups

CHAPTER 6- DISCUSSION AND CONCLUSION

This chapter will discuss the results of the study in relation to previous studies, and, based on the results, reflect on the current state of web-based RFsI in second language listening comprehension. The current study has addressed web-based RFsI with its instructional issues and elicited the effects of RFsI on listening comprehension of the RFs in both experimental -AHP+RFsI, ALP+RFsI, VHP+RFsI and VLP+RFsI- groups and control -AHP-RFsI, ALP-RFsI, VHP-RFsI and VLP-RFsI groups. In the experiment conducted, both treatment and control groups were compared within and across the control groups. Additionally, based on the results of the qualitative portion of the study, discussion of the findings is presented.

The chapter begins with a discussion of the results of the study by giving the main and sub research questions. Furthermore, relevant corroboration to the results in literature is highlighted in order to support the results. The chapter concludes with some pedagogical implications for English language instructors, researchers and the experts in material development. Finally, it presents the limitations of the experiment and outlines some suggestions for future research.

The overall aim of this study was fourfold: First, I tried to determine the possible effectiveness of RFsI on the part of the learners in relation to the comprehension of RFs, namely contraction, assimilation, flap, elision and linking. Second, I wanted to identify whether the modality of instruction in RFs would have different effects on RF comprehension on the part of the participants. Third, I dealt with the comparison of the proficiency levels both in experimental and control groups concerning the effect of RFsI in their listening comprehension. Finally, the participants' perspectives on the instruction of RFs through web-based learning were elicited through content analysis.

6.1. Discussion for Research Question 1

Research Question 1 was whether there was a significant difference between experimental (+RFsI) and control (-RFsI) groups in terms of the comprehension of RFs after the treatment. Given the research findings in the literature, it was assumed that +RFsI group would perform better than –RFsI from posttest. There were four experimental and four control groups, Research Question 1 (a) asked whether RFsI to AHP+ RFsI group brings about beneficial effects on RFs listening comprehension tasks, involving the target RFs as contraction,

assimilation, flap, elision and linking. Research Question 1 (b, c and d) similarly asked whether RFsI to VHP+ RFsI, ALP+RFsI, and VLP+RFsI groups bring about beneficial effects on RFs listening comprehension tasks involving the target RFs (contraction, assimilation, flap, elision and linking).

The results suggest that web-based RFsI has a significant facilitative effect on listening comprehension development. First of all, posttest results showed that regardless of the proficiency levels, the four instructional groups (AHP+RFsI, VHP+RFsI, ALP+RFsI and VLP+RFsI) outperformed the control groups on three distinct RF comprehension tests, thus indicating that web-based RFs instruction is effective enough to make learners process and identify the target features of the RFs in sentential level of listening comprehension. In this regard, answers to the Research Question 1(a), (b), (c) and (d) are Yes; that is four queries of the study were affirmed. In other words, this study found greater performance of learners exposed to web-based explicit RFsI over those receiving no explicit instruction on the discrimination, dictation and listening comprehension tasks in the posttests. This result was expected as the learners in +RFsI group were able to process separate channels in processing visual and auditory information of RFs; engage in active learning by filtering, selecting, organizing and integrating information with prior knowledge based on two main assumptions of Mayer's (2001) Cognitive Theory of Multimedia Learning. For this reason, the higher improvement of the +RFsI group was due to the gaining of awareness to the RFs employed in the context of listening comprehension. Secondly, in terms of the five target RFs as contraction, assimilation, flap, elision and linking, apart from the feature "flap", all the features have facilitating effect on the development of listening comprehension. In this regard, the feature "flap" was the only feature having no effect on listening comprehension. In fact, the qualitative portion of the findings revealed that participants had initial familiarity of flap to a greater extent in listening comprehension compared to the comprehension of other RFs as contraction, assimilation, and elision, linking. As with the AHP+RFsI group's better improvement in flap, the participants in this group may be attributed to individual differences of the learners in this group in particular as this was the only group who stated in their reflections and interview that flap was a new phenomenon for them in picking up the vocabulary while listening. The distribution of the relevant cues in speech signal (Reinisch, & Mitterer, 2016), the notion of individual differences have been questioned in relation to L2 phonological acquisition and the mode of delivery in listening comprehension (Flege, 2003: Ockey, 2007), phonological awareness (Kennedy & Trofimovich, 2010), accent and intelligibility (Munro & Derwing,

2011) as well as short term memory (Munro, 2008), which could have been the case for the AHP+RFsI and VHP+RFsI group in this study. Apart from the distribution of the cues in speech and individual differences, stress placement in a word could have been an interacting factor that may have led the learners the ultimate attainment in perception of flap in their listening comprehension (Eddington & Elzinga 2008). On the other hand, students in other groups (ALP+RFsI , VLP+RFsI and VHP+RFsI) may have had different learning experiences that affected their comprehension skills differently. For example, a student who initially watches foreign language films may have developed a more subtle competence to discriminate auditory input than a student who listens to podcasts or iPods.

The significant effect of RFsI on listening comprehension is aligned with the findings of other studies that demonstrated beneficial effects of contraction, assimilation, elision and linking on listening comprehension (e.g., Brown & Hilferty, 1986b ;Brown & Hilferty, 2006; Toda, 2006; Matsuzawa, 2006; Ito, 2006; Rogerson, 2006; Yang et al., 2009; Khaghaninezhadi, & Jafarzadeh , 2014; Yang & Chang, 2013). In a seminal study, Brown and Hilferty (1986b) offered explicit instruction of RFs for four weeks and compared experimental group of learners' pretest – posttest scores with those from a control group that did not receive RFs instruction. Pretest and posttest included the Bowen Integrative Grammar Test, a multiple choice listening test, and a dictation test. The findings of the study indicated that the treatment group's posttest scores differed significantly across the tests compared to the control group's posttest scores. In a similar vein, Brown and Hilferty (2006) investigated the effectiveness of contraction for improving listening comprehension among the EFL students in China and found the beneficial effect on listening comprehension. On the other hand, introducing the contrastive analysis in relation RFs, Toda (2006) dealt with the instruction of contraction, elision, contraction and assimilation in Japanese focusing on the instruction of contrastive analyses in English and found the similarities in both languages in relation to the reduced forms. He suggested that it would be much more beneficial for L2 learners to present contrastive samples of RFs in their L1 so that they can perceive and internalize the RFs. Matsuzawa (2006) displayed a pedagogical perspective to RFs, offering explicit instruction of RFs as contraction, assimilation, flap, elision and linking and found that instruction had substantially beneficial aid on learners. However, because he did not have a control group in his study, he could only display the development of listening comprehension on the part of the Japanese learners. He also suggested that two features (contraction and elision) still require further attention.

The nonsignificant effect of flapping on listening comprehension contrasts with the finding of Matsuzawa's (2006) study that demonstrated beneficial effects of flapping on listening comprehension. The reasons can be attributed to factors such as the type of task used to measure listening comprehension, proficiency level of learners as well as the learners' L1. Another reason that could be attributed to the nonsignificant effect of flapping on the comprehension of RFs is that the flapping is a part of content word rather than that of a function word, which might have substantially enabled learners to grasp while listening. On the other hand, the finding on flapping concurs with other studies that found significant effect L1 background and the pre-existing lexicon in L2 (Idsardi & Sung, 2003). Moreover the frequency of the flapped word utilized in a conversational speech could be a predictive factor for learners' to discriminate the flapping easily (Hochmann, 2013). Bell, Brenier, Gregory, Girand & Jurafsky (2009) found that content- and function- word durations are affected differently by their frequency and predictability. Apparently, the nature of function words are known to be shorter, simpler and unstressed, yet the function words are longer and stressed. It should also be noted that it is function word that is most frequent in a language. (Gervain, Nespor, Mazuka, Horie & Mehler, 2008). Content words are likely to display more phonological cues in that they include only one separate word in a phrase or a sentence. To this end, Bell et al. (2009) and Hochmann (2013) suggest that content and function words are accessed differently in production, which may in turn lead learners to perceive the content word with ease.

6.2. Discussion for Research Question 2

Research Question 2 was whether there was a difference between the students who learn RFs through audio modality (AHP+RFsI, ALP+RFsI) and the students who learn through video modality (VHP+RFsI VLP+RFsI). The present study did not reveal any difference between the two modalities in relation to comprehension of RFs. Although there is not a study yet making such a comparison of audio and video modality in relation to RFsI in literature, it can be predicted that learners exposed to video modality (VLP+RFsI, VLP+RFsI) would perform better than those receiving instruction through audio modality (ALP+RFsI, AHP+RFsI). Many researchers accept the role of video in listening comprehension as it fosters L2 language and vocabulary acquisition (Danan, 1992; Meskill, 1996; Perez, Noortgate, & Desmet, 2013; Stewart & Pertusa, 2004; Winke, Gass & Sydorenko, 2010) and improves listening competence (Baltova, 1999, Brett, 1997; Terrel 1993) as video is presented through learners "contextually rich materials" (Baltova, 1999, p.34), keywords, or subtitles (Yang & Chang, 2013; Yang,

Chang, Lin & Shih, 2010). However, empirical evidence for these arguments is inconclusive due to the varieties in presenting the input in a video modality (e.g., Baltova, 1999; Danan, 2004). The findings of the present study revealed that there was no significant difference between the two modality in relation to the comprehension of RFs, which indicates that the experimental groups in both audio and video modality could manage the beneficial effect of the two modalities in relation to the comprehension of RFs and the development of listening comprehension.

The reason for the nonsignificant effect of the modality on listening comprehension of RFs could be attributed to the several factors such as the absence of the captions in video modality (Yang & Chang, 2013) distracting details in terms of cognitive load effect or working memory capacity (Kalyuga, Chandler & Sweller, 2004; Sanchez & Wiley, 2006) and some physical limitations related to the featured image of the speaker while speaking in the video.

Different results might have been yielded if the implementation of web-based video instruction modality had been delivered through the inclusion of a featured image such as the speaker's physical stance of the vocal track or captioned video during the articulation of the target features. This assertion is also based on the finding of some studies dealing with the video modality in relation to the instruction of RFs. Yang and Chang (2013) conducted a study pertaining the impact of captions in RFsI through videos on listening comprehension of the RFs as assimilation, elision and linking through the video clips. Three groups were exposed to three different type of modes through video –full captions, key – word only captions, and annotated key word captions in which there were additional symbols to the keyword captions so that the learners could identify the RFs saliently. The researchers found the beneficial effects of the modality with annotated keyword captions on listening comprehension compared to the modality with the presence of keyword and full text. In another study, the similar result is concurred as Perez, Noortgate and Desmet (2013), in their meta- analysis of the effectiveness of captioned video as L2 video with L2 captions, investigated the effect of two conditions as full caption vs no caption on L2 listening comprehension and vocabulary learning, and found that the full caption group outperformed the non-caption group in both listening comprehension and vocabulary acquisition.

In relation to distracting details in video modality, Harp and Mayer (1998) remark that the presence of video in a comprehension task may have a great deal of information yet it may also lead to a poorer performance in a comprehension task. This phenomenon is also proposed by Sanchez and Wiley (2006) as distraction and cognitive overload and Harp and Mayer (1998) as

activation of improper schemata. In a similar vein, Schroeders, Wilhelm and Bucholtz (2010), in their correlational account of comprehension of receptive skills in three types of modalities as viewing, listening and reading, argue that the relation between these three comprehension tasks was not higher than the correlation between listening comprehension and reading comprehension. The difference between the aural and visual form was the presence of a short video in visual modality. Yet, both forms were identical in the sense of the same flow and processing of information. Thus, the researchers assert that neither modality per se no information processing is likely to account for difference between reading comprehension and listening comprehension in the context of covariance. In this regard, the findings of the current study do not provide any evidence in favor of audio or video modality. Specifically, the participants who were exposed to audio modality (AHP+RFsI and ALP+RFsI) did not have significantly higher means than those who were exposed to video modality during the delivery of their listening comprehension RFsI. Several reasons may account for this circumstance. First, it is likely that the nonsignificant difference between the two medium in relation to the comprehension of RF may have been due to the fact that the video modality is designated for the purpose of instruction of the RFs, not for testing. Secondly, Audio modality may have been more effective in attention-focusing than that of the video modality. Additionally, distinctive feature in video modality to facilitate learning was not incorporated into the video although the flow and the content was identical to that of the audio modality. In this regard, web-based environment itself may be factor in failing to identify the effect of RFs on listening comprehension when the difference between the audio and video modality is focused. Furthermore, the novelty of the web-based instructional method might also be a challenge for the VHP+RFsI and VLP+RFsI groups. Given the relative novelty of web-based instruction, the students might not be accustomed to this new method of sentential listening with the samples of RFs. The nonsignificant difference between the two modalities can also be explained by CTML, which postulates that active meaningful learning can be enhanced through words and pictures rather than words or pictures alone (Mayer & Chandler, 2001; Mayer et al., 2001; Mayer & Moreno, 2002, 2003).

Bearing in mind that all aforementioned studies made comparisons regarding the learners' vocabulary learning or listening comprehension only in audio or video modality with the extension of each modality within itself, one can easily notice that this dissertation was among the first to have found the equal effect of RFsI on listening comprehension on the part of audio (AHP+RFsI, ALP+RFsI) and video groups with no captions (VHP+RFsI, VLP+RFsI). It did

find that when sentential level of audio input was delivered through web based instruction, learners perform equally well in RFs. This result showed that the modality of RFsI does not show a significant role in RF comprehension tasks and thus that identification of the lexical segmentation in RFs via non-captioned videos may not be possible for learners when listening to sentential level RFs.

6.3. Discussion for the Research Question 3

Research Question 3 asked whether there was a significant difference between the high proficiency level experimental groups and control groups (AHP+RFsI vs AHP-FRsI, VHP+RFsI vs VHP-RFsI) and low proficiency level experimental and control groups (ALP+RFsI vs ALP-FRsI, VLP+RFsI vs VLP-RFsI) in terms of comprehension of RFs after instruction. The results showed that the total of four instructional groups in low and high proficiency groups almost doubled their mean scores on the three tasks compared to the control group from pretest and posttest, which meant that instructional groups (AHP+RFsI, ALP+RFsI, VHP+RFsI and VLP+RFsI) enhanced the goal of listening comprehension when they were delivered RFs in syntactic forms through web-based RFsI.

In an attempt to categorize the groups with their counterparts as experimental and control groups, the following sub research questions were investigated:

Research Question 3 (a) asked whether there was a significant difference between AHP+RFsI and AHP-RFsI in terms of posttest scores. The Research Question 3 (b) asked whether there is a significant difference between VHP+RFsI and VHP-RFsI in terms of posttest scores. The Research Question 3 (c) asked whether there is a significant difference between ALP+RFsI and ALP-RFsI in terms of posttest scores. The Research Question 3 (d) asked whether there is a significant difference between VLP+RFsI and VLP-RFsI in terms of posttest scores. The remaining two sub Research Questions (e) asked whether there is a significant difference between AHP+RFsI and VHP+RFsI in terms of posttest scores, and (f) asked whether there is asignificant difference between ALP+RFsI and VLP+RFsI groups in terms of posttest scores.

On the three types of tasks (dictation task, discrimination task and listening comprehension test) Research Question 3 (a), (b), (c), (d) explored that the experimental groups in AHP+RFsI, ALP+RFsI, VHP+RFsI and VLP+RFsI groups scored higher than AHP-RFsI, ALP-RFsI, VHP-RFsI and VLP-RFsI, thus revealing that the superiority of instructional groups over control groups to help learners perceive and decode the RFs in units of phrases or in

sentential chunks. Moreover, the findings for the four sub questions indicate that both high proficiency and low proficiency level learners in instructional groups gained beneficial effect of RFsI in their listening comprehension. In other words, not only low proficiency level learners (ALP+RFsI, VLP+RFsI) gained substantial increase in their listening comprehension of RFs but also high proficiency learners (AHP+RFsI and VHP+RFsI) could perform higher scores in their listening comprehension of RFs. When this result is considered; that is, if AHP+RFsI, ALP+RFsI, VHP+RFsI and VLP+RFsI groups performed better than AHP-RFsI, ALP-RFsI, VHP-RFsI and VLP-RFsI, groups, then AHP+RFsI vs VHP+RFsI and ALP+RFsI vs VLP+RFsI group would probably perform identical to each other (RQ 3e, 3f), which was the case in this study. In other words, the instructional groups in the same proficiency level did not outperform one another; that is, both AHP+RFsI and VHP+RFsI groups improved their listening performance equally well in relation to raising the awareness of decoding RFs of listening comprehension tasks involving dictation, discrimination and listening comprehension of the target RFs (contraction, assimilation, flap, elision and linking).

Given the participants' language learning environment, such a finding is not surprising. The most likely way for Turkish preparatory year students to get in contact with the English language apart from lessons is to watch films or listen to MP3 players or iPods with no explicit instruction to focus on bottom up processing in relation to listening comprehension, which might prevent learners of both proficiency levels from fostering conscious awareness about the RFs or segmenting the speech (Goh, 2000; Sakai & Igashima, 2006).

The findings are congruent with a number of studies which confirmed the significant positive effect of RFsI on listening comprehension of RFs regardless of the fact that learners' proficiency level is either high or low (Brown & Hilferty, 2006; Henrichsen, 1984; Ito, 2006; Sakai & Igashima, 2006; Underwood & Wallace, 2012).

In a study by Sakai and Igashima (2006), the researchers investigated the effect of instruction of elision and linking in Japanese to advanced and intermediate level of learners with no control groups, they found out that both groups increased their awareness of RFs, which in turn fostered the listening comprehension development. On the other hand, in another study by Underwood and Wallace (2012), the researchers offered instruction for 12 weeks regarding elision and assimilation to low proficiency learners of English in Japanese EFL context for L2, and tested them across RFs listening comprehension through a dictation and the learners' production of RFs while speaking. The finding of their study indicated that low proficiency

level L2 learners improved their listening comprehension of RFs. What is more they got motivated to use RFs of English speech. The researchers underlined both on the importance of a systematic approach to L2 material design that reinforces the RFs syllabus and regular opportunities for the development of productive competence in RFs through conversations. In relation to different proficiency levels, Leveridge and Yang (2014) investigated learners' perception of captioning support for listening comprehension through self-reports for three proficiency levels of learners as low-intermediate, intermediate and high intermediate, giving the learners caption reliance test after giving a full captioned instruction, the researchers found that low-intermediate level of learners were perceived to rely on captions and that there was no relation between the caption reliance and the other two groups of language proficiencies. They remarked on the pedagogical implications and suggested that captioning support may not be inherently beneficial as reliance of captioning may be inaccurate. In the present study captioning for video configuration was not available. However, it seems on the basis of the empirical study (Leveridge & Yang, 2014), that the degree to which captioning fosters listening performance of learners may depend on the learner's level of language proficiency.

6.4. Discussion for Research Question 4

Research Question 4 elicited the instructional group of learners', namely AHP+RFsI, ALP+RFsI, VHP+RFsI and VLP+RFsI perspectives on the instruction of RFs through web-based learning. Illustration for each group will be given in the same order as seen above.

It is worth noting that a small number of participants volunteered for self-reflection reports and interviews related to the qualitative portion of participants' perception on RFsI. It is also possible that they may have overlooked some of their important thoughts in their reflection reports. Therefore findings reported for this research question and the ensuing discussion and conclusions apply solely to this sample and should not be generalized. Yet, what appears certain is that, based on student responses by AHP+RFsI group through reflection reports and interviews, RFsI contributed to their listening comprehension. Although some students found it easy to identify the feature of flapping in a speech, others reported this feature as novice and facilitating as the other RFs in listening comprehension. Apart from this feature, the students' opinion about the instruction of contraction, assimilation, flap, elision and linking was positive as they all reported that the instruction of these features was helpful in developing their listening comprehension.

As a means of study, a majority of students embraced the web-based instruction of RFsI as a comprehensive, important and alternative study option. Cross (2013) promoted an autonomous use of BBC's online podcasts outside the classroom to improve learners' listening ability, introducing meta-textual skills and activities for metacognitive instruction. Collecting data through journal entries and interviews, he indicates self-regulation (giving learners control over) of L2 listening materials using podcasts for listening comprehension purposes helps the learner develop his/her own independent listening outside the classroom, thus promoting comprehension. The findings of this study are in line with the studies conducted by Cross (2013) who indicated that self-regulation during listening affects the learners' listening comprehension and Lai, Yeung and Hu (2016) who dealt with student and teacher perceptions regarding the promotion of autonomous language learning through technology.

Secondly, the VHP+RFsI group stated that they were satisfied with the web-based RFsI, which fostered their listening comprehension development. However, some of them pointed out that this approach to instruction was different from watching films in the sense that they have listened to the sentences. It seems that learners expect watching movies or at least short clips as it is normal behavior for L2 learners. Therefore, they described watching sentential level of RFs did not fit in their usual expectations. As such, some of the students in this group had independently decided to watch the video in full to identify the RFs in the video content. However, the first three weeks of the application of this web-based RFs video listening was effective and enjoyable on the part of the learners. They reportedly, enjoyed listening yet the following four weeks, they stated that watching a video on the basis of sentences turned out to be facilitative for their listening comprehension yet not oriented for independent watching. Because they had to deal with bottom up (detailed listening) skills in listening through the sentential examples of RFs with a structured sequence of tasks, students may not have maintained interest and motivation. Obviously, learners in this group had different listening goals, level of interest and motivation towards improving listening comprehension through web-based designs. This perception may be attributed to the fact that learners are exposed to top down skills rather than that of bottom up skills in their listening comprehension courses and exams. Another factor could be the fact that learners are highly motivated by exam-oriented type of listening tasks rather than that of the detailed listening tasks that they may not be responsible in a real exam of a listening comprehension test. Considering the motivational point of view and level of interest, this study is consistent with Cross (2013) as he suggests that though learners have "different listening goals, time available, level of interest and motivation",

(p. 17) online tools do provide learners with useful options to meet the learners' specific developmental needs.

Thirdly, the ALP+RFsI group's comments showed that they believed the web-based RFsI course was helpful for their listening comprehension ability and the perception of RFs. When the students responded to the reflection reports, they reported all the RF listening tasks through web-based instruction in a positive manner. Words positively used to describe their perspectives of the RFsI included "awesome, very useful, beneficial, practical, informative, comprehensive and entertaining, essential". These utterances are at the core of the learners' reactions in their reflection papers. The learners had positive opinions about the RFsI's effect on their learning behavior as they stated that they could get feedback after learning each feature and that they could monitor their own progress. This finding echoes previous research with Mathews & O'Toole (2015) that provided learners with computer-mediated aural modality in which they incorporated a computer application to enhance leaners' word recognition for speech in L2 context. The learners in this modality could listen to input over and over again as termed by the researcher "self-determined exposure" (p.364). The researchers indicated significant differences between word recognition scores in pretest and posttest.

Finally, the VLP+RFsI group made positive remarks on their listening comprehension in this study, which indicates that they enjoyed having engaged in web-based RFs learning so they could better gauge their listening comprehension of the target RFs. In fact, they also informed that flap was already the feature they had been familiar with due to the frequent exposure to the feature through movies they had initially watched with subtitles. Apart from this perception, in overall, they reported that they optimized their listening comprehension experience through the web-based RFsI tool which was, reportedly, a valid study option based on the evidence from student interviews. Furthermore, the students reported that RFs, particularly, elision, assimilation and linking were the ones that met their needs not only in listening comprehension but also in speaking comprehension. As they stated, being able to see the speaker's articulation of contraction and see the exact units in the articulation of the RFs a number of times enabled them to foster their listening comprehension. The findings of the present study are consistent with Yang and Chang (2014) as their study found that annotated key word captions were beneficial for learners in the sense that it guided them to perceive RFs in listening comprehension texts.

In brief, concurring with current research findings on learners' perceptions of web-based RFsI, the participants in this study perceived the instruction as being a beneficial learning experience for developing their listening comprehension.

6.5. Implications

Findings of this study have pedagogical, methodological and technical implications for the provision of web-based instruction for L2 listening and the design of reduced form presentation.

Pedagogically, this study offers many ideas for language teachers. The first suggestion for language teachers may be that they could incorporate RFsI into their L2 listening classes for low proficiency and high proficiency learners through web-based audio or video modality as both equally help learners alter their default segmenting problems and gain more perceptive processing strategies pertaining to the RFs. Secondly, material developers, bearing in mind that RFsI has a beneficial effect on listening comprehension development and that there is "not enough material available on RFs" (Rogerson, 2006, p.94), could prepare materials representing extensive examples of RFs both in sentential and textual level. In this vein, Rogerson (2006) concerns about not only the need to develop more materials focusing on each features of RFs but also the need to raise teacher trainers' awareness on the instruction of RFs. However, among the five features as contraction, assimilation, flap, elision and linking, it can be suggested that teachers could employ less exposure on flapping than the other features as it seems flapping forms relatively less constraint on listening comprehension for Turkish EFL learners' context in particular. This was an unexpected discovery, given the challenging nature of flap (Riehl, 2003). This feeling about flapping was possibly a result of learners' initial exposure to the feature through movies or the salient phonological rule of this feature whereby the phoneme /t/ or /d/ becomes a flap before an unstressed vowel, as in the word "water".

Methodologically, this study utilized web-based RFsI instruction for the four instructional groups (AHP+RFsI, VHP+RFsI, ALP+RFsI and VLP+RFsI) in students' after-class hours, and employed a pen and paper assessment test. There were also additional four groups for control groups. Employing eight different group, though the sample size of English learners in our language school is quite high, might bear a disadvantage as the learners in this eight different group might have shared the information with their peers in other groups; instead sample size could be smaller or a computer based application could be designed and employed to collect data. Additionally, RFs in sentential level were the targets to attain listening comprehension; however, assessing learners' listening comprehension of RFs through spoken texts in a context might have given different results.

As for the design of RF presentation, a learner corpus of authentic speech could be a potential precursor to develop as a resource and rich examples of speech modifications can be presented through authentic speech. In the present study, all instructional and assessment materials were recorded in a controlled way such as recording in a sound proof room, controlling the rate of speech; however, the presentation of RFs both in instructional materials and assessment materials could have been elicited from an authentic spoken corpus and designed in a web-based platform for instructional as well as assessment purposes of the target RFs. In fact, when considered all spoken corpora, another issue can arise for researchers or L2 teachers as how to determine the RFs to be included. The target RFs should be chosen based on a thorough search of RFs in comprehensive spoken corpora and their importance and usefulness in learners' listening comprehension of conversation rather than personal judgement. However, it should also be noted that some phrases in daily conversation might be frequently used whereas others are used in specific accent; therefore, the accent of the phrase should also be checked. Apart from checking the accent in spoken corpora, preexisting knowledge of RFs crucial to learn on the part of the learners can also be checked by having some representative learners randomly select the unknown spoken phrases in a spoken corpora.

In relation to technical concerns, captions in the video modality should also be mentioned as regards the effectiveness of RF comprehension. Yang & Chang (2013) suggests the use of annotated keyword captions in that it assists with the learning of RFs. Employing the video modality in the present study might have yielded different results in video modality.

6.6. Limitations

The present study has several limitations, perhaps the most consequential of which was its limited control of proficiency levels. The proficiency level of the learners was identified on the basis of the exam developed and run by the language school at the very beginning of the semester. However, this is clearly not a perfect measure of L2 proficiency for overall listening ability. Additionally, the study did not include advanced learners, as almost all students reported having no problem in listening comprehension.

The second limitation was the controlled experiment of RFs at a sentence-level of listening comprehension. Listening comprehension of RFs at extended sentence level or a paragraph-level with a consistent context was not employed in the study. It was also challenging to ensure that the students keep listening and answering all the questions in the given tasks throughout the pretest and posttest. Additionally, the distribution of each RF in the assessment

test in listening comprehension test was not equal due to the very nature of each feature, which in turn led the weight of the scores allocated for each feature to be different from each other.

Thirdly, there was only an immediate posttest used in this study and no delayed test for the RF listening comprehension was administered in this study. Also the posttest took place only one week after the last instructional module was completed, which was the best time available, given the limitations of the language school semester and schedules of multiple participating classes.

Lastly, the number of students who volunteered to write reflection reports in the qualitative analysis limits the generalizability of the results. This study was carried out in an EFL setting with Turkish participants who were at the preparatory school of a state University in Istanbul, Turkey. The targeted RFs were contraction, assimilation, flap, elision and linking at sentence level and thus the effect of instruction of these features on listening comprehension at the sentence-level was investigated. For this reason, its findings may not be generalizable to other L2 learners, other RFs and a paragraph level of listening comprehension in a context. Web based RFsI was designed to help students master challenging sound modifications by offering them a scaffolded and instructional platform. Due to the qualitative nature of reflection reports and interviews, and the insufficient number of participants in reflection reports, learners' reports regarding the perceptions on the web based RFsI was limited, but such a data might be collected if the research were replicated and expanded to include a larger student sample. In a similar vein, because the data for this study came from the preparatory language year of students from various fields in a technical university, it cannot be guaranteed that they all had the same degree of listening comprehension ability in RFs, and its results may not be generalizable to young EFL learners.

6.7. Directions for Future Research

This study focused on comprehension of RFs in a listening comprehension context, which can be used as a basis for future research in the areas of computer assisted language instruction of RFs, perception of RFs and production of RFs. The ideas outlined below demonstrate possible directions for future research.

First of all, this research is among the first to employ RF instruction in an L1 Turkish context. Five types of RFs –contraction, assimilation, flap, elision and linking- were instructed to four different groups explicitly yet the same features were instructed to corresponding level of four control groups implicitly. Cross comparisons between the experimental and control

groups were made and the comparison within the group was administered. Random selection of the participants and their random assignment into groups within a quasi-experimental design, lack of teacher variability, allocation of the equal amount of time for instruction in each group- all these factors make the research design of the study sound enough to make reliable and to some extent generalizable results as to whether and which RFs foster learners' listening comprehension development. In the future, more replication studies could be conducted to reach more generalizable results on the effectiveness of RFsI or to confirm the findings by using the same research design. What is more, this study can be expanded, including a wide range of populations, such as language learners from different universities in Turkey, language learners from other countries with distinct L1 contexts, language instructors and experts in material development, so as to provide a more thorough depth of data and to get greater insight into the issue and to widen the scope of generalizability.

Secondly, one factor that has influenced the results is the scoring method in the dictation task. Subjects were given either full or non-credit for their responses. Partial credit was not given even if their response did reflect a very vague understanding of the original RF. For example, in flap, there was only one word to assess as a target; however, this was not the case when the target feature linking was evaluated because, by the very nature of each feature, linking was composed of several words. Future research concerning RFs should find a way to give subjects credit for various subtypes of partially correct answers depending on the nature of the feature.

Thirdly, future studies could explore the effects of different instruments of instruction on listening comprehension of RFs utilizing this experimental design. Such methodology of instruction would include the incorporation of web-based application, mobile-assisted language learning or captions with annotated words. Captioning may help segment word boundaries. In other words, it may facilitate identification of what might otherwise be an incomprehensible stream of speech. In relation to data collection instruments, future research could measure the learners' performance through think aloud protocols in a qualitative design or through "E-prime" in an experimental design as it allows millisecond precision timing to ensure accurate data.

Fourthly, the role of some other cognitive and affective variables such as individual differences, working memory, listening to a paragraph-level passage with RFs, anxiety or motivation on listening comprehension development could be examined more closely. These

variables may increase our understanding of how they mediate the effects of RFs in relation to listening comprehension development.

Finally, RFs not only in relation to listening comprehension but also in relation to language production could be investigated in future studies in an EFL context.

6.8. Conclusion

The current study presents an empirical study of the effectiveness of reduced form instruction on second language sentential level listening comprehension. The target reduced forms covered in the study were contraction, assimilation, flap, elision and linking. After developing an instructional package of reduced forms addressing each feature, and setting up a web based environment in which to deliver L2 aural and visual reduced form instruction, the participants were randomly assigned to eight reduced form groups: four experimental groups (audio instruction to high proficiency, audio instruction to low proficiency, video instruction to high proficiency and video instruction to low proficiency) and four control groups who followed their regular listening courses with no explicit instruction of RFs (audio instruction to high proficiency, audio instruction to low proficiency, video instruction to high proficiency and video instruction to low proficiency). Based on the assessment tests (dictation task, discrimination task, listening comprehension test, reflection report and interview), it was found that the instruction of reduced forms is effective in L2 listening comprehension development. One important finding is that the features of contraction, assimilation, elision and linking facilitate listening comprehension, which is in line with the findings of previous studies; however, flap has no role in this case. The results also indicate that when audio and video modality with no captions are offered and the beneficial effect of the modality is compared, students showed almost equal performance across the assessment tests (dictation task, discrimination task and listening comprehension test). As for the proficiency levels, the four instructional groups in both high and low proficiency levels outperformed the control groups in regard to the comprehension of reduced forms and the development of listening comprehension.

Lastly, participants in interviews and reflection report the beneficial effect of the reduced forms on their listening comprehension development and raising awareness on each feature.

REFERENCES

Ahmadian, M., & Matour, M. (2014). The effects of explicit instruction of connected speech on Iranian EFL learners' listening comprehension skill. *International Journal of Applied Linguistics and English Literature*, 3 (2), 227-236. Doi: 10.7575/aiac.ijalel.v.3n.2p.227.

Al-Alwan, A., Asassfeh, S., & Al-Shboul, Y. (2013). EFL learners' listening comprehension and awareness of metacognitive strategies: How are they related?.*International Education Studies*, 6(9), 31-39 doi.:10.5539/ies.v6n9p31.

Alameen, G. (2014). The effectiveness of linking instruction on NNS speech perception and production. Graduate Theses and Dissertations. Paper 14004 http://lib.dr.iastate.edu/etd/14004

Altenberg, E. P. (2005). The perception of word boundaries in a second language. *Second Language Research* 21.4, 325–358.

Aquil, R. (2012). Listening English connected speech: A problem and solutions. *Arab World English Journal*, 3(2), 329-364. ISSN: 2229-9327.

Arbaugh, J., & Berbunan-Fich, R. (2006). An investigation of epistemological and social dimensions of teaching in online learning environments. *The Academy of Management Learning and Education,* 5(4), 435-447.

Archilla-Suerte, Zevin, J., Bunta, F., & Hernandez, A.E. (2011). Age of acquisition and proficiency in a second language independently influence the perception of non-native speech. *Bilingual Language Cognition,* 15(1), 190-201.

Avery, P & Ehrlich, S. (1992). *Teaching American English Pronunciation*. Oxford University Press.

Barrera-Pardo, D. (2008). The reality of stress timing. *ELT Journal*, 62 (1): 11-17 doi:10.1093/elt/ccm073.

Baltova, I. (1999). Multisensory language teaching in a multidimensional curriculum: the use of authentic bimodal video in core French. *The Canadian Modern Language Review,* 56 (1), 31-48.

Başal, A., Gülözer, K., & Demir, İ. (2015). Use of video and audio in EFL listening test. *Journal of Education and Training Studies,* 3(6),83-89.http://dx.doi.org/10.11114/jets.vi6.1001.

Batty, A. O. (2015). A comparison of video- and audio-mediated listening tests with many-facet Rasch modeling and differential distractor functioning. *Language Testing,*32(1), 3-20.

Bayyurt, Y. & Karataş, N. B. (2011).Needs Analysis: The first step in content development for mobile learning. *Boğaziçi Journal of Education*, 28 (1), 13-22.

Bell, A., Brenier, J.M., Gregory, M., Girand, C., & Jurafsky, D. (2009). Predictability effects on durations of content and function words in conversational English. *Journal of Memory and Language, 60,* 92-111.

Best, C., T. & Tyler, M. (2007). Nonnative and second-language speech perception: Commonalities and complementarities. In Bohn, O. S. & Munro, M. J., (Eds.), *Language Experience in Second Language Speech Learning: In honor of James Emil Flege* (pp. 13-34). Amsterdam: John Benjamins.

Bird, S. A., & Williams, J.N., (2002). The effect of bimodal input on implicit and explicit memory: an investigation into the benefits of within-language subtitling. *Applied Psycholinguistics,* 23 (4), 509-533.

Bleile, K. M. (2014). *The Manuel of speech sound disorders: A book for students and clinicians (2nd Ed.)*. the USA, Cengage Learning.

Boothroyd, A. (2006). Characteristics of listening environments: Benefits of binaural hearing and implications for bilateral management. *Journal of International Audiology*. 45(1), 12-18.

Brett, P. (1997). A comparative study of the effects of the use of multimedia on listening comprehension. *System*, 25 (1), 39-53.

Brouwer, S. (2010). Processing strongly reduced forms in casual speech. (Phd Dissertation).

Brouwer, S., Mitterer, H., & Huettig, F. (2012). Speech reductions change the dynamics of competition during spoken word recognition. *Language and Cognitive Processes,* 27(4), 539-571.

Brown, J. D. (2005). *Testing in Language Programs: A comprehensive guide to English language assessment.* New York: McGraw-Hill.

Brown JD, & Hilferty A (1986a). Listening for reduced forms. *TESOL Quarterly*. 20:759-763.

Brown JD, & Hilferty A (1986b). The effectiveness of teaching reduced forms for listening comprehension. *RELCJournal.* 17:59-70.

Brown J.D., & Hilferty, A. (2006). The effectiveness of teaching reduced forms for listening comprehension. In: Brown JD, Kondo-Brown K (Eds.). *Perspectives on Teaching Connected Speech to Second Language Speakers.* Honolulu, HI: University of Hawai'i, National Foreign Language Resource Center pp. 51-58.

Brown, J. D. (2006). Authentic communication: Whyzit importan' ta teach reduced forms? In T. Newfields, et al. *Authentic Communication: Proceedings of the 5th Annual JALT Pan-SIG Conference*. Pp 13-24. Retrieved June 6, 2007 from http://jalt.org/pansig/2006/HTML/Brown.htm

Brown, J. D & K. Kondo-Brown (Eds.). (2006). *Perspectives on teaching connected speech to second language speakers*, University of Hawaii Press, Honolulu.

Brungart, D.S., Kordik, A. J., & Simpson, B. D. (2005). Audio and visual cues in a two-talker divided attention speech monitoring task. *Human Factors*, 47, 562-573.

Buchweitz, A., Mason, R. A. Meschyan, G. K., T. A., & Just, M. A. (2014). Modulation of cortical activity during comprehension of familiar and unfamiliar text topics in speed reading and speed listening. *Brain & Language*, 139, 49-57.

Buck, G. (2001). *Assessing Listening.* Cambridge: Cambridge University Press.

Bull, G., & Anstey, M. (2010). *Evolving Pedagogies: Reading and Writing in a multimodal world*. Melbourne: Education Services Australia.

Cahill, R. (2006). Teaching reduced interrogative forms to low-level EFL students in Japan. In J.D. Brown & K. Brown, (Eds.), *Perspectives on teaching connected speech to second language speakers* (pp. 99-125), Honololu, HI: University of Hawai'I, National Foreign Language Resource Center.

Canagarajah, S. (2014). In search of a new paradigm for teaching as an international language. *Tesol Quarterly*, 4, (4), 767-785.

Carreira, J. M. (2008). *Effects of teaching reduced forms in university preparatory course.* In K. Bradford Watts, T. Muller, & M. Swanson (Eds.), *JALT 2007Conference Proceedings (pp.200-207). Tokyo: JALT.*

Celce-Murcia, M., Brinton, D. M., & Goodwin, J. M. (2011). *Teaching pronunciation: A reference guide (2nd ed.).* New York: Cambridge University Press.

Chan, A. Y. W. (2011). The perception of English speech sounds by Cantonese ESL learners in Hong Kong. *Tesol Quarterly*, 45, (4), 718-748.

Chang, C.-S. (2009). Gains to L2 listeners from reading while listening versus listening only in comprehending short stories. *System*, 37, 652-663.

Chang, C,-S., & Millett, S. (2015). Improving reading rates and comprehension through audio-assisted extensive reading for beginner learners. *System*, 52, 91-102. DOI: 10.1016/j.

Chang, C.C, Tseng, K. H, & Tseng, J. S. (2011). Is single or dual channel with different English proficiencies better for English listening comprehension, cognitive load and attitude in ubiquitous learning environment? *Computers and Education,* 57, 2313-2321.

Chang, M. M. (2005). Applying self-regulated learning strategies in a web-based instruction – An investigation of motivation perception. *Computer Assisted Language Learning*, 18(1), 8.

Chen, I. J., & Chang, C. C. (2011). Content presentation modes in mobile listening tasks: English proficiency as a moderator. Computer Assisted Language Learning. 24(5), 451-470.

Chen, S.W. (2002). Problems in listening comprehension for learners of EFL. *Studies in English Language and Literature,* 10, 57-70.

Chiang, C. S., & Dunkel, P. (1992). The effect of speech modification, prior knowledge, and listening proficiency on EFL lecture learning. *TESOL Quarterly*, 26(2), 345-374.

Clark, H. & Clark, E., V. (1977). *Psychology and Language: An Introduction to Psycholinguistics.* New York: Harcourt Brace Jovanovich Inc.

Connine, C. M. (2004) It is not what you hear, but how often you hear it: On the neglected role of phonological variant frequency in auditory word recognition. *Psychonomic Bulletin and Review,* 11(6), 1084-1089.

Cormier, C. M., Zhang, Y. H., & Matsuzawa, T. (2013). Comprehension of English Reduced Forms by Chinese Business People and the Effectiveness of Instruction. *Proceedings of the 15th Annual Temple University Japan Campus Applied Linguistics Colloquium*. 10-18.

Coşkun, A. (2010). The effect of metacognitive strategy training on the listening performance of beginner students. *Novatis-ROYAL,* 4, (1), 35-50.

Creswell, J. W. (2012). *Educational Research: Planning, conducting and evaluating quantitative and qualitative research.* USA. Pearson Education, Inc.

Crocker, L., & Algina, J. (2008). *Introduction to Classical and Modern Test Theory*. Ohio, USA: Cengage Learning Pub.

Cross, J. (2010). Raising L2 listeners' metacognitive awareness: a sociocultural theory perspective, *Language Awareness,* 19 (4), 281-297. doi:10.1080/09658416.2010.519033.

Cross, J. (2013). Promoting autonomous listening to podcasts: A case study. *Language Teaching Research.* 18 (1), 8-32.

Crystal, D. (1980). *A first dictionary of linguistics and phonetics.* London: Deutsch.

Crystal, D. (2003). *A first dictionary of linguistics and phonetics* (5thed.). Cambridge, MA: Blackwell.

Cutler, A. (2001). Listening to a second language through the ears of first. *Interpreting*, 5, 1-23.

Çakmak, F. (2014). Exploring the multimedia glosses and strategy use in second language listening comprehension and incidental vocabulary learning in a mobile learning. (Doctoral Dissertation) Boğaziçi University, Istanbul, Turkey.

Danan, M. (1992). Reversed subtitling and dual coding theory: new directions for foreign language instruction. *Language Learning*, 42(4), 497-527.

Danan, M. (2004). Captioning and subtitling: undervalued language learning strategies. *META*, 49(1), 67-77. Doi:10.7202/009021ar.

Dang, T. N. Y, Webb, S. (2014). The lexical profile of academic spoken English. *English for Specific Purposes*, 33, 66-76.

Derwing, T. M. (2010). Utopian goals for pronunciation teaching. In J. Levis & K. LeVelle (Eds.), *Proceedings of the 1st Pronunciation in Second Language Learning and Teaching Conference*, Iowa State University, Sept. 2009. (pp. 24-37), Ames, IA: Iowa State University.

Diao, Y., Chandler, P., & Sweller, J. (2007). The effect of written text on comprehension of spoken English as a foreign language. *American Journal of Psychology*, 120(2), 237-261.

Douglas, D. E. & Van Der Vyver, G. (2004). Effectiveness of e-learning course materials for learning database management systems: An Experimental investigation. *Journal of Computer Informatıon Systems,* 44 (4), 41-48.

Eddington, D., & Elzinga, D. (2008). The phonetic, Context of American English Flapping: Quantitative Evidence. *Language and Speech*, 52(3), 245-266.

Erbanova, P. (2014). Aspects of connected speech in English: Assessing students' progress after pronunciation training. (MA dissertation)

Erçetin, G. (2011). Pedagogical issues in developing mobile assisted language learning materials. *Boğaziçi Journal of Education*, 28 (1), 22-31.

Ernestus, M., Baayen, H., & Schreuder, R. (2002). The recognition of reduced word forms. *Brain and Language,* 81, 162-173.

ETS. (2003). TOEFL Practice Tests, Volume 1,Test of English as a Foreign Language , Part A). USA: Educational Testing Service.

Field, J. (2003).Promoting perception: Lexical segmentation in L2 listening. *ELT Journal*, 57(4), 325-334.

Feyten, C.M. (1991).The power of listening ability: An overlooked dimension in language acquisition. *The Modern Language Journal*, 75, 173-180.

Field, J. (2004). An insight to listeners' problems: too much bottom-up , or too much top - down? *System*, 32, 363-377.

Field, J. (2008). Revising segmentation hypotheses in first and second language listening. *System*, 36, 35-51. Doi:10.1016/j.

Field, J. (2011). Into the mind of academic listener. *Journal of English Academic Purposes*, 10, 102-112. doi:10.1016/j.jeap.2011.04.002.

Flege, J. E. (1992). Speech Learning in a Second Language. In Ferguson, C., Menn, L. & Stoel-Gammon, C. (eds.), *Phonological Development: Models, Research and Implications* (pp.565-604). Timonium, MD York Press.

Flege, J. E. (1993). Production and Perception of a Novel, Second Language Phonetic Contrast. *Journal of the Acoustical Society of America*, 93(3), 1589-1608.

Flege, J. E. (1995). Second Language Speech Learning: Theory, finings and problems. In Strange, W. (Ed.), Speech Perception and Linguistic Experience: Issues in Cross-Language Research (pp.229-273). Timonium, MD York Press.

Flege, J. E. (2002).Interactions between the Native and Second Language Phonetic Systems. In Burmeister, P., Piske, T. & Rohde, A. (Eds.), *An Integrated View of Language Development: Papers in Honor of Henning Wode* (pp. 217- 244). Trier: Wissenschaftlicher Verlag.

Flege, J. E. (2003). Assessing constraints on second language segmental production and perception. In Schiller, N. & Meyer, A. (Eds.), *Phonology and Phonetics in Language Comprheensionand Production: Differencesand Similarities Berlin Mouton de Gruyter.*

Gaskell, M. G., & Snoeren, N. D. (2008). The impact of strong assimilation on the perception of connected speech. *Journal of Experimental Psychology: Human Perception and Performance.* 34, 1-29.

Gervain, J., Nespor, M., Mazuka., R., Horie, R., & Mehler, J. (2008). Bootstrapping word order in pre-lexical infants: A Japanese- Italian cross-linguistic study. *Cognitive Psychology*, 57, 56-74.

Gilbert, J. B. (2005). *Clear Speech: Pronunciation and listening comprehension in American English* (3rded.). New York: Cambridge University Press.

Goh, C.C.M. (2000). A cognitive perspective on listening comprehension problems. *System*, 28, 55-75. http://dx.doi.org/10.1016/j.bbr.2011.03.031.

Goh, C. C. M. (2002). Exploring listening comprehension tactics and their interaction patterns. *System*, 30, 185-206.

Goh, C. C. M. (2008). Metacognitive instruction for second language listening development: Theory, practice and research implications. *RELC Journal*, 39(2), 188-213. doi: 10.1177/0033688208092184.

Goh, C. C. M., & Hu, G. (2013). Exploring the relationship between metacognitive awareness and listening performance with questionnaire data. *Language Awareness, 23*(3), 255–274. http://doi.org/10.1080/09658416.2013.769558.

Gow, D. W. , & Im, A. M. (2004) A cross-linguistic examination of assimilation context effects. Journal of Memory and Language, 51, 279-296.

Graham, S., Santos, D. & Vanderplank, L. (2011). Exploeing the relationship between listening development and strategy use. *Language Teaching Research*. 15(4), 435-456.

Grgurovich, M. & Hegelheimer, V. (2007). Help options and multimedia listening: Students' use of subtitles and the transcript. *Language Learning & Technology*, 11, 45-66.

Guichon, N., McLornan, S. (2008). The effect of multimodality on L2 learners: Implications for CALL resource design. System, 36, 85-93.

Guilford, J. P (1978). *Fundemental statistics in psychology and education.* New York: McGraw-Hill.

Hagen, S. A. (2000). *Sound Advice: A basis for listening*. New York: Pearson Education.

Hasan, A. S. (2000). Learners' perceptions of listening comprehension problems, *Culture and Curriculum*, 13(2), 137-153.Doi:http://dx.doi.org/10.1080/07908310008666595.

Harp, S. F. & Mayer, R.E. (1998). How seductive details do their damage: A theory of cognitive interest in science learning. *Journal of Educational Psychology*, 90, 414-434.

Hayati, A., & Mohmedi, F. (2011). The effect of films with and without subtitles on listening comprehension of ESL learners. British Journal of Educational Technology, 42(1), 181-192.

Hegelheimer, V., & Tower, D. (2004) Using CALL in the classroom: Analyzing student interactions in an authentic classroom. *System,* 32, 185-2015.

Henrichen, L., E. (1984). Sandhi-variation: A filter of input for learners of ESL. *Language Learning* 34,103-126.

Hochmann, J., R. (2013). Word frequency, function words, and the second gavagai problem. *Cognition,* 128, 13-25.

Huang, H. C. & Eskey, D. E. (1999). The effects of closed captioned television on the listening comprehension of intermediate English as a second language (ESL) students. *Journal of Educational technology Systems,* 28(1), 75-96.

Hsu, C. -K., Hwank, G. -J. Chang, Y.-T., &, Chang, C.-K. (2013). Effects of video caption modes on English listening comprehension and vocabulary acquisition using handheld devices. *Educational Technology and Society*, 16 (1), 403- 414.

Idsardi, W. J. & Sung, E-K. (2003). Flaps in American English and Korean: An acoustic and perceptual study. *Generative Grammar in a Broader Perspective. Proceedings of the 4th GLOW in Asia*. Seoul: Hankook. 187-208.

Ito, Y. (2001). Effect of reduced forms on ESL learners' input-intake process. *Second Language Studies 20* (1) 99-124. Retrieved June 6, 2007 from http://www.hawaii.edu/sls/uhwpesl/20(1)/Ito.pdf.

Ito, Y. (2006). The comprehension of English reduced forms by second language learners and its effect on input-intake process. In J. D. Brown, & K. Kondo-Brown, (Eds.), Perspectives on teaching connected speech to second language speakers (67-81). Honololu, HI: University of Hawai'i National Foreign Language Resource Center.

Jafari, K., & Hashim, F. (2012). The effects of using advance organizers on improving EFL learners' listening comprehension: A mixed method study. *System*, 40, 270-281.

Kalyuga, S., Chandler, P., & Sweller, J. (2004). When redundant on-screen text in multimedia technical instruction can interfere with learning. *Human Factors and Ergonomics Society*, 46(3), 567-581.

Kang, O., & Moran, M. (2014). Functional Loads of pronunciation features in nonnative speakers' oral assessment. *TESOL Quarterly,* 48, (1), 176-187. doi: 10.1002/tesq.152.

Khaghaninezhadi, M. S., & Jafarzadeh, G. (2014). Investigating the Effect of Reduced Forms Instruction on EFL Learners' Listening and Speaking Abilities. English Language Teaching, 7(1), 159-171. doi:10. 5539/elt.v7n1p159

Kelly, G. (2000). *How to teach pronunciation*. London: Longman.

Kemp, J. (2010). The Listening Log: motivating autonomous learning. *ELT Journal,* 64(4) 385-395. doi:10.1093/elt ccpo99.

Kennedy, S. & Trofimovich, P. (2010). Language awareness and second language pronunciation: a classroom study. *Language Awareness*, 19(3), 171-185.

Kilgore, R. M. (2009). Simple displays of talker location improve voice identification performance in multi-talker spatialized audio environments. *Human Factors*, 51(2), 224-239.

Kim, Y. S.,& Philips, B. (2014). Cognitive correlates of listening comprehension. *Reading Research Quarterly*, 49 (23), 269-281. Doi:10.1002/rrq.74.

Kissling, E. M. (2012). *The effect of phonetic instruction on adult learners' perception and production* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses.

Kuhl, P. K., Conboy, B. T., Coffey-Corina, S., Padden, D., Rivera-Gaxiola, M. & Nelson, T. (2008). Phonetic Learning as a pathway to language: new data and native language magnet theory expanded (NLM-e) *Philosophical Transactions of the Royal Society B*,363, 979-1000. Doi: 10. 1098/rstb.2007.2154.

Kukulska-Hulme, A. & Shield, L. (2008). An overview of mobile assisted language learning: From content delivery to supported collaboration and interaction. *ReCALL*, 20(3), 271-289.

Kuntay, A., & Slobin, D. I. (2002). Putting interaction back into child language: Examples from Turkish. *Psychology of Language and Communication*, 6, 5–14.

Lai, C., Yeung, Y., & Hu, J. (2016). University student and teacher perceptions of teacher roles in promoting autonomous language learning with technology outside the classroom. *Computer Assisted Language Learning*, 29(4), 703-723.

Larson-Hall, J. (2009). *A guide to doing statistics in second language research using SPSS*. New York, NY: Routledge.

Labau, R. (2004). *New English file.* Pearson

Lee, J. & Benati, A. (2009). Research and Perspectives on processing instruction. Mouton de Gruyter.

Lenneberg, E. H. (1967). Biological foundations of language. New York: Wiley.

Leveridge, A. N., Yang, C. J. (2014). Learner Perceptions of reliance on captions in EFL multimedia listening comprehension. *Computer Assisted Language Learning*, 27 (6), 545-559.

Levis, G. M., & Levis, J. (2010). Authentic speech and teaching sentence focus In J. Levis & K. LeVelle (Eds.), *Proceedings of 1st Pronunciation in Second Language Learning and*

Teaching Conference, Iowa State University, Sept. 2009. (pp135-144), Ames, IA: Iowa State University.

Lodge, K. (2009). *A Critical Introduction to Phonetics*. London: Continuum.

Luo, C. P. (2008). An action research plan for developing and implementing the students' listening comprehension skills. *English Language Teaching, 1*(1), 25-28.

Marks, J. (1999). Is stress timing real? *ELT Journal*, 52 (3), 191-199. Doi:10.1093/elt/53.3.191.

Masahiro, K. (2012). www.hannan-u.ac.jp/gakujutsu/...att/mrrf43000000o3m6.pdf

Mathews, J., & O'Toole, J. M. (2015). Investigating an innovative computer application to improve L2 word recognition from speech. *Computer Assisted Language Learning*. 28(4), 364-382.

Mathews, J., O'Toole, J. M., & Chen, S. (2016). The impact of word recognition from speech (WRS) proficiency level on interaction, task success and word learning: design implications for CALL to develop L2 WRS. *Computer Assisted Language Learning*, doi:10.1080/09588221.2015.1129348.

Matsuura, H., Chiba, R., & Mahoney, S. (2014). Accent and speech rate effects in English as lingua franca. *System*, 46, 143-150.

Matsuzawa, T. (2006). Comprehension of English reduced forms by Japanese business people and the effectiveness of instruction. In J. D. Brown, & K. Kondo Brown, (Eds.). *Perspectives on teaching connected speech to second language speakers*. (pp. 59-66) Honololu, HI: University of Hawaii Press. National Foreign Language Resource Center.

Mayer, R. E. (2001). *Multimedia Learning*. New York. Cambridge University Press.

Mayer, R. E. (2005). Cognitive theory of multimedia learning. In R. E. Mayer (Ed.), *The Cambridge Handbook of Multimedia Learning*. New York: Cambridge University Press.

Mayer, R. E. (2009). *Multimedia learning.* (2nded). New York: Cambridge University Press.

Mayer, R. E., & Chandler, P. (2001). When learning is just click away: does simple user interaction foster deeper understanding of multimedia messages? *Journal of Educational Psychology*, 93(2), 390-397.

Mayer, R. E., Heiser, J., & Lonn, S. (2001). Cognitive constraints on multimedia learning: When presenting more material results in less understanding. *Journal of Educational Psychology*, 93, 187-198.

Mayer, R. E., & Moreno, R. (2002). Aids to computer based multimedia learning. *Learning and Instruction*, 12(1), 107-119.

Mayer, R. E., & Moreno, R. (2003). Nine ways to reduce cognitive load in multimedia learning. *Educational Psychologist,* 38(1), 43-52.

McBride, K. A. (2007). The effect of rate of speech and Call design features on EFL listening comprehension. (Doctoral dissertation).

Mehrpour, S., & Rahimi, M. (2010). The impact pf general and specific vocabulary knowledge on reading and listening comprehension: A case of Iranian EFL learners. System, 38, 292-300.

Melenca, M. (2001). Teaching connected speech rules to Japanese speakers of English so as to avoid a staccato speech rhythm. (MA thesis dissertation).

Meskill, C. (1996). Listening skill development through multimedia. *Journal of Educational Multimedia and Hypermedia*, 5(2), 179-201.

Mitterer, H., Kim, S., & Cho, T. (2013). Compensation for complete assimilation in speech perception: The case of Korean labial- to – velar assimilation. *Journal of Memory and Language*, 69, 59-83.

Moussalli, S. (2013). *Using Audio and Audio-Visual Feedback to Enhance Learners' Perception and Production of Tag Questions* (Doctoral dissertation, Concordia University).

Moyer, A. (2006). Language contact and confidence in second language listening comprehension: A pilot study of advanced learners of German. *Foreign Language Annals,* 39 (2), 255-275.

Munro, M., N. (2008). Aptitude for novel speech sounds and sound sequences: Implications for second- language pronunciation. Unpublished Doctoral Dissertation, University of California, Irvine.

Munro, M., J. & Derwing, T., M. (2011). Research timeline: The foundations of accent and intelligibility in pronunciation research. *Language Teaching*, 44(3), 316-327.

O'Bryan, A., & Hegelheimer, V. (2007). Integrating CALL into the classroom: the role of podcasting in an ESL listening strategies course. *European Association for Computer Assisted Language Learning*. Doi.10.1017/S0958344007000523.

O'Bryan, A., & Hegelheimer, V. (2009). Using a mixed methods approach to explore strategies, metacognitive awareness and the effects of task design on listening development. *Canadian Journal of Applied Linguistics,* 12 (1), 9-37.

Ockey, G. J. (2007). Construct implications of including still image or video in computer based listening tests. *Language Testing*, 24(4), 517-537.

Otake, T., Hatano, G., Cutler, A., & Mehler, J. (1993). Mora or Syllable? Speech segmentation in Japanese. *Journal of Memory and Language,* 32, 258-278.

Pardo-Ballester, C. (2016). Using video in web-based listening tests. *New Approaches in Educational Research*, 5(2), 91-98. Doi:10.7821/near.2016.7.170.

Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.

Perez, M., M., Noortgate, W., V., D, & Desmet, P. (2013). Captioned video for L2 listening and vocabulary learning: A meta-analysis. System, 41, 720-739.

Rahimi, A., & Abedini, A. (2009). The Interface between EFL Learners' self- efficacy concerning listening comprehension and listening proficiency. *Novitas Royal.* 3(1), 14-28.

Reinisch, E., & Mitterer, H. (2016). Exposure, modality input, variability and categories of perceptual recalibration. *Journal of Phonetics*. 55, 96-108.

Roach, P. (2009). *English Phonetics and Phonology* (Fourth Ed.). Cambridge.

Rogerson, M. (2006). Don'cha Know? A survey of ESL teachers' perspectives on reduced form instruction.Second Language StudiesIn J. D. Brown, & K. Kondo Brown, (Eds.). *Perspectives on teaching connected speech to second language speakers*. (pp. 85-97) Honololu, HI: University of Hawaii Press. National Foreign Language Resource Center.

Riehl, A. K. (2003). American English Flapping: Perceptual and acoustic evidence against paradigm uniformity with phonetic features. *Working Papers of the Cornell Phonetics Laboratory,* 15, 271-337.

Rosa, M. (2002). Don'cha know? A survey of ESL teachers' perspectives on reduced forms instruction. Second Language Studies, 21(1), 49-78.

Rosell-Aguilar, F. (2007). Top of the Pods: In search of podcasting 'podagogy' for language learning. *Computer Assisted Language Learning*, 20, 471-492.

Rost, M. (1994). *Introducing Listening.* London: Penguin.

Saad, M. A. H., & Pilus, Z. (2013). Phonological assimilation in the English of native and non-native speakers' reading and spontaneous speech. *Journal of Modern Languages,* 23-57-67.

Sanchez, C. A., & Wiley, J. (2006). An examination of the seductive details effect in terms of working memory capacity. *Memory & Cognition*, 34, 344-355.

Sakai, T., Igashima, Y. (2006). Learning about sound changes in Spoken Japanese: The development of CALL materials. In J. D. Brown, & K. Kondo Brown, (Eds.).

Perspectives on teaching connected speech to second language speakers. (pp. 59-66) Honololu, HI: University of Hawaii Press. National Foreign Language Resource Center.

Saygin, A. P., & Wilson, S. M. (2002). Paradigm reanalysis and the representation of morphologically complex words in Turkish. (Paper presented at the 38th Annual Meeting of the Chicago Linguistic.

Saygın, A. P. Wilson, & S.M. (2010). A computational analysis of interactional patterns in the acquisition of Turkish. *Research on Language and Computation* 8, 239-253. Society. University of Chicago, Illinois, USA.

Seferoğlu, G., & Uzakgören, S. (2004). Equipping learners with listening strategies in English language classes. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi 27*, 223-231.

Seong, Y. H. (2008). Evaluating an instrument for assessing connected speech performance using facets analysis. University of Hawai'i at Mānoa. *Second Language Studies*, 26(2), 45-101.

Settler, J. & Jenkins, J. (2005). Pronunciation. State-of-the-Art Review Article. *Language Teaching*, 38, 1-17. Doi: 10. 1017/S026144480500251X.

Shi, L.F. (2009). Normal- hearing English- as a-second language listeners' recognition of English words in competing signals. *International Journal of Audiology,* 48, 260- 270.

Shroeders, U., Wilhelm, O., & Bucholtz, N. (2010). Reading, listening and viewing comprehension in English as a Foreign Language: One or more constructs. *Intelligence*, 38, 562-573.

Solt, S., Pugach, Y., Klein, C. E., Adams, K., Stoyneshka, I., & Rose, T. (2004). L2 perception and production of the English regular past: Evidence of phonological effects. In A. Brugos, L. Micciulla, & C. E. Smith (Eds.), BUCLD 28: Proceedings of the 28th annual Boston University. Conference on Language Development (pp. 553–564).

Sorden, S. D. (2005). A cognitive approach to instructional design for multimedia learning. *Information Science Journal*, 8, 263-279.

Staehr, L. S. (2009). Vocabulary knowledge and advanced listening comprehension in English as a foreign language. *Studies in Second Language Acquisition*, 31(4), 577-607.

Stewart, M., A., & Pertusa, I. (2004). Gains to language learners from viewing target language closed-captioned films. *Foreign Language Annals*, 37(3), 438-442.

Strange, W. (2011). Automatic selective perception of first and second language speech: A working model. *Journal of Phonetics.* 39(4), 456-466.

Sung, E-K. (2003a). Acoustics and perception of flaps in American English and Korean. *Language Research*, 39(4), 933-958.

Sung, E-K. (2003b). Flaps in American English: Production. (Doctoral dissertation).

Taylor, G. (2005). Perceived strategies of students watching captioned video processing. *Foreign Language Annals,* 38(3), 422-427

Terrel, T., D. (1993). Comprehensible input for immediate foreign language students via video. *Journal of Language Learning Technologies*, 26(2), 17-23.

Thomson, R. I. (2011). Computer assisted pronunciation training: Targeting second language vowel perception improves pronunciation. *CALICO Journal,* 28, 744–765.

Toda, T. (2006) Focus on form in teaching connected speech. In J. D. Brown, & K. Kondo-Brown, (Eds.), *Perspectives of Teaching Connected Speech to Second Language Speakers* (pp. 189-2015). Honolulu, HI: University of Hawaii, National Foreign Language Resource Center.

Toh, S.C., Munassar, W. A. S., & Yahaya, W. A. J. W. (2010). Redundancy effect in multimedia learning: A closer look. *Curriculum, Technology & Transformation for an Unknown Future*, 988-998.

Toro, J. M., Sebastian-Galles, N., & Mattys, S. L. (2009). The rule of perceptual salience during the segmentation of connected speech. *European Journal of Cognitive Psychology*, 21, (5), 786-800.

Tucker, B.V. (2007). Spoken word recognition of reduced American flap. (Doctoral Dissertation).

Underwood, P. R., Bridges, S., & Hattori, T. (2010). *Speak Easy: Spoken English for Japanese Learners*. Suita Media Island.

Underwood, P., & Wallace, M. (2012). *The effects of instruction of English speech on low proficiency EFL students.* Retrieved from http://www.academia.edu/854671/The_Effects_of_Instruction_in_Reduced_Forms_of_English_Speech_on_Low-proficiency_EFL_University_Students.

Ur, P. (1984). *Teaching listening comprehension*. Cambridge, NY:Cambridge University Weinstein, N. 2001. Whaddaya Say? (2nd ed.). White Plains, NY: Pearson Education.

Vandergrift, L. (1999). Facilitating second language listening comprehension: Acquiring successful strategies, *ELT Journal,* 53(3), 168-176.

Vandergrift, L. (2004). Listening to learn or learning to listen? *Annual Review of Applied Linguistics*,24, 3-25.

Vandergrift, L. (2006). The metacognitive awareness listening questionnaire: Development and validation. *Language Learning*, 56 (3), 431-462.

Vandergrift, L. (2007). Recent developments in second and foreign language listening comprehension research. *Language Teaching*, 40(3), 191-210. Doi: 10.1017/S0261444807004338.

Vandergrift, L., & Tafaghodtari, M, H. (2010). Teaching L2 listeners how to listen does make a difference: An empirical study. *Language Learning*, 60, (2), 470-497.

Venkatagiri, H., S. & Levis, J. M. (2007). Phonological awareness and Speech comprehensibility: An exploratory study. *Language Awareness*. 16 (4), 263-277. Doi:10.2167/la417.0.

Wagner, E. (2007). Are they watching? Test taker viewing behavior during an L2 listening test. *Language Learning & Technology*. 11(1), 67-86.

Wagner, E. (2010). The effect of the use of video texts on ESL listening test-taker performance. Language Testing, 27(4)493-513. doi: 10.1177/0265532209355668.

Wang, S. (2010). An Experimental Study of Chinese English Major Students' Listening Anxiety of Classroom Learning Activity at the University Level. *Journal of Language Teaching and Research*, 1(5), 562-568.

Weber, A., Broersma, M., & Aoyagi, M. (2011). Spoken word recognition in foreign accented speech by L2 listeners. *Journal of Phonetics*. 39, 479-491.

White, K.S., Yee, E., Blumstein, S. E., & Morgan, J.L. (2013). Adults show less sensitivity to phonetic detail in unfamiliar words, too. *Journal of Memory and Language.* 68(4), 362-378

Winke, P., Gass, S., & Sydorenko, T. (2010). The effects of captioning videos used for foreign language listening activities. *Language Learning and Technology*. 14(1), 65-86.

Wong, S. W. L., Mok, P. P. K., Chung, K. K.-H., Leung, V. W. H., Bishop, D. V. M., & Chow, B. W.-Y. (2015). Perception of Native English Reduced Forms in Chinese Learners: Its Role in Listening Comprehension and Its Phonological Correlates. *TESOL Quarterly*, *0*(0), n/a–n/a. http://doi.org/10.1002/tesq.273.

Xie, X., Fowler, C.A. (2013). Listening with a foreign-accent: The interlanguage speech intelligibility benefit in Mandarin Speakers of English. *Journal of Phonetics*, 41, 369-378.

Xu, F. (2011). The priority of listening comprehension over speaking in the language acquisition process. *International Education Studies*. 4(1), 161-165.

Yang, J.-C., Lin, Y.-L., & Chung, C.-I. (2009). Developing a film-based learning system with English verbal reduced forms for supporting English listening comprehension. In M. Chang, R. Kuo, Kinshuk, G.-D. Chen, & M. Hirose (Eds.), Learning by playing: Gamebased education system design and development (Vol. 5670, pp. 74–84). Berlin, Heidelberg: Springer Berlin Heidelberg.

Yang, J. C., Chang, C. L., Lin Y.L., & Shih, M. J. A. (2010). *A Study of the POS Keyword Caption Effect on Listening Comprehension*, in Proceedings. of the 18th International Conference on Computers in Education. Putrajaya, Malaysia: Asia-Pacific Society for Computers in Education. 708-712.

Yang, J, & C. Chang, P. (2013). Captions and reduced form instruction: The impact on EFL students' listening comprehension. *ReCALL*, 26, 44-61. Doi: 10. 1017/S0958344013000219.

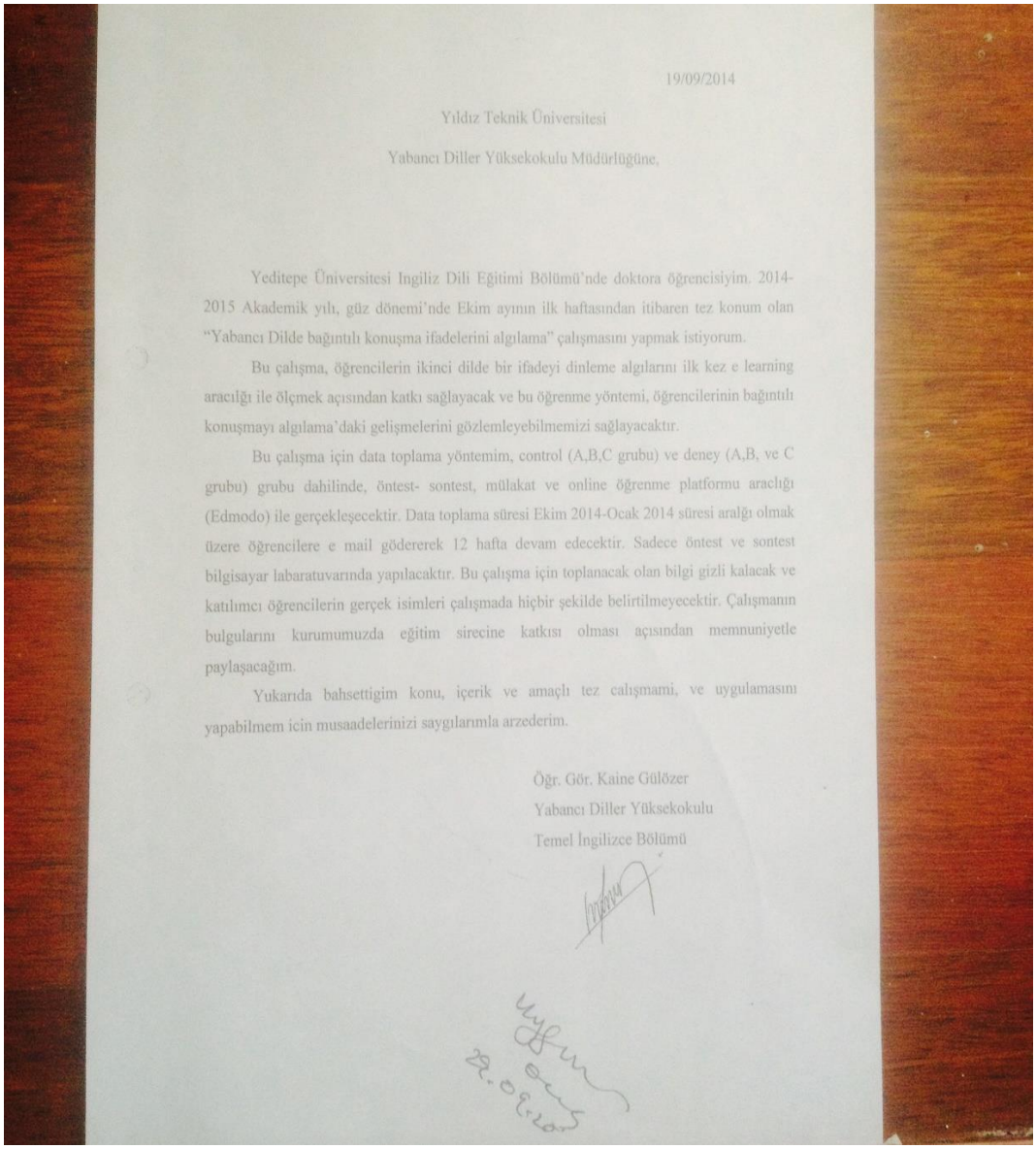
Yeh, C-C. (2013). An investigation of a podcast learning project for extensive listening. *Language Education in Asia*, 4(2), 135-149.

Zhao, Y. (1997). The Effects of Listeners' control of speech rate on second language comprehension. *Applied Linguistics*, 18 (1), 49-68.

Zielinski, B. W. (2007). The listener: No longer the silent partner in reduced intelligibility. *System*, 36, 69-84.

APPENDICES

APPENDIX A. Institution's Consent Letter (Turkish Version)



19/09/2014

Yıldız Teknik Üniversitesi

Yabancı Diller Yüksekokulu Müdürlüğüne,

Yeditepe Üniversitesi Ingiliz Dili Eğitimi Bölümü'nde doktora öğrencisiyim. 2014-2015 Akademik yılı, güz dönemi'nde Ekim ayının ilk haftasından itibaren tez konum olan "Yabancı Dilde bağıntılı konuşma ifadelerini algılama" çalışmasını yapmak istiyorum.

Bu çalışma, öğrencilerin ikinci dilde bir ifadeyi dinleme algılarını ilk kez e learning aracılığı ile ölçmek açısından katkı sağlayacak ve bu öğrenme yöntemi, öğrencilerinin bağıntılı konuşmayı algılama'daki gelişmelerini gözlemleyebilmemizi sağlayacaktır.

Bu çalışma için data toplama yöntemim, control (A,B,C grubu) ve deney (A,B, ve C grubu) grubu dahilinde, öntest- sontest, mülakat ve online öğrenme platformu aracılığı (Edmodo) ile gerçekleşecektir. Data toplama süresi Ekim 2014-Ocak 2014 süresi aralığı olmak üzere öğrencilere e mail göndererek 12 hafta devam edecektir. Sadece öntest ve sontest bilgisayar labaratuvarında yapılacaktır. Bu çalışma için toplanacak olan bilgi gizli kalacak ve katılımcı öğrencilerin gerçek isimleri çalışmada hiçbir şekilde belirtilmeyecektir. Çalışmanın bulgularını kurumumuzda eğitim sirecine katkısı olması açısından memnuniyetle paylaşacağım.

Yukarıda bahsettigim konu, içerik ve amaçlı tez calışmami, ve uygulamasını yapabilmem için musaadelerinizi saygılarımla arzederim.

Öğr. Gör. Kaine Gülözer
Yabancı Diller Yüksekokulu
Temel İngilizce Bölümü

APPENDIX A. Institution's Consent Letter (English Version)

09/19/2014

To the Director of the School of Foreign Languages, Yıldız Technical University,

I am a doctoral student at Yeditepe University. In October 2014, I am planning to conduct my dissertation research that focuses on the effect of reduced forms on listening comprehension. This research study will be useful for testing learners' listening perceptions through e-learning for the first time and gaining deeper insights into the effects of e- learning on students' English perception development.

I am going to collect data through an educational experiment, student interviews and an online learning platform. The duration of data collection is one academic semesters- from October 2014 to January 2014. The data and materials collected for the purposes of this study will be confidential and the institution's and participating students' names will not be reported throughout the study. At the end of the study, I will share the results of the study with our institution.

If you agree to participate in the study, I would be more than grateful. If you have further questions, you can contact me at kgulozer@yildiz.edu.tr. Thank you in advance.

Sincerely,

Kaine Gülözer

PhD. Student at English Language Education Programme, Yeditepe University

APPENDIX B

Participants' Consent Form

I AM BEING ASKED TO READ THE FOLLOWING MATERIAL TO ENSURE THAT I AM INFORMED OF THE NATURE OF THIS RESEARCH STUDY AND OF HOW I WILL PARTICIPATE IN IT, IF I CONSENT TO DO SO. SIGNING THIS FORM WILL INDICATE THAT I HAVE BEEN SO INFORMED AND THAT I GIVE MY CONSENT.

PURPOSE

This study is being conducted by the researcher, Kaine Gülözer, as her PhD dissertation. The purpose of the study is to investigate the effectiveness of connected speech features on perception in second language listening.

PROCEDURES

By agreeing to participate, I consent to the following activities:

* receiving listening tests

* participation in all e- learning activities of the instruction

*participation to audiotaped interviews

CONFIDENTIALITY

My name will only be known to the researcher. All references to me in conference presentations, papers, and articles will be used as a pseudonym. Only the researcher will have access to written texts and audio tapes produced by my participation in this study. I have the right to withdraw from the project at any time; if I do so, all written texts and audio tapes on which I appear will be destroyed. I do not give up any of my legal rights by signing this form. A copy of this signed consent form will be given to me.

CONTACTS

If I have additional questions about the research, I can contact the researcher as follow:

Kaine Gülözer kgulozer@yildiz.edu.tr 0532 671 00 42

Name and surname: _____ Signature: _____

Date: _____

APPENDIX C

Questionnaire – Demographic Information & Information of English Listening

Directions: The following are questions asking about you. Please take a moment and circle the item that best fits you or write a short answer in response to each item.

I agree to participate in this study (signature) _____ Date_____

ID # _____ Email-address: _____

PERSONAL INFORMATION

1.Gender: Male ☐ Female☐

2. Age: ☐ 17-19 ☐ 20-22 ☐ 23-25

3. Name of Department: ☐mechanic engineering ☐civil engineering ☐ architecture

☐shipping☐ other , please specify----------

4-Your exact group in Preparatory School with the number: ☐ (A …..) ☐ (B….) ☐ (C……)

5-What kind of high school did you graduate from?

☐ Anatolian High School

☐ Science High School

☐ Private High School

☐ Anatolian Teacher Training High School

☐ Vocational School

☐ Other (please specify) ----------

6-How old were you when you first started learning English?

☐7 or 8 ☐ 9 or 10 ☐ 11 or 12 ☐ 13 or 14

7-Have you ever had English teachers who are native speakers of English at this program?

☐ Yes ☐No

8-How easy is it to understand "real life speech" in English?

☐ Very easy ☐easy ☐ average ☐ difficult ☐ very difficult

LINGUISTIC INFORMATION

9. Have you ever been to the USA? ☐ Yes ☐ No

10. Do you listen to English through online tools such as "YouTube" or "TED talks"?

☐ Yes ☐ No

11. If you answer "Yes" to question 10, how much time do you spend listening to online language practice tools to improve listening comprehension per week?

☐ Less than 1 hour a day ☐ Less than 2 hours a day

☐ Less than 3 hours a day ☐Other _____

12. Do you watch TV programs in English?

☐Yes ☐ No

13. If your answer is "Yes" to question 12, please specify how many hours a week?

☐15 mins to 30 mins ☐ 31 minutes to 59 mins ☐1 hour to an hour and a half ☐several hours

14.Do you think you have problems in listening comprehension in English?

☐certainly yes☐ partially yes ☐ No ☐ certainly no

15. If your answer is "Yes" to question 14, please specify the problems you frequently face. You can mark on more than one option that falls in your problematic area.

☐ It is hard to identify words in a stream of speech

☐ Speech is always too fast to pick up the words

☐ I can pick up some words but I cannot understand the speech exactly.

16. Which method/s do you think will best improve your listening proficiency?

☐ Watching TV or movies

☐ Listening to audio materials on internet

☐Both listening to audio materials and watching videos through internet

☐ Listening to classroom lectures

☐ Listening to native speakers in the class

☐other please specify ----------

17. How much do you understand when you listen to a lecture on “YouTube” in English?

☐about 0%-20% ☐ about21%-40% ☐ about41%-60%

☐about 61% -80% ☐ about 81% -100%

18. Do you listen to English through the Podcasts released on our university’s website http://www.ybd.yildiz.edu.tr/sayfa/2/Y%C4%B1ld%C4%B1z-Technical-University-Podcasts/182?

☐ Yes ☐ No

19. If you answered “Yes” to question 20, how much time do you spend listening to a Podcast to improve listening comprehension per day?

☐ Less than 1 hour a day ☐ Less than 2 hours a day

☐ Less than 3 hours a day ☐Other _____

20. Have you ever attended a speaking club with a native speaker at our university?

☐ Yes ☐ No

21. If you answered “Yes” to question 20, how much do you understand when you listen to a conversation in English?

☐ Less than 50% ☐ More than 50 % ☐ More than 75%

☐ More than 95% ☐ Other _____

22. Have you ever used any other tools (e.g., games, iPod, or DVDs) to improve your listening comprehension in English?

☐ Yes ☐ No

APPENDIX D. Reduced Forms in Sentences as the First Draft

CONTRACTION

1- Well, **that's the purpose** of getting rid of the pollutants in water.
2- I think **I've learned** many things that have helped me in life.
3- I assumed **I'd never** heard from the committee again.
4- I wish I knew her problem before. I **would've done** my best to solve it.
5- Isn't that the person **you're gonnabe sharing** the room with?
6- I think **I'll be able to** get a better job soon.
7- The day before yesterday, I **should've gone** to work.
8- Am I supposed to wear a suit? Well, I think it **doesn't matter**.
9- Today, **we're gonna be talking** about the green card process.
10- Please, talk to an immigration attorney to see if **there's** a way around this.

ASSIMILATION

1- When you were really hopeless, I **got you**!
2- When I hear the news, I'll **let you know**.
3- I know you've had some failures but it hasn't **stopped you** at all.
4- You will help me with the assignment mom, **won't you**?
5- Of course, I'll be happy to **meet you**!
6- If you have a part time job, **it will comfort you** financially.
7- Don't trust Tony! He's a **heart breaker**.
8- I'd love to have **that piece** of pizza!
9- You heard the name of **the movie last year**.
10- You are the ERASMUS student coming from Spain, **aren't you?**

FLAP

1- Before the radio program, the DJ checked the **clarity of the recording**.
2- When I had surgery, I experienced an extended **hospital stay**.
3- Where is Charles? **Is he on duty?**
4- You've got a **Hello Kitty jacket** for Christmas.
5- I'm the consumer they are **marketing to**.
6- The highest score I got **out of fifty** was 48.
7- He couldn't succeed so he **needed a tutor**.
8- I'm simply bored **if I can't be stimulated in a conversation**.
9- **All residents living there created a webpage** called "my world".
10- The student was in the hall when **the shooting happened**.

ELISION

1- He says today seems **bright and beautiful**
2- Literacy is closely bound to **information and vice versa**.
3- I don't think she can cope with **fast speech**.
4- Are you looking for **bed and breakfast** kind of place?
5- I'm so happy to be here. Because it's **calm and cool**.
6- Have you checked the **assessment results**?
7- I got her e-mail and phone number so **we can contact with each other**.
8- Having a lot of listening practice is **important for speaking**.
9- I was so impressed by their kindness and I **thanked them**.
10- Take your time before **you pass your judgment**.

LINKING

1- I was also in the class when the **chat took** place.
2- Obviously, it takes time to **get through** tough times.
3- According to the board, you will **contribute to** the future direction of the organization.
4- If you wish to run for election, **submit an application** about your experience.
5- When two or more PCs are connected, **peer to peer** network is created.
6- Some tools make it easy to **keep track** of time spent on a test.
7- Right now? I'm **getting prepared** for tomorrow's test.
8- In your opinion, what can we **do to** slow this global warming?
9- The researcher found solutions to the **problem through** the experiment.
10- He couldn't **stand for** the loud voice and just said "stop crying!"

APPENDIX E Discrimination Task (Pretest & Posttest)

There are 15 items in the following. You will hear two sentences from a speaker for each item. If the meanings of the two sentences that you hear are exactly the same in each case, mark on the "same" , tick on the opposite one if their meanings are different from each other.

Speaker 1	Speaker 2	Same	Different
1-This experience'**s gonna** be hard.	This experience **is going to** be hard.		
2- I wonder if this is the **kind you** are interested. /d/	I wonder if this is the **kind you** are interested. /ch/		
3- I know it's hard but I think that things will **settle** down. (/d/	I know it's hard but I think that things will **settle** down. /t/		
4- I wan**t** him to study another language.	I wan**t** him to study another language.		
5- A waiter **cleared away** dirty dishes from the table.	A waiter **cleared away** dirty dishes from the table.		
6- It's late! We'**ve gotto** go.	It's late! We **have to** go.		
7- The assistant will **lead you** to the office. /ch/	The assistant will **lead you** to the office. /d/		
8- I suppose everything is **buttoned** up.(/d/	I suppose everything is **buttoned** up. /t/		
9- If you're not willing to talk, just ignore **h**im. (delete the /h/ sound)	If you're not willing to talk, just ignore him. (no deletion of the /h/ sound)		
10- How's your mother **coming along** after her operation? (link the words together)	How's your mother **coming along** after her operation? (utter the words separately)		
11- I guess **there's** a long line at the student cafeteria now.	I guess **there's** a long line at the student cafeteria now.		

12- Welcome to our house and le**t m**e show you around first. (say “lemme”)	Welcome to our house and le**t m**e show you around first. (say let me)		
13-My doctor says my headaches are **related** to stress. /t/ sound in related	My doctor says my headaches are **related** to stress. /d/ sound in related		
14- My schedule is tight **and** tedious (delete d sound)	My schedule is tight **and** tedious (say and clearly)		
15- The airlines may **leave off** the passengers if they are too late to board. (say together)	The airlines may **leave off** the passengers if they are too late to board. (Say separately)		

APPENDIX F Reduced Forms Dictation Task (Pretest & Posttest)

1- I think (**-----)** be able to get a better job soon. (I'll)

2- I know you had some failures but It hasn't (------) (-----) at all (stopped you)

3- Student was at the hall when the **(-------)** happened. (shooting)

4- I'm afraid I cannot can cope with (-------) (-------). (fast speech)

5- Could you **(--------) (--------)** this sofa? I don't need it any more. (take away)

6- I wish I knew her problem before. I **(--------) (--------)** my best to solve it. (would've done)

7- If you have a part time job, it will (--------) (------) financially. (comfort you)

8- He couldn't succeed so he **(--------) (--------)** .(needed a tutor)

9- Just click on the link for more (---------) (--------) .(hints and tips)

10- I was also in the class when the **(-------) (--------)** place. (chat took)

11- Please, talk to an immigration attorney to see if **(-------) (------)** around this. (there's a way)

12- When I hear the news, I'll **(-------) (-------)** know(let you)

13- All residents living there **(--------)**a webpage called "my world". (created)

14- I'm so happy to be here. Because it's **(-------) (------) (-------)** .(calm and cool)

15- You need to prepare a checklist for the trip in the (-------) (-------) week ahead.

APPENDIX G Reduced Forms Listening Comprehension Test (Pretest & Posttest)

1- (woman):Excuse me your car is blocking my driveway, and I need to go to the store.
(man) Oh, I'll move it rigt away. (linking)
(narrator) What will the man probably do?
a) drive the woman to the store
b) move the woman's car
c) get this car out of the woman's way
d) park his car in the driveway

2- (woman):I've got a recipe for garlic and hot peper chicken dish. Want to try it tonight with a green salad?
(man):You know my stomach's a little on the edge; I'd prefer something bland.

(narrator):What does the man mean? (contraction)
a) He agrees with the woman's choice.
b) He doesn't want spicy food.
c) he wants the salad to be fresh
d) Garlic is his favorite flavor

3- (woman):Somebody's been leaving this door unlocked.
(man): Don't look at me!
(narrator):What does the man mean? (contraction)
a) He's not the one to blame.
b) Somebody just left
c) he has been looking for the key
d) Somebody's knocking at the door.

4- (woman):The radio says there may be snow today. You'd better grab your boots, just in case.
(man):I was planning to do just that.
(narrator):What will the man probably do? (elision)
a) wipe the snow off his boots.
b) turn on the radio
c) unpack his suitcase
d) take his boots with him.

5- (man): It's too bad you didn't tell me the news about Professor Tompkins earlier.
(woman):I only found out myself just now.
(narrator):What does the woman mean? (linking)
a) She doesn't think the news is bad.
b) She heard the news quite recently.
c) She is the only one who has heard the news.
d) She found the newspaper article earlier.

6- (man): Hi Cindy. Welcome back! Did you take many pictures on your vacation?

(woman):Thanks. Yes, I must've taken a million of them
(narrator): What does the woman mean? (contraction)
a) She took a lot of photogaraphs.
b) She'd like to take any more vacations.
c) She missed taking many of the pictures she wanted .
d) She spent too much money on her vacation.

7- (woman): It's going to be expensive to take the train to Chicago. Have you seen the rates?
(man):Yes. I think we'd be better off driving.
(narrator): What does the man mean? (contraction)
a) driving would be cheaper than taking the train.
b) the train faster than travelling by car.
c) they should cancel the trip
d) it would be a good idea to start driving early

8- (woman): Did you know that Susan has three exams next week?
(man):I guess that would account for her spending so much time in the library lately.
(narrator): What does the man say about Suzan? (elision)
a) She's studying for an account exam.
b) She's been working in the library a lot.
c) She'll be going to the library after her exams.
d) She has mor exams than he does.

9- (woman): It's really cold in this apartment, can we turn up the heat?
(man): No, my last fuel bill was so high, I had trouble paying it. Would you like a sweater?
(narrator): Why does the man refuse the woman's request? (flap)
a) He's already too hot.
b) He hasn't received a fuel bill yet.
c) he can't afford to turn the heat up.
d) He has no more sweaters.

10- (man): I think I'll play some golf today.
(woman):But I thought you were going to work on the car.
(narrator): What does the woman imly the man should do? (assimilation)
a) drive to work.
b) go to the golf course.
c) try to fix the car.
d) take care of himself.

11- (man): Arthur's farewell dinner is this weekend.
(woman):Wish I could take time out for it
(narrator): What does the woman imply? (linking)
a) she probably won't go to the dinner.
b) she doesn't know what time the dinner is.
c) the dinner won't last too long.

d) it's time that Arthur retired.

12- (woman): The telephone rang several times while I was home this morning, but I couldn't get to it.
(man):That's too bad; I was going to invite you to lunch.
(narrator): What does the man mean? (assimilation)
a) He'll telephone again at lunchtime.
b) He didn't have time for lunch.
c) He had wanted to ask the woman out.
d) He didn't have the woman's phone number.

13- (woman): I can meet you at work if you'd like.
(man):I'm off today. Do you know where I live
(narrator): What does the man imply? (linking)
a) He lives near the woman.
b) The woman should come his house.
c) the woman should take today off.
d) he can't keep their appointment.

14- (man): I can't figure out how to put this bookshelf together. Could you give me hand with it?
(woman): Just let me finish straightening up the kitchen first.
(narrator): What can be inferred from the conversation? (linking)
a) The bookshelf won't fit in the kitchen.
b) The man will give the woman some books.
c) The woman will help the man soon.
d) The man doesn't know where to put the bookshelf.

15- (man): I must have started this letter to the editor a dozen times and I still don't know what to say.
(woman): Well, stick with a little longer and see what happens.
(narrator): What does the woman suggest the man do? (linking)
a) Put a stamp on his letter.
b) Make his letter shorter.
c) Keep working on the letter.
d) Send the letter as it is.

16- (woman): Do you feel like having seefood tonight?
(man): After that luch, I'm not sure I can eat anything!
(narrator): What does the man mean? (linking)
a) He's very hungry.
b) He doesn't lie fish.
c) He doesnt't have much appetite.
d) He likes to eat most things

17- (woman): I'd like to get a part time job this semester since tuition's gone up so much.

(man): That makes sense. Just make sure you don't get in over your head; we're here to go to school after all.
(narrator): What can be man suggest the woman do? (linking)
a) Find a part time job as a tutor.
b) Meet him after work to study.
c) use her salary to pay the tuition.
d) Allow herself plenty of time for studying.

18- (man): I brought back your astronomy book- I thought you might be able to use it on your project. Sorry I kept is so long.
(woman): I was wondering where that book was!
(narrator): What does the woman imply? (assimilation)
a) She wanted the man to read the book.
b) She no longer needed the book.
c) She had been looking for the book.
d) She thought the man's book was wonderful.

19- (woman): Thanks for making my coffee this morning.
(man): I figured you'd need it to get you going after a day like yesterday.
(narrator): What does the man imply about the woman? (contraction)
a) She had a hard day yesterday.
b) She needs to make more coffee.
c) She drinks too much coffee.
d) She wasn't able to see him yesterday.

20- (man): These mosquito bites are killing me. I just can't stop scrathing.
(woman): Next time wear long sleeves when you work in the garden.
(narrator): What can be inferred about the man? (linking)
a) he used insect spray to control the mosquitoes.
b)He was wearing short sleeves when he got bitten.
c) He finds working in the garden relaxing.
d) Some plants in the garden irritated his skin.

21- (man): What a concert that was! You must be feeling pleased wit yourselves.
(woman): We are, and judjing by the amount of applause, everybody appreciated it.
(narrator): What does the woman mean? (elision)
a) The audience seemed to like the concert.
b) She was satisfied with her seat.
c) More people attended the concert than expected.
d) She was pleased to be asked to perform.

22- (woman): I'm soaked! It started to pour the minute I got off the bus.
(man): Well, change into something dry while I make you a cup of hot tea.
(narrator): What happened to the woman? (elision)
a) She got caught in the rain.
b) She took the wrong bus.
c) Some tea spilled on her.

d)Her laundry didn't dry.

23- (man): Professor Anderson suggested I get a tutor for calculus.
(woman): Well, it surely couldn't hurt.
(narrator): What does the woman mean? (contraction)
a) The tutor wasn't seriously hurt.
b) She could tutor the man in math.
c) It's a good idea to get a tutor.
d) She's sure Professor Anderson is a good tutor.

24- (woman): I read about your promotion in the newspaper. You must be very pleased.
(man): To be honest, I can take it or leave it. The new office is nice, but the workload has doubled.
(narrator): What does the man imply? (contraction)
a) He doesn't like the newspaper job.
b) He isn't enthusiastic about his job.
c) He'll leave his job if he's not promoted.
d) His job is going well.

25- (woman): Do you know who took this message from Donald? I can hardly read it.
(man): It wasn't me. I think it might've been Laura.
(narrator): What does the man mean? (contraction)
a) Laura probably spoke with Donald.
b) He'll give the message to Laura.
c) He took a message for Laura.
d) Laura wasn't able to reach Donald.

26- (man): What did you think of the article we had to read for physics?
(woman): It got off to a promising start, but the conclusions were unfounded.
(narrator): What does the woman mean? (flap)
a) She promisses to help the man learn physics.
b) She can't find the article she has to read.
c) She found the conclusions to be very promising.
d) She disagrees with the article's logic.

27- (woman): Christine's been frantic. She has to get all her paintings from Johnson's class framed in time for the exhibition next week.
(woman): Didn't she know about the exhibition at the beginning of the term?
(narrator): What can be inferred about Christine? (assimilation)
a) She doesn't know much about painting.
b) She should have started sooner.
c) She ought to know when the class begins.
d) She worries too much.

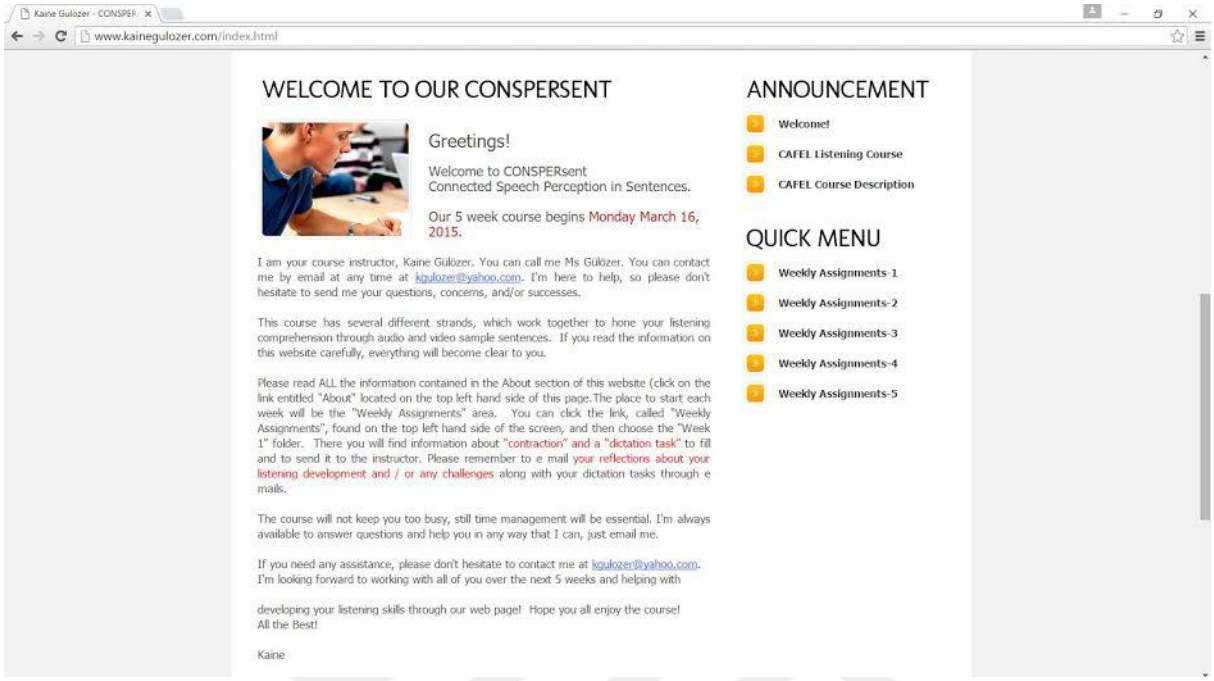
28- (man): What do you think I should name this kitten I found?
(woman): If I were you, I'd find a new home- you know the dorm rules.
(narrator): What does the woman suggest the man do? (contraction)

a) Learn more about caring cats before bringing one home.
b) Choose a good name for the kitten
c) Give the cat away since he can't keep it.
d) Keep the kitten in his dorm room.

29- (woman): Don't you think it's strange that we haven't started receiving any mail here yet?
(woman): Well, sometimes it takes a while for the post office to forward it. I'm sure it'll come soon.
(narrator): What can be inferred about the speakers? (elision)
a) They don't usually get much mail.
b) They just moved to a new address.
c) They pick up their mail at the post office.
d) They are looking forward to receiving the letter.

30- (man): I really enjoyed that movie you've been raving about.
(woman): Oh, so you went to see it afer all.
(narrator): What had the woman assumed about the man? (contraction)
a) He goes to every movie thatcomes out.
b) He would go with her to the movie.
c) He had already seen the movie.
d) He wasn't going to go to the movie.

APPENDIX H. The Interface of the Welcoming Note for RFsI



APPENDIX I Reduced Forms Instruction: General Introduction

CSFs	
Contraction	
Assimilation	
Flapping	
Elision	
Linking	

GENERAL INTRODUCTION:

Sound perception across the board is by far the most crucial part of learning a second language. For any learner of English, being familiar with speech modification patterns in American English will help the language learner to recognize the words in an idea unit that would, before, have sounded to one like a perplexing stream of blurred sounds. As we will examine in the following treatise, the difference between vocalizations within a word and across word boundaries make a huge difference in how the sound in an idea unit is perceived. Because words seem to run together in a stream of speech, idea units of sample sentences will be highlighted so that the learner can know the connection between modifications in a stream of speech and intricacy in the change of sounds as spontaneous speech.

In this audio program, the purpose is to motivate students to recognize connected speech features in natural speech through targeted sentences. The features that will be presented include contractions, assimilation, flapping, elision and linking, respectively.

A ***contraction*** is considered to be the short form of the more formal long form of auxiliary words or modal verbs such as “are not” ➔aren't , “cannot” ➔can't.

Assimilation is a process whereby speech sounds become similar or identical to neighboring sounds.

Flapping is a process whereby articulation is created by a single, quick touch of the tongue against the teeth or alveolar ridge such as in the word “literature,” which turns into a “d” sound.

Elision relates to the process which results in the disappearance of a sound in a word, where in most cases the vowels are the first to be elided. A good example is the word “interest” or “asked.”

Some suggested links regarding phonetics and phonetic transcriptions:

http://ipa.typeit.org/full/http://www.uiowa.edu/~acadtech/phonetics/english/english.html

APPENDIX J Lesson Plan:Week 1-CONTRACTION

Class: Listening and Speaking – Yıldız Technical University

Students: Preparatory students

Language Level: Pre-Intermediate

Activity name: Gap filling

Duration of the activity: 3 minutes for pre listening, 20 minutes for while listening, and 7 minutes for general discussion about the sample contractions.

Short description of the activity: Teacher writes some contracted sentences along with uncontracted sentences on the board, and then let the students see how they differ in pronunciation. The focus is to raise the awareness of articulation in contracted forms, practice of accurate perception, and stressed and unstressed form in a natural speech.

Materials and handouts: initially prepared and recorded sentences, pen, paper, board marker, projector, computer, loud speaker.

Equipment and technology used in the activity: Computers; podcasts downloaded and tested before

Goal: Raising awareness of perception and vocalization of the following auxiliary words: be, will, would, have and had both in positive and negative forms such as “isn’t, aren’t, won’t, wouldn’t, couldn’t, haven’t, hadn’t”. Additionally, perfect forms of modals such as “must have, should have, would have, could have, might have”.

Objectives:

- Participants spell the contractions accurately.
- Students show their accurate comprehension of contractions delivered in sentence forms by filling in the gaps.

Classroom layout and grouping of students: This is a face to face classroom activity using whiteboard. In a classroom of 18- 22 students, sit in a circle or on their seats.

ANTICIPATED PROBLEM OF PERCEPTION:

The premise of this exercise relies on the fact that in most cases, students present with issues related to perceiving the sounds as a different word closest to the sound that they heard. The issues are related to perceiving the content words versus perceiving focus words. For example, when we say "I must've left my keys at home" – the students assume the sound is blended rather than two separate sounds. In this case, students simply miss the "must've" part while only hearing the word "left" or the word "keys." Another example is the sentence, "If I were you, I would've prepared for the exam earlier." In this case, "would've" is de-stressed but prepared is stressed - therefore students tend to miss the contraction altogether. These examples pertain primarily to quicker paced speech.

PROCEDURE:

PRE-LISTENING:

Last week, when I was speaking with a foreigner, I discovered that she always used contractions in her speech. A contraction means a shortened form of a group of words. Some letters are omitted and an apostrophe is used in written English when there is contraction. (e.g. "**what's** the matter?" the auxiliary verb "is" is contracted, and attached to the question word "what", omitting the "i" letter). However on some occasions, there is no apostrophe yet the word itself is short by itself. (e.g. gonna, wanna). It should be noted that contractions are primarily used in daily conversation and speech as well as in news and magazine articles – in addition to novels. Contractions make daily speech a whole lot more efficient and usage of this form is a lot quicker than formal use.

WHILE LISTENING:

While listening, it is imperative for students to recognize the differences in placement of the tongue as related to the palate. For example, in the word "should've" – the palate changes according to the sound. In this case, the long form "should have" is articulated as "should've" – we can see that on the "should" sound, the tongue is slightly curved and center while with the "ve" sound, the tongue is closer to the teeth when making that sound. For example, the sentence "I missed the bus, I should've left home earlier," demonstrates that "should've" is a blended sound /h/ and /æ/ becomes /a/ and connects to the verb before it, so - have becomes /əv/ so, in other words – "must have" becomes "must've or "might have becomes "might've".

In relation to the perception, we should also keep in our mind that content words are easier to perceive rather than that of the function words. Because function words (words that play a grammatical role, e.g. auxiliary verbs, prepositions, articles etc.) have shorter pronunciation, they tend to be more difficult to perceive. On the other hand, because content words (semantically richer words) take longer duration in pronunciation in natural speech, they seem to be easier to perceive by language learners. Let us take a look at the sentence given above again and see the content and function words:

"I missed the bus, I should've left home earlier"

As we see, the content words in this sentence are recognized as "left", "home" and "earlier" while the function word is recognized as "must've." This means that "must've" will not be stressed but the word "left" will be stressed in a stream of speech.

Another factor to realize in perception is the logical pause to given in a stream of speech. In the following sentence "**Life's a game** for everyone, but **love's the only prize**. The logical pause is given just before the connector "but". In the first part as the given chunk here is "Life's a game for everyone". It is also clear in the sentence that abbreviated form of "be", in other words, short form of "is" and the preposition" "for" are the function words and the rest of the words in this idea unit , "life", "game", and " everyone" are content words. In the second part of the same sentence "love's the only prize" the function words are the short form of be as "'s" and the article "the". Thus, the content words of this part are "love", "only", and "prize".

Please listen to the following sentences that include **contractions**. Pay attention to the **bold and underlined** parts. You can also listen to the following sentences as many times as you like.

◆Listen to the following contracted forms on its own.

Contracted form	**Long form**
Wanna	want to
Gonna	going to
Gotto	have to
have gotto	have to/need to

◆Listen to the following contracted forms in sentences both in long and short forms. Note that these contractions are used all subject pronouns.

1- I know **it is going to be / it's gonna** be hard!

2- Obviously, **you are going to/ you're gonna** give the report soon!

3- Trust them! **They're going to / They're gonna** finally make everything fair.

4- It's late. **We have to /We'vegotto** go!

5- **They are going to/ They're gonna** have a party soon!

6-That's too far away! **I don't want to/ I don't wanna** go there now!

7-My husband and I **want to/ wanna** have a real estate agency when we retire.

◆ Now listen to the following contractions with the auxiliary verb "be" as present and past forms **(am, is are, was, were/am, is are going to)**

1-Well, **I'm** sorry but **she's not** in right now. She **isn't** in the town this week either.

2-Well, **I'm** excited and my **mom's** coming.

3-We have to wait for the director because **she's** at the meeting right now.

4-**He's** a college professor, and **he's** in Colorado at the moment.

5-My birthday! **It's** coming up in a week.

6-I have to buy some shorts and sandals, **here's** really hot.

7-I'll give you a ride. **That's** the least I can do.

8-Luckily, **there's** information about after- sales service.

9-**Weren't** you supposed to get a report card sometime this past week?

10-"**Wasn't** That a Mighty Storm" is an American Folk song.

◆ Now listen to the following contractions with the auxiliary verb in simple present tense. **"don't", "doesn't"** and **"didn't"**

1-A movie today? Well, I **don't** know.

2-Going to the doctor again! Oh no! I **don't** want to hear it.

3-Surely, He **doesn't** think having a student credit card is bad idea.

4-Reindeer probably **don't** eat cookies

5-Honestly, I **don't** have room in my suitcase to pack.

6-I think I can eat anything you cook, I am so hungry so it **doesn't** matter what meal I eat.

7- A very nice apartment! You **didn't** build that, did you?

8-I really **didn't** know that we could leave home this early.

9-Windows XP **doesn't** enable TCP window scaling.

10-This article **doesn't** claim to be the first to solve the problem.

◆ Now listen to the following contractions with modal verbs **"will/ won't"**, **" can/ can't""would / wouldn't", "shouldn't", "mustn't", "would prefer", "would rather", "would mind"**

1-I know that she **can't** drink mushroom soup

2-I guess the teacher **can't** remember all the names this being the first day of school.

3-I'm afraid **I'll** be a little late to the match tomorrow night.

4-I think it's going to rain so **we'll** just wait and get an umbrella later on.

5-Do you know when **she'll** be back? No, **that's** what **we'd** like to hear as well.

6-I'm really hungry! **I'll** go to my house to pick up some food before heading to the game.

7-They're late but **they'll** probably take some snacks before coming. Then, **I'll** have to sleep in the car! Or I **won't** go to the game at all.

8- Our fax machine's being repaired right now, **it won't be working** tomorrow either.

9-While going to the mall, **I'll** drop by the post office and mail the letter.

10-If you were me, **how'd** you have your soup here, with spice or not?

12-Just wear you blue suit. **You'll look** great!

11-I'm afraid **I wouldn't** like to drink cherry juice. Instead, **I'd rather** have apple juice.

12-Do you like the song **"Wouldn't** Change a Thing" by Demi Lovato?

13- I **wouldn't** mind him staying, if he helped around the house.

14- To me, appearances **shouldn't** matter, but I don't know.

◆ Now listen to the following contractions with the auxiliary verb in present perfect tense or a part of a modal such as **"had better""have/has"** , **"haven't/ hasn't", and "had/ hadn't".**

1-I'll have to look after my mom since **she's been** sick recently.

2-I'll definitely not go see that movie. **I've already seen** it many times.

3- Do you know that **I've decided** to look for a new place?

4-The commission **hasn't** released the results yet, so I **haven't figured out** what to do.

5-Are you kidding? **I've always been interested in** gardening.

6-Classes have been really hectic, and **I haven't had time** to rest.

7-**They've been looking forward to** their wedding anniversary. They can't wait for the big party.

8-The taxi is about to come. **I'd better leave** home now

9-Thank you for introducing me to your aunt. In fact, **I've met** her before.

10-Sorry for my curiosity, but **haven't you seen** that movie before.

◆ Please listen to the following contractions with perfect modal verbs both in positive and negative forms such as **"must have/ must've", "would have / would've" ,"could have/could've", "should have/ should've", "might have/might've".**

1- That's very true! **I would've helped her** then.

2- Well, she **must've gotten lost**.

3- You knew that you **could've come earlier.**

4- Surely, we **should've learned better.**

5-If you had told them beforehand, **They could've helped** us a lot.

6-I missed the bus this morning. I **should've set** my alarm clock.

7-Even though the lights of the room are on, she hasn't opened the door. She **might've forgotten** about the lights before leaving home.

8- Well, they are still lost, so they **mustnt've heard** us correctly.

9- Most probably, I **couldnt've known** that he would be so late.

10- It seems that we **shouldnt've told** you about her illness.

POST LISTENING:

◆ Please listen to the following contractions and complete the missing parts given in sentences. Note that not only contractions but also words are missing in the following sentences. After listening and writing your answers, check if they are correct.

	Sample sentence &**Target idea unit**	Pron of the target idea unit
CONTRACTION	1-I think ……..	**she's gone to the wedding ceremony**
	2-If you were him……?	**how'd you like to do**
	3-Okay,……! And …….set!	**I'm , my alarm's**
	4-I bet ……..soon!	**there'll be a big party**
	5-…….what you are saying.	**I can't believe**
	6-……our camp out for a while.	**I've been looking forward to**
	7-…….a furnished apartment.	**I'd prefer to rent**

POST LISTENING:

◆Listen to the key contractions and following sentences:

As a post listening tool, students should possess a methodology for sound comparison and vocalization practice that is logical and can be utilized for self-correction purposes.

A: Are you looking for an apartment to buy or to rent?

B:Well, both..

A: If **you'd like** to rent, **there's** an apartment complex across the street that seems to have a few vacancies. And if you'd like to buy, **what's** your budget like?

You always seem so busy. **What's** your usual day like?

A: Hi Jim, I heard that you moved to a new apartment. I think **that's** exciting! **How's** your new apartment working out?

B:Well, **nothing's** set yet!

A: Oh, **That's** not what **I'd like** to hear! **What's** the problem with the new place then?

A:Oh! **Where's** my bag? Oh no and Where's my credit card?

B:Do you think **they're** here?

A: Ok, got them. **They're** little far from there.

APPENDIX K Lesson Plan: Week 2 ASSIMILATION

LEVEL: PRE-INTERMEDIATE

PURPOSE:

The purpose of this exercise is to raise awareness of assimilation vocalization in relation to two types of assimilation: **anticipatory assimilation** where one sound changes to another because of the sound that follows and **coalescent assimilation**, where two sounds combine to form a different one. Additionally, articulation features may be hindered from a *preceding* segment, and the articulators *lag* in their movements, For instance, when we pronounse the following idea unit "*on the house" as* /ɑn ðə 'haʊs/ in slow manner while we utter as /ɑn nə 'haʊs/ in a fast manner of speech. This is what we call **lagging assimilation**.

PRE-LISTENING:

Assimilation is the act of influence when neighboring sounds, especially the ones across word boundaries, become similar or the same in spontaneous speech. It might happen within words as well. In rapid speech, native speakers of American English tend to pronounce *ten bucks* as though it were written *tembooks*. Let us have a look at the phonemes involved, we get /tɛn/ and /bʊks/ . If we place the words into a sentence (for example, *I'd like to borrow ten books, please?*), we notice that /n/ phoneme at the end of "ten" does not sound like it does in the word said on its own. If you try articulating the same sample question a few times over, you will realize that the tongue absorbs and combines the /n/ sound at the end of ten and /b/ sound at the beginning of book. Rather than having a proper articulation of the above given phonemes, we employ an economy of effort, and assimilate /n/ into /m/ sound. As a result, we hear *I'd like to borrow* / /tɛmbʊks/, *please?*

ANTICIPATED PROBLEM OF PERCEPTION:

When we prepare our articulators for the incoming sound across the words in a sentence, certain sounds are absorbed or modified into others. Then two possible words nest to each other are assumed to be only one word that causes listener to search the meaning of the word in their mind. For instance, let us have look at the following three sentences:

1-Can you see tha**t b**ook over there? (/t/ assimilates to /b/)

2-Where'**sy**our jacket? (/s/ assimilates to /ʃ/ as in **sh**ock)

3-Who's goo**dg**irl, then? (/d/ assimilates to /g/).

In brief, the change of phonological pattern in both type of assimilation will be apparent through the samples of spontaneous speech in the following:

WHILE LISTENING:

◆ Listen to the following samples of assimilation. Note that there are certain sounds "/t/, /d/, /n/, /s/, /z/" to be assimilated to. In many cases there is a two-way exchange of articulation features. The category and the sample sentences are given below:

◆The phonemes /t/, /d/ and /n/ becomes bilabial before bilabial consonants /p/, /b/ and /m/ .

1-I need a sheet of whi**tep**aper. (/t/ assimilates to /p/).

2-He's a very goo**d b**oy. (/d/ assimilates to /b/).

3-It would be great if you fi**t m**e in. (/t/ assimilates to /m/)

4-Can you see the fa**tb**oy?".(/t/ assimilates to /b/)

5-There are te**n m**ails in the box. (/n/ assimilates to /m/).

◆The phoneme /t/ becomes /k/ before /k/ or /g/. The phoneme /d/ becomes /g/ before /k/ or /g/.

1-Where has tha**tc**ookie been? (/t/ assimilates to /k/).

2-Can you call tha**tg**irl right here? (/t/ assimilates to /k/)

3- We truly hope to welcome you at a goo**dc**onference. (/d/ assimilates to /g/)

4-We provided reasonably goo**dg**rain. (/d/ assimilates to /g/)

5-I'm glad that she coul**dc**ool down soon .(/d/ assimilates to /k/)

◆ /n/ can become /ŋ/before /k/ or /g/

1- I've bee**ng**oing jogging a lot recently.

2-He's bee**ng**uarding the building for several years.

3-Have you bee**nc**ooking the meal?

4-I think you ca**nc**all her anytime you like.

5- We're using our ow**n c**omputers.

◆ /s/ can become /ʃ/ before /ʃ/ or /j/.

1- You look nice. I love thi**s sh**iny shirt.

2-I'll be happy to lend you some money as long a**sy**ou pay me back in two weeks.

3- How wa**sy**our day?

4- You will not be able to solve the problem unles**sy**ou know the correct formula.

5-"Please tell me!", "Where'**ss**he?"

◆z/ can become /ʒ/ before / ʃ/ or /j/

1-Can you rai**sey**our glass?

2- He is the boss, a**s y**ou know, and he always starts meetings on time.

3-He always chair**sy**our meetings.

4- We found this little chee**sesh**op in Amsterdam.

5-We couldn't see ourselves working on crui**sesh**ips any more.

◆Below are the sample sentences of coalescent assimilation: the type when two sounds are combined and a new form of sound is constructed. /t/ and /j/sounds coalesce to form /tʃ/ as in the following sentences:

1-Why mus**t y**ou always dress in black?

2-Not hungry? I'm surprised tha**t y**ou ate something

3- I was surprised to hear this from a teacher. "How do you want me to trea**t y**ou?"

4- I bough**t y**ou a necklace.

5-That's sad! Didn**'t y**our parents help you out with your college tuition?

◆Below are the sample sentences to change the /d/ and /y/ sounds into a /ʤ/ sound:

1-Woul**dy**ou mind closing the door please?

2-The teacher says: "Are you ready? I'm gonna **read you** a paragraph!

3-- Okay, I will certainly **remind you!**

4--Don't worry! I'll **hold you** while you are stepping down the stairs.

5-She's quite untidy about the house; **mind you**, I'm not much better.

POST LISTENING:

◆ Please listen to the following assimilation and complete the missing parts given in sentences. Note that not only assimilations but also words are missing in the following sentences. After listening and writing your answers, check if they are correct.

	Sentences	Key
ASSIMILATION	1-I'll leave the office in…….	**ten minutes**
	2-I'll not question you, …….question me.	**Unless you**
	3-……..have parked somewhere else?	**Shouldn't you**
	4-I'll…….go early today.	**let you**
	5-We're playing pools with……..	**ten balls**
	6-This is the student that came out …….	**last year**
	7-You have a sort of critical eye on issues ……..get older	**as you**

APPENDIX L Lesson Plan: Week 3- FLAPPING

LEVEL: PRE-INTERMEDIATE

PURPOSE:

The purpose of this exercise is to raise awareness of flapping vocalization in relation to the turn of the /t/ phonemes into /d/ when this sound occurs between two vowels, and when the second vowel is unstressed.

PRE-LISTENING:

In American English, there is a true /t/ and a flap /t/ that is articulated as /d/ sound. The true /t/ can be heard in words such as "**t**rue", "s**t**op", "work**ed**". As we see, the true /t/ can exist at the beginning of words, either alone or with another consonant, or at the beginning of a stressed syllable as in "return". However, the flap /t/ in other words the /t/ sounds modified to /d/ can be seen as "butter", "later", "fattest", "total". This is the sound articulated by a single, quick touch of the tongue against the teeth or alveolar ridge. In American English, people do not say "wa**t**er" but "wa**d**er", or not "li**t**erature" but "li**d**erature". The flap /t/ can also be utilized across sentence boundaries. For example in the following sentence, "If you ea**t** it, you better burn i**t**". The /t/ phoneme both as content word of "eat" and function word of "it" is the flap /t/.Additionally, flap /t/ is vocalized in some cases of past forms of the verbs such as "voted, articulated, created, and treated" etc.

ANTICIPATED PROBLEM OF PERCEPTION:

Most listeners will have difficulty in identifying the sound in regard to whether the sound is true /t/ or flap /t/. For example, in a spontaneous fast utterance, "Now, let's star**t** with the wri**t**ing activi**t**y". We articulate the flap /t/ in the words "start", "writing" and "activity". When the flap /t/ sound is uttered in several words within one sentence, learners will get confused if they are not aware of the utilization of the flap /t/ sound. In fact, they might even assume that there is a word in a sentence that they do not know the meaning due to the two way of vocalization of the /t/ sound. Yet once, their awareness is raised about this type of sound modification they will be able to perceive the difference between true /t/ and flap /t/ happens.

WHILE LISTENING:

◆"In many cases the /t/ phoneme is in the middle of a word of a phrase. /t/ sound becomes /d/ sound as in **d**eer. Please listen to the following samples sentences in which highlighted words include the articulation of flap /t/. In some words double /t/ letters articulated as /d/ sound in others only one /t/ sound turns into /d/ sound.The examples below cover the flap /t/ only with one "t" letter within a word.

1-There is a **possibility** that it will rain tomorrow.

2- The vocabulary in this paragraph is **notably** similar to the other one.

3- Do you know how to tackle the tools if you're not an **artist**?

4- People tend to spend an **unlimited** amount of money on anything.

5-First we'll have a review of the previous **literature.**

6-They're staying in room **ninety** four.

7- We'll have **voted** for a Presidential candidate by September.

8-You can control your lives because it is your economic **liberty**.

9-Please take your time to look around now! We'll take some photos **later.**

10- I question my **ability** to finish a marathon at my age.

◆"In many other words, there have been double "t" letters in a word where we still pronounce as flap /t/. Please listen to the following samples sentences in which highlighted words include the articulation of flap /t/.The examples below cover the flap /t/ with double "t" letters within a word. However, it is important to note that /d/ letter with /d/ sound may also exist within a word. For example, in the following words "ridden, hidden, forbidden", /d/ phonemes are articulated as if they were flap /d/, yet they are not the samples that we will concentrate on at this very moment. Hence we need to beware when we hear flap /t/ versions as in "hidden on the back of the mirror" vs "hitten on the back of the mirror".

1- Wonderful! The city lights of Tokyo **glitter.**

2- As far as basketball is concerned, it's been **pretty** normal.

3- Many of his accomplishments were also historic, when he was **attorney** general.

4-He has spilled the tomato juice on the table cover, so the table cloth got **spotty**.

5-She cut $300,000 from the company's expenses, which went right to the **bottom** line

6-It was so windy that the newspapers in my hand **scattered** all around.

7- Love is like glass, it looks lovely, but it's easily **shattered**.

8-I think this device works with three **batteries**.

9-Given the runner's average performance, it is **admittedly** impossible for her to come in first.

10-If you want to pass your exam, you'd better change your **attitude**!

POST LISTENING:

◆ Please listen to the following sentences of flapping and complete the missing parts given in sentences. Note that not only flapped /t/, but also function words are missing in the following sentences. After listening and writing your answers, check if they are correct.

	Sample sentence	**Target idea unit**
FLAPPING	1-Please do not feel…….., we're all in the same team.	**isolated**
	2-She's a very smart, …….12 year- old -girl.	**manipulative**
	3- There is certainly a need for ……experimental studies of assessment studies.	**isolated**
	4-Medical scientists and researchers are trying to ---------- better understand cell development.	**better**
	5-The treatment is delivered in an effective ---------	**matter**
	6- Draw a line from the …….corner to the inner corner of your top lid from end to end.	**outer**
	7-I …… a friend in a crowd and stopped to talk.	**spotted**

APPENDIX M Lesson Plan: Week 4 -ELISION

LEVEL: PRE-INTERMEDIATE

PURPOSE:

The purpose of this exercise is to raise awareness of elision in relation to the /t/, /d/ and /h/ sounds within and across the word boundaries.

PRE-LISTENING:

Most native speakers of American English delete some phonemes in a word. The phonemes of /t/ and /d/ are often elided when they are placed in between two consonants. For example, the final /d/ sound has been elided from the word "ol**d** man". A phoneme can be removed from the beginning of a word which is called epheresis. For example, "about time" can be shortened to "bout time" in speech. The sound from the middle of a word can be removed such as the /b/ sound as in "su**b**tle". A syllable involving the phoneme /ə/, in other words, "schwa" in the middle of a word is also often elided as in int**e**rest, and ask**e**d. The phoneme from the end of a word can also be removed and known as apacopy. For example, /b/ sound in the word "thumb" is elided in speech. In most cases, vowels are the first to be elided. We will cover the examples of elision across the word boundaries as the elision of the sound /t/, /d/ and /h/ and /ə/ phonemes.

ANTICIPATED PROBLEM OF PERCEPTION:

When we omit a sound in a word, it might also be confusing in relation to the meaning. Yet we can have some logical assumptions and beware of the sound deletions while perceiving the stream of speech. For example, when we hear the statement "She sat next to the cauch". The /t/ phoneme of next is deleted into the /t/ in ***to*** so that it becomes /nekstə/. We logically know that she did not sit **necks** to the wall. Misunderstanding might happen when we hear the following statement: "I can**'t** keep straight all students' names this being the first day of school". It is also important to note that not all /h/ sounds are deleted in speech. For instance, the /h/ phoneme/ is not elided in the following sentence: "In the mountain, the heat and dust were so thick that you would have had trouble breathing".

Additionally, both elision and assimilation might apply at the same time. For instance, the word 'handbag' might be completely articulated as /hændbæg/. Yet, the sound /d/ is in a site where elision is possible, so the word could be pronounced as /hænbæg/. Furthermore, when the /d/ is omitted in articulation, it leaves /n/ in a position for place assimilation. So, we hear /hæmbæg/in

an assimilated form. Hence, we obviously realize that connected speech processes have the potential to influence perception or misunderstanding. In other words, is /hæmbæg/ a rendition of 'handbag' with elision and dealveolarisation, or is it simply 'ham bag'? In real life, the context and knowledge of the speaker's habitual patterns and preferences would help you to decide, and you would probably opt for the most likely meaning. So, in reality, we are rarely confused by CSPs [connected speech processes], although they do have the *potential* to cause misunderstandings."
(Rachael-Anne Knight, *Phonetics: A Coursebook*. Cambridge University Press, 2012)

WHILE LISTENING:

◆"In many cases the /t/ phoneme is elided in a stream of speech. Please listen to the examples below covering the elision of /t/ sounds across the word boundaries.

1- He was not able to eat anything for several days and he took his las**t** breath this morning.

2- Unfortunately we've learned that he got permanen**t** brain damage due to the accident.

3- I plan to make strawberry jam so I prepared the ingredien**t** list first.

4- His monthly expense is twen**t**y four percent of his monthly income.

5- Two males beat a man in an attemp**t** to rob him until a witness intervened.

6- The award went to a war corresponden**t**, who spent all his time in many countries.

7- You'll feel better if you enjoy every momen**t** of life

8-You wake up and you don'**t** look your best.

9-I'm afraid I jus**t** can't do that!

10-When you're looking tired, apply concealer where darkness and discoloration is mos**t** prevalent.

◆"In many cases the /d/ phoneme is elided in a stream of speech. Please listen to the examples below covering the elision of the phoneme /d/ across the word boundaries.

1- In life we all have ups an**d** downs from time to time.

2-We would like to book a room at a bed an**d** breakfast type of place.

3- Once he saw the dog running towards him, he escaped faster an**d** faster.

4- Remember that life is full of ups an**d** downs, without the downs, the ups don't mean anything.

5-Justin was so worried that his eyes were going back an**d** forth.

6- The gap between her front an**d** back teeth gives her a horsey look.

7- They shot the man without any kin**d** of warning.

8-I got a poor grade again, so I had to go through the practice tests over an**d** over again.

9- In a typical exam, some questions deman**d** more time.

10- They finalized the results after two- an**d**- a- half years studying for the project.

◆"In many cases the /h/ phoneme is elided in a stream of speech. Please listen to the examples below covering the elision of /h/ sound across the word boundaries.

1-Obviously, her thoughtful words speak volume about **h**er

2- All children are surrounding **h**er because they like her storytelling.

3- I'm afraid you made **h**im so confused by your attitude.

4-I saw **h**im depressed and I tried to help as much as I could.

5-People say he works so fast that **h**is hammer moves like lightening.

6- She asked her to look through **h**er phone.

7-Instead of writing the diary in the notebook, type your thoughts **h**ere.

8-There's a bar behind you so watch your **h**ead.

9-It was the first time we went there and the film was **h**aunting

10-I'm afraid I'd hate **h**im if he behaved me like that to me.

POST LISTENING:

◆ Please listen to the following sentences of elision and complete the missing parts given in sentences. Note that not only elided /t/, /d/ but also elided /h/ sounds are missing in the following sentences. After listening and writing your answers, check if they are correct.

	Sample sentence	**Target idea unit**
ELISION	1-We have much to feel …….. in our country.	**pride and unity**
	2- You can ask it to, here, as ……	**the management office**
	3- I think you have a…….	**wife and a child**
	4-You'll learn it through ……..methods	**simple and precise**
	5- Her mother …….very well	**raised her**
	6- It could be ……if it works.	**groundbreaking**
	7-You know that ……..you when you need.	**I'll hold**

APPENDIX N Lesson Plan: Week 5 - LINKING and the Review of all RFs

LEVEL: PRE-INTERMEDIATE

PURPOSE:

The purpose of this exercise is to raise awareness of linking vocalization in relation to the linking of consonant to consonant (CC), consonant to vowel (CV) and vowel to vowel (VV).

PRE-LISTENING:

Linking is referred to the act of joining two or more words together without giving any pause between them. Specifically, it is possible to merge several words together and sound as if they are all one word. We consider the final consonant or vowel sound of the first word with the word that comes after it in order to link them. For example, linking the words wake + up sounds like /waik + ʌp/ when we pronounce it word by word. Yet, native speakers of English link and articulate it as /wei kʌp/, sounding the final word, “up”, as “cup” in natural speech.

We should take into consideration that linking words depend on specific adjacent sounds where the words meet in the sentence. These sounds could be juxtaposition of consonant to consonant, consonant to vowel or vowel to vowel. In this regard, we should note the difference between vowel sounds and consonant sounds. Below is a table of English vowels and consonants as letters:

vowels	a			E			i				o				u									
consonants		b	c	d		f	G	h		j	k	l	m	n		p	q	r	s	t		V	w	x	y	z

In English, letter and sound correspondence is usually identical, but not always.

For example, the word "how" ends with:

- the consonant **letter**"w"
- the vowel **sound**"ʊ"

Here are some more examples:

	tough	**sorrow**
ends with the letter	H	W
ends with the sound	F	ʊ

	universe	**Honor**
begins with the letter	U	H
begins with the sound	Y	ɒ

Linking can be conducted in a variety of locations in a sentence as you can see in the following example:

Football ‿ is‿ played ‿ in ‿ most ‿ severe ‿ weather, but baseball ‿ games get ‿ called‿on ‿ account ‿ of ‿ rain**.**

As seen in the example**,** note thatwe do not link when we need to give pause after comma or a connecter.

ANTICIPATED PROBLEM OF PERCEPTION:

In a stream of speech, it might be difficult for listeners to know where one word finishes and the following word starts. For example “ice-cream” sounds the same as “I scream” because the consonant sound /s/ could be at the end of the first word or at the beginning of the second word. Apart from the perception problems of linking in an utterance, the repetition of the use of linking in natural speech will cause misunderstanding or overload on the part of the listener while listening to any kind of natural speech.

WHILE LISTENING:

◆ We’ll have some examples on how the words are linked with three distinct sound boundaries: consonant to consonant (CC), consonant to vowel (CV) respectively.

Sample Sentences for CC.

1- I was also in the class whe**n**the cha**tt**oo**kp**lace.

2-Obviously, it takes time to ge**tth**rough tou**ght**imes

3-According to the board, you wi**ll**contribu**te**to the futu**red**irection of the organization

4-If you wi**sht**o ru**nf**or election, submit an application about your experience.

5-Whe**nt**wo or more PCs are connected, a pee**rt**o pee**rn**etwork is created.

6-So**met**ools make it easy to kee**pt**rack o**f ti****mes**pent on a test.

7- Righ**tn**ow? I'm getting prepare**df**or tomorrow'**st**est.

8-What ca**nw**e do to slow globa**lw**arming?

9-The researche**rs**earched fo**r s**olutions to the proble**mthrough** the experiment.

10-He could**n't**sta**ndf**or the lou**dv**oice and just said "sto**pc**rying!"

◆Sample Sentences for CV

1-We'll take a look. Is it time to ca**sho**ut?

2-They didn't like the movie so they decided to lea**veea**rly.

3-I promised her do I'm afraid I can't sa**yi**t!

4-Do you really think that you want to tr**yi**t again?

5-You wouldn't believe this. Let me tell you what'**su**p.

6-It seems we have enough time and this conversation is going to g**oo**n.

7-It sounds great to help them but ho**wa**bout the rest of us?

8-If you feel that angry, just wal**ka**round the block with a cup of tea.

9-Whoever wins the presidential election will have to deal wi**thi**t.

10- Children's natural beauty take our brea**tha**way.

◆ When a word ends with a vowel like /iy/, /ey/, /uw/, or /ow/ is followed by a word beginning with a vowel.

In some cases articulation of linking, we need to add the sound of “w” or “y” between the words. For example: In the statement of “We‿often help her”, the first word ends in a long i and the following word begins with a short o. We add a “y” sound to link the words together, which sounds like “w**e^{y}‿o**ften”. In another example, we can use “w” sound to link words as in “go over”. In this example we add “w” sound between the words “go” and “over”, which sounds like “go^{w}over”. So how would you make sure if the vowels should link words with a *“y”* or “*w”* sound? In fact, it is a little hard to make the list of all the sound combinations, yet, it will be easily perceivable if you try using the fluidity with the neighboring sounds in the end of a word and in the beginning of the following word. In other words, a word ending with the letters w or y will always end in a vowel sound. Then, following word beginning with another vowel will be added a “*w”* or “*y” sound* in between the words. Let us see some examples of the addition of a “w” or a “y” sound:

1-“follow‿him!” is linked with a “*w”* sound.

2-“he‿always…” is linked with a “*y”* sound.

3-“You‿often…” is linked was a “*w”* sound.

When the “*w”* or “*y”* soundis not added between the words of articulation, the two words can get less clear.

Sample Sentences for VV

1-M**ay‿Ia**nswer?

2-D**o‿I s‿ee‿he**r?

3-The**y‿o‿we‿**him a lot.

4-His gre**y‿e**yes were open.

5-Wh**o‿i**s at th**e‿o**ffice?

6-W**e‿a**ll agre**e‿o**n this point.

7-Suddenly, h**e‿a**sked, “H**ow‿a**re you doing?”

8-As you know, w**e‿a**lways carr**y‿a**ll instruments

9-What’s th**e‿a**nswer?

10-You can tr**y‿a**nything.

POST LISTENING

◆ Please listen to the following sentences of linking and complete the missing parts given in sentences.

	Sample sentence	**Target idea unit**
LINKING (C+C)	1- There's ---------- ----------a in crayon.	**note written**
	2- When you are studying for an exam, work at an even pace, but---------- ----------.	**keep moving**
	3- In maths if it is hard to figure our word problems, you can ----------.	**make drawings**
	4- If you have ---------- ----------course, you should set your future goals on how to study.	**taken challenging**
	5-His words ---------- ----------in many ways.	**motivated captains**
	6- I had to call the card company to inquire about my---------- ---------.	**security code**
	7- This generation will not pass away before many things ---------- ----------.	**take place**

	Sample sentence	**Target idea unit**
LINKING (C+V)	1-It's really hard to say but he did ------- ---------- in his sleep.	**pass away**
	2- Before running in an ultra-marathon, he ------- ---------- the possibility of getting the sponsorship from his business.	**inquired about**
	3- Parents can hardly spot ---------- ----------in kids	**mental illness**
	4-Please do check the ---------- --------- the light house!	**bulb at**
	5- Current insurance practices --------- ----------.	**are unfair**
	6- Take a moment to think about ----------in the world.	**current events**
	7- The flu has ---------- --------- recently.	**spread around**

	Sample sentence	**Target idea unit**
LINKING (V+V)	1-The tagline of "simply 100 calories" on Chobani yoghurt a) -------- ----------to natural ingredients, yet the--------- ---------up doing the opposite.	**a) drew attention** **b) idea ended**
	2-your own professional development's important. Just try to---------- ----------!	**advance it**
	3- They felt more and more nervous as the day ---------- ----------.	**drew on**
	4- It's always clear that people ---------- ---------- X-ray results at hospitals.	**worry about**
	5-When I first a)--------- -----, it just b) --------- ---------.	**a) saw it** **b) blew away**
	6-He worked so hard all day, so he could not ---------- ----------for the movie.	**a) stay awake**
	7-He says he can ------ --------- it.	**really eat**

The Review of all five RFs.

Target Connected Speech Feature	**Characterization**	**Sentence**	**Target thought group**
Linking	**CC** **CV** **VV**	They are pretty young cause they seem to be in their mid to **late teens.** I think you **were never** inspected by an immigration officer. There may be an exception **that applies** to you.	**late teens.** **were never** **that applies**
Contraction		Please, talk to an immigration attorney if**there's**any wayaround this.	**there's**
Assimilation	**/tʃ/**	If you overstay that, they are not going to allow you to **adjust your** status.	**adjust your**
Elision	**h /elision** **t/ elision** **d/ elision**	Almost all local offices have **varying points of view.** You cannot get your green card in the US **if you last entered** without inspection. They seem to change, I mean, the term **inspection and admission.**	**varying points of view** US **if you last entered** **inspection and admission.**
Flap	**/t/ to /d/**	In Chicago, temperatures were expected to **bottom out** around minus 15 overnight Officials reported that the weather is expected to be **bitterly** cold on Monday	**bottom out** **bitterly**

Appendix O. Instruction Fidelity Form

Name:_____ Group:_____
The Feature:_____ Date:_____

Directions: Rate the instructior on each item giving the highest scores for effective performances. Place in the box before each statement the number that apropriately reflects your rating.

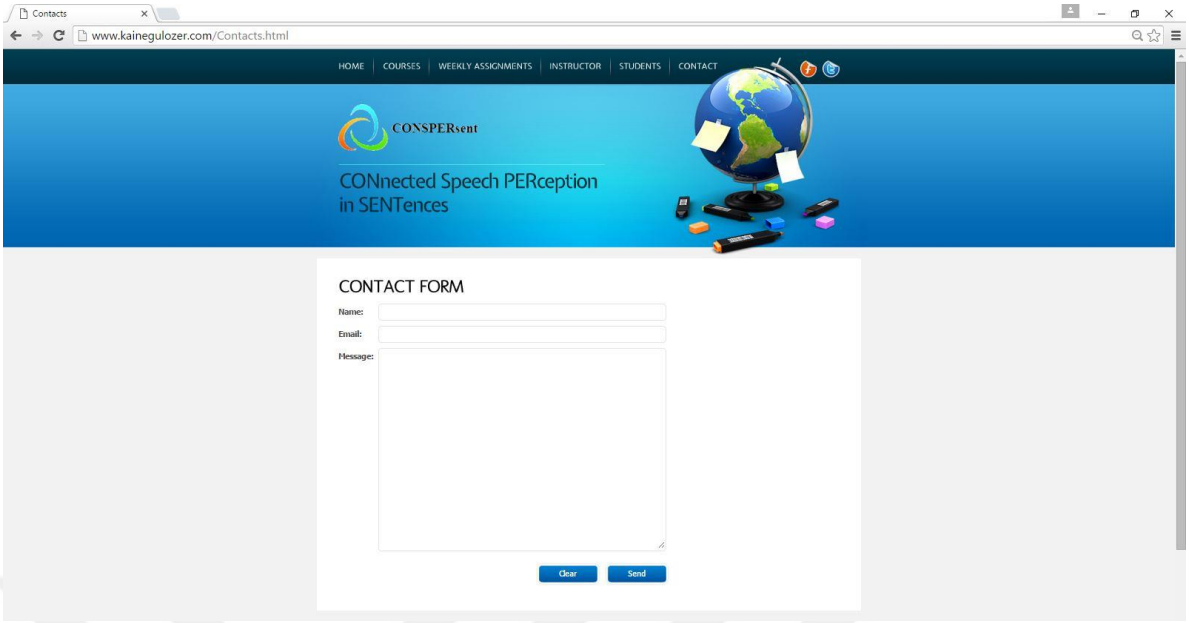
Excellent (5)	**Outstanding (4)**	**Good (3)**	**Fair(2)**	**Poor(1)**

☐Weekly agenda regarding the feature to be taught was posted on the webpage.

☐Lesson plan was evident
☐Objectives for the feature was made clear to students.
☐Adequte number of computers and headsets were available for each student.
☐Demonstration preceded practice exercises.
☐A variety of sentences for the featurewas introduced in manageable in sequential units.
☐Careful explanation of anticipated problem of perception was provided.
☐The featurewas taught explicitly by means of pre, while and post listening exercises.
☐Use of projector was integrated.
☐Error-correction was evident yet no overused.
☐Instructional adjustments were made based on progress monitoring.
☐Necessary introduction/ reviewwas provided for the feature to be taught.
☐The assignment for the following weekwas given.
☐Reflection reportswere reminded to students fill in.
☐The allocated time for the feature was aligned with the targeted duration.

APPENDIX P The Interface of the web page

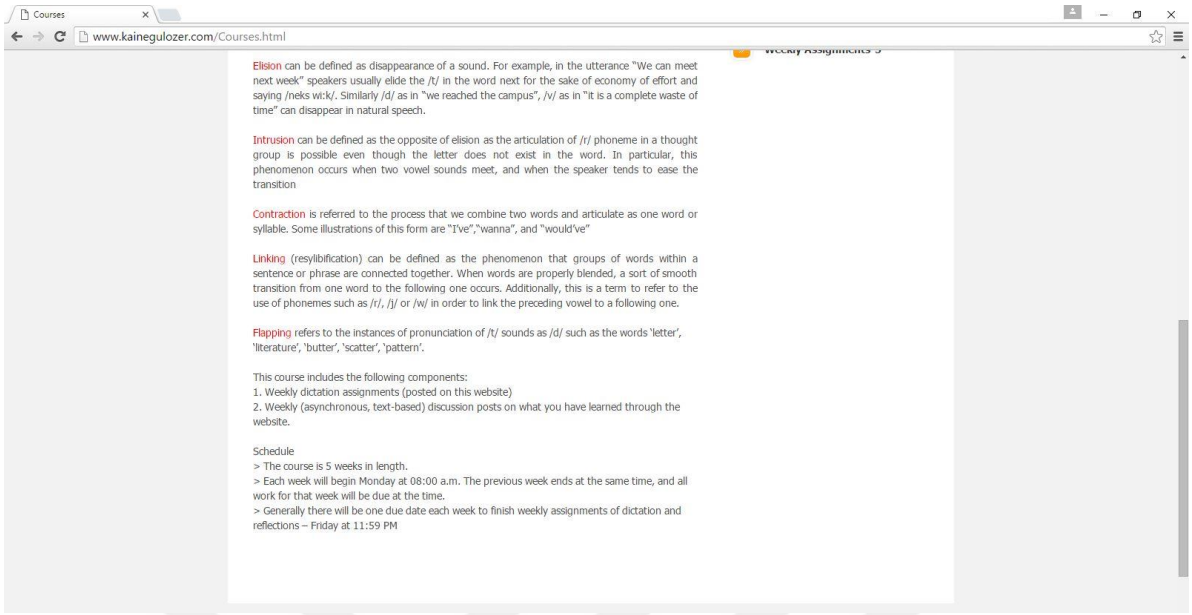
APPENDIX QThe Interface of the Enrollment to the Reduced Forms Instruction



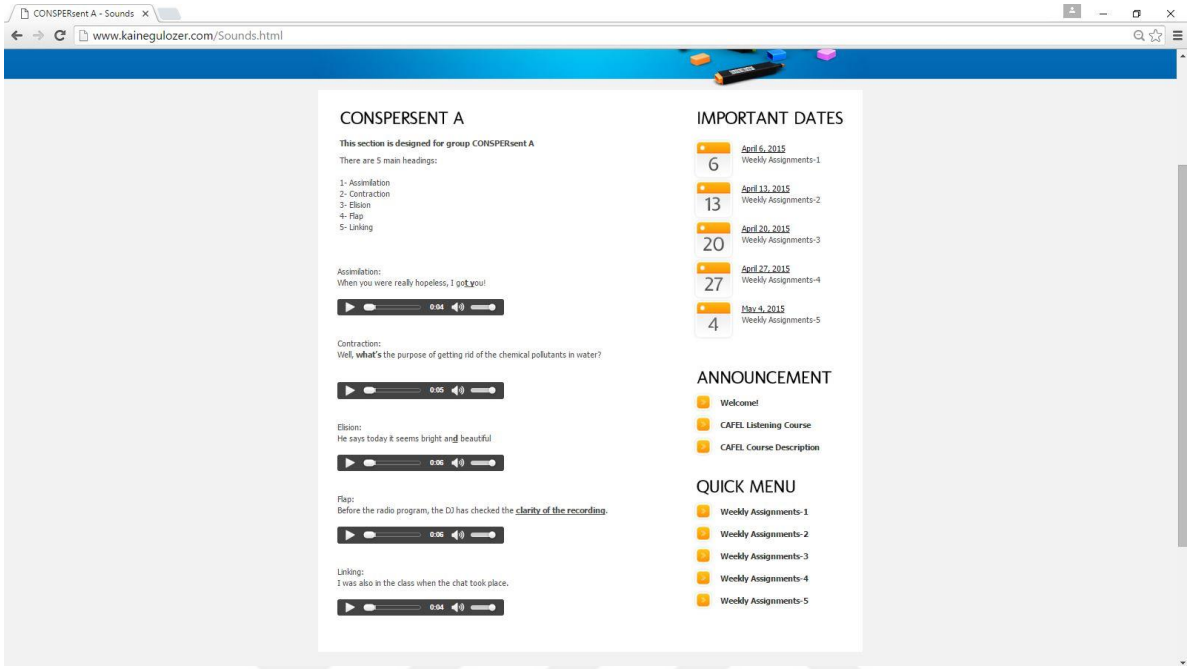
APPENDIX R The Interface of the Reflection Reports

APPENDIX S. The Interface of the Course Description

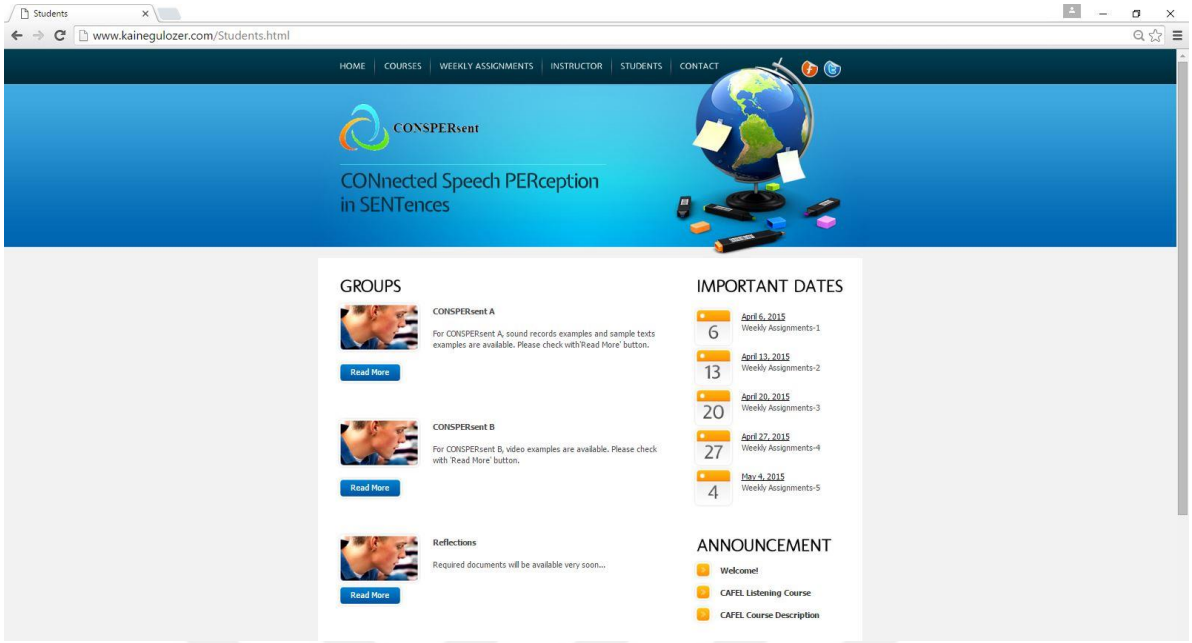
APPENDIX T The Interface on Definition of RFs



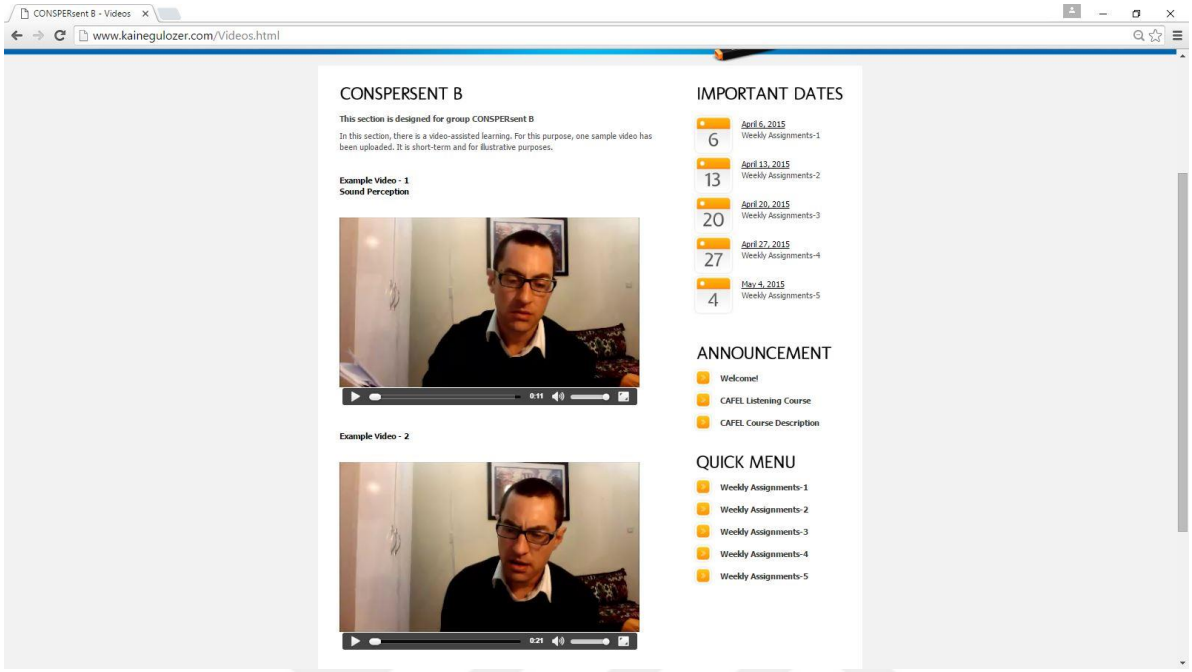
APPENDIX U. The Interface of the Audio Modality



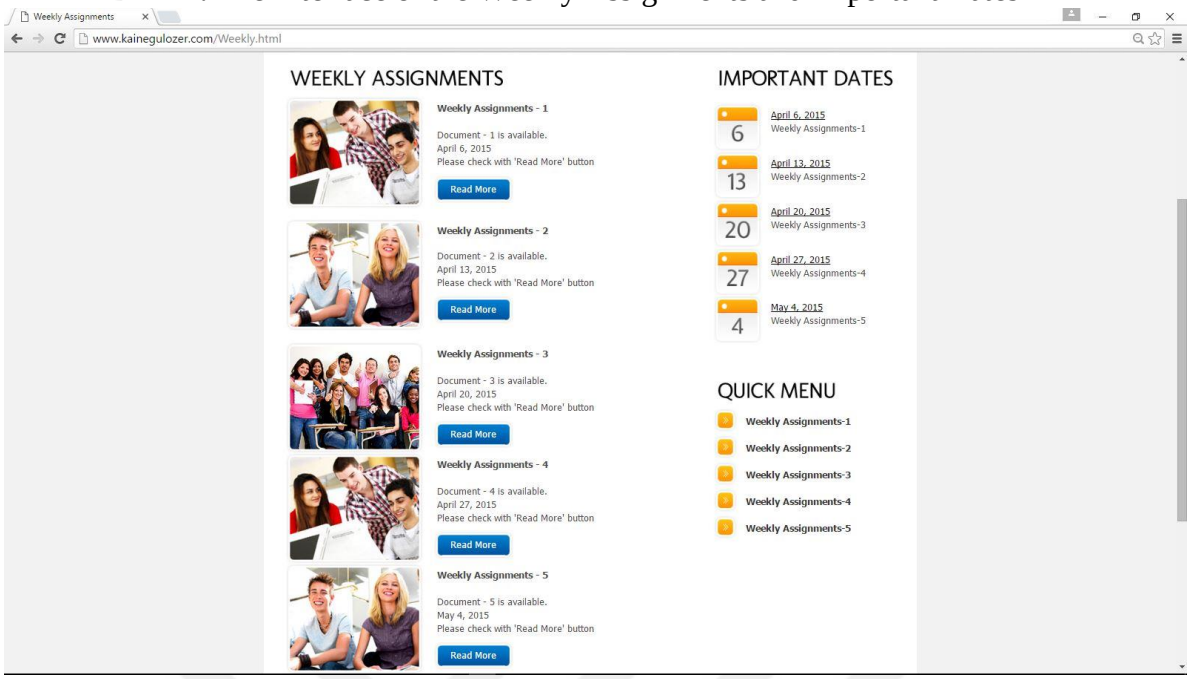
APPENDIX V. The Interface of the Audio and Video Groups' Separate Sign into the Page



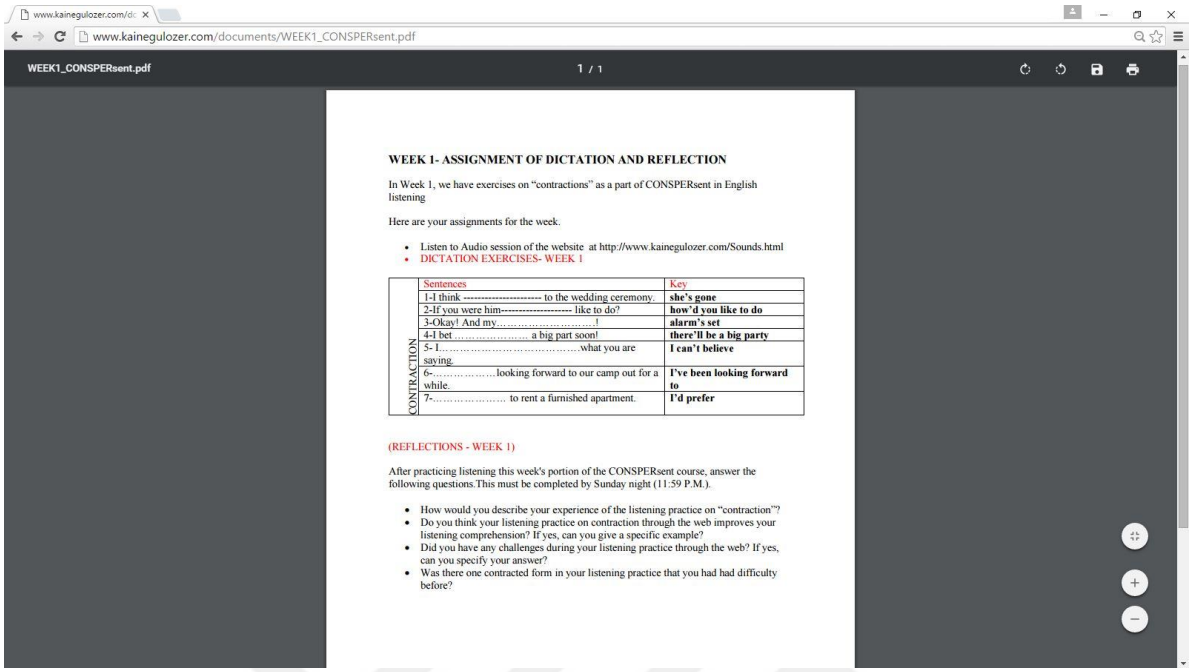
APPENDIX W. The Interface of the Video Modality



APPENDIX X. The Interface of the Weekly Assignments and Important Dates



APPENDIX Y. The Interface of the Assignment and Reflection Questions for Week 1



www.kainegulozer.com/documents/WEEK1_CONSPERsent.pdf

WEEK1_CONSPERsent.pdf 1 / 1

WEEK 1- ASSIGNMENT OF DICTATION AND REFLECTION

In Week 1, we have exercises on "contractions" as a part of CONSPERsent in English listening

Here are your assignments for the week.

- Listen to Audio session of the website at http://www.kainegulozer.com/Sounds.html
- DICTATION EXERCISES- WEEK 1

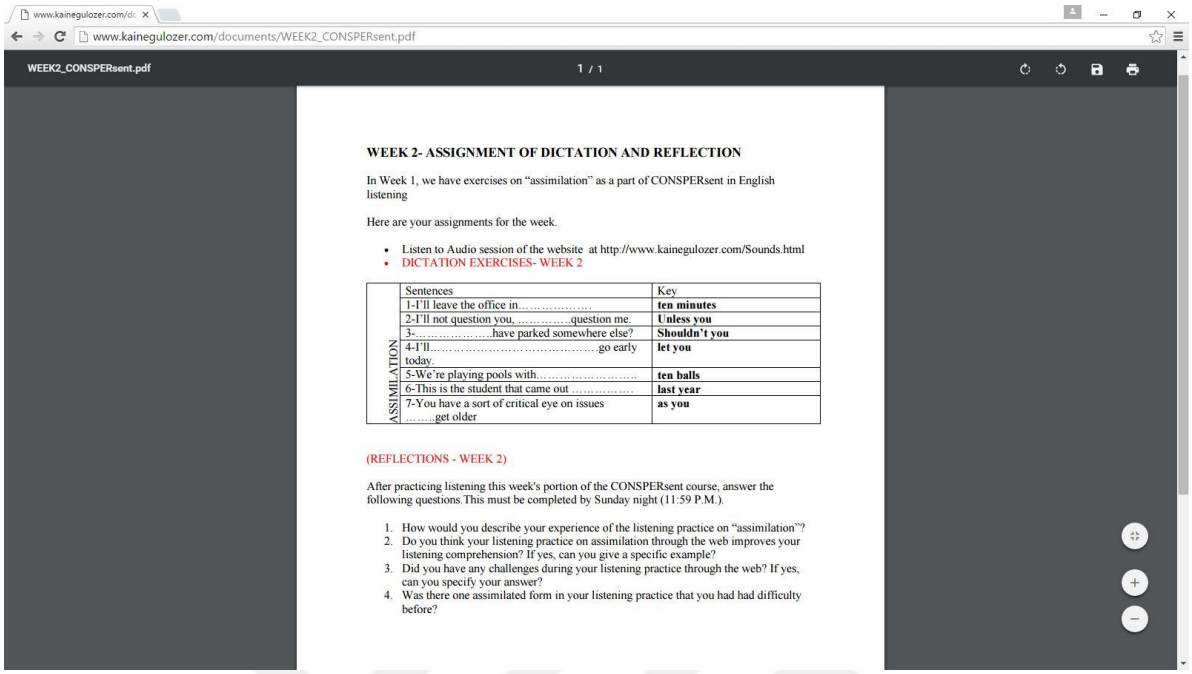
	Sentences	Key
CONTRACTION	1-I think ---------- to the wedding ceremony.	**she's gone**
	2-If you were him---------- like to do?	**how'd you like to do**
	3-Okay! And my……!	**alarm's set**
	4-I bet …… a big part soon!	**there'll be a big party**
	5- I……what you are saying.	**I can't believe**
	6-……looking forward to our camp out for a while.	**I've been looking forward to**
	7-…… to rent a furnished apartment.	**I'd prefer**

(REFLECTIONS - WEEK 1)

After practicing listening this week's portion of the CONSPERsent course, answer the following questions.This must be completed by Sunday night (11:59 P.M.).

- How would you describe your experience of the listening practice on "contraction"?
- Do you think your listening practice on contraction through the web improves your listening comprehension? If yes, can you give a specific example?
- Did you have any challenges during your listening practice through the web? If yes, can you specify your answer?
- Was there one contracted form in your listening practice that you had had difficulty before?

APPENDIX Z. The Interface of the Assignment and Reflection Questions for Week 2



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WEEK 2- ASSIGNMENT OF DICTATION AND REFLECTION

In Week 1, we have exercises on "assimilation" as a part of CONSPERsent in English listening

Here are your assignments for the week.

- Listen to Audio session of the website at http://www.kainegulozer.com/Sounds.html
- DICTATION EXERCISES- WEEK 2

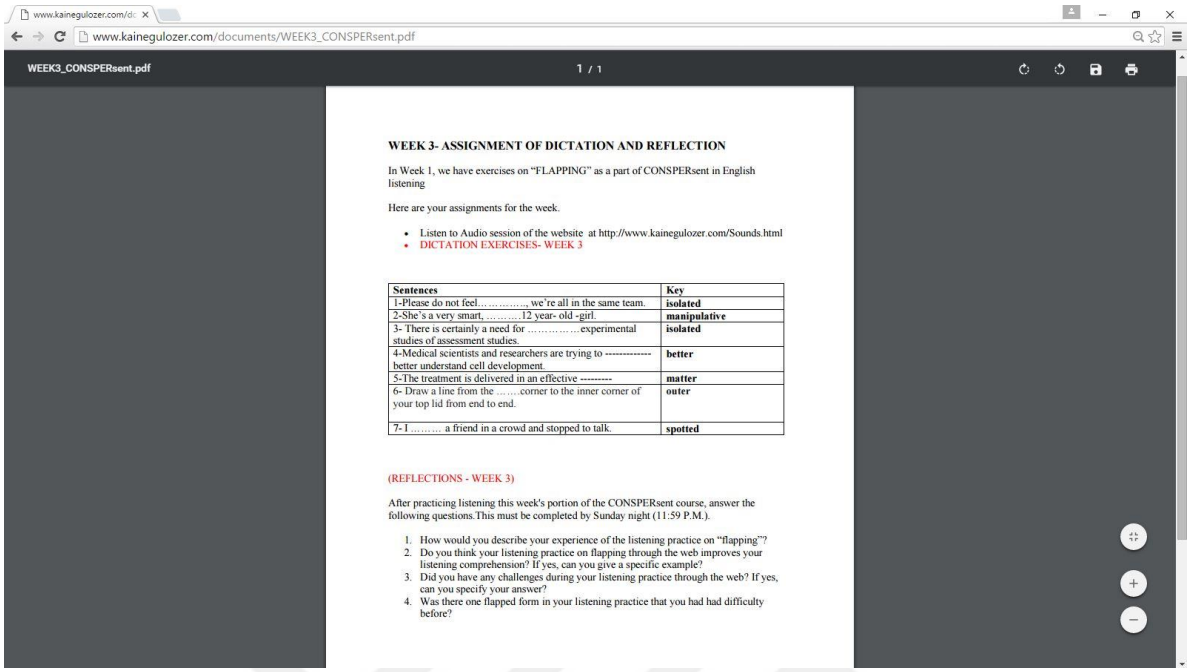
	Sentences	Key
ASSIMILATION	1-I'll leave the office in……	**ten minutes**
	2-I'll not question you, ……question me.	**Unless you**
	3-……have parked somewhere else?	**Shouldn't you**
	4-I'll……go early today.	**let you**
	5-We're playing pools with……..	**ten balls**
	6-This is the student that came out ……	**last year**
	7-You have a sort of critical eye on issues ……get older	**as you**

(REFLECTIONS - WEEK 2)

After practicing listening this week's portion of the CONSPERsent course, answer the following questions.This must be completed by Sunday night (11:59 P.M.).

1. How would you describe your experience of the listening practice on "assimilation"?
2. Do you think your listening practice on assimilation through the web improves your listening comprehension? If yes, can you give a specific example?
3. Did you have any challenges during your listening practice through the web? If yes, can you specify your answer?
4. Was there one assimilated form in your listening practice that you had had difficulty before?

APPENDIX AA. The Interface of the Assignment and Reflection Questions for Week 3



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WEEK 3- ASSIGNMENT OF DICTATION AND REFLECTION

In Week 1, we have exercises on "FLAPPING" as a part of CONSPERsent in English listening

Here are your assignments for the week.

- Listen to Audio session of the website at http://www.kainegulozer.com/Sounds.html
- DICTATION EXERCISES- WEEK 3

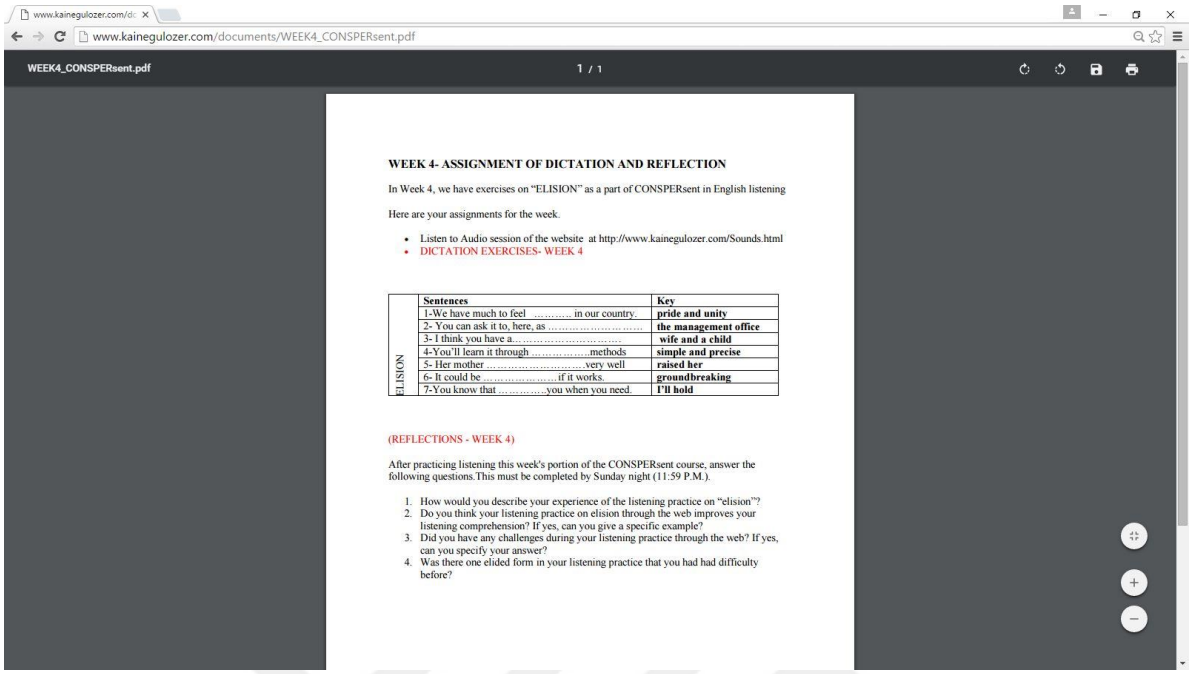
Sentences	Key
1-Please do not feel……., we're all in the same team.	**isolated**
2-She's a very smart, ……12 year- old -girl.	**manipulative**
3- There is certainly a need for ……experimental studies of assessment studies.	**isolated**
4-Medical scientists and researchers are trying to ---------- better understand cell development.	**better**
5-The treatment is delivered in an effective ---------	**matter**
6- Draw a line from the ……corner to the inner corner of your top lid from end to end.	**outer**
7- I ……. a friend in a crowd and stopped to talk.	**spotted**

(REFLECTIONS - WEEK 3)

After practicing listening this week's portion of the CONSPERsent course, answer the following questions.This must be completed by Sunday night (11:59 P.M.).

1. How would you describe your experience of the listening practice on "flapping"?
2. Do you think your listening practice on flapping through the web improves your listening comprehension? If yes, can you give a specific example?
3. Did you have any challenges during your listening practice through the web? If yes, can you specify your answer?
4. Was there one flapped form in your listening practice that you had had difficulty before?

APPENDIX BB. The Interface of the Assignment and Reflection Questions for Week 4



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WEEK 4- ASSIGNMENT OF DICTATION AND REFLECTION

In Week 4, we have exercises on "ELISION" as a part of CONSPERsent in English listening

Here are your assignments for the week.

- Listen to Audio session of the website at http://www.kainegulozer.com/Sounds.html
- DICTATION EXERCISES- WEEK 4

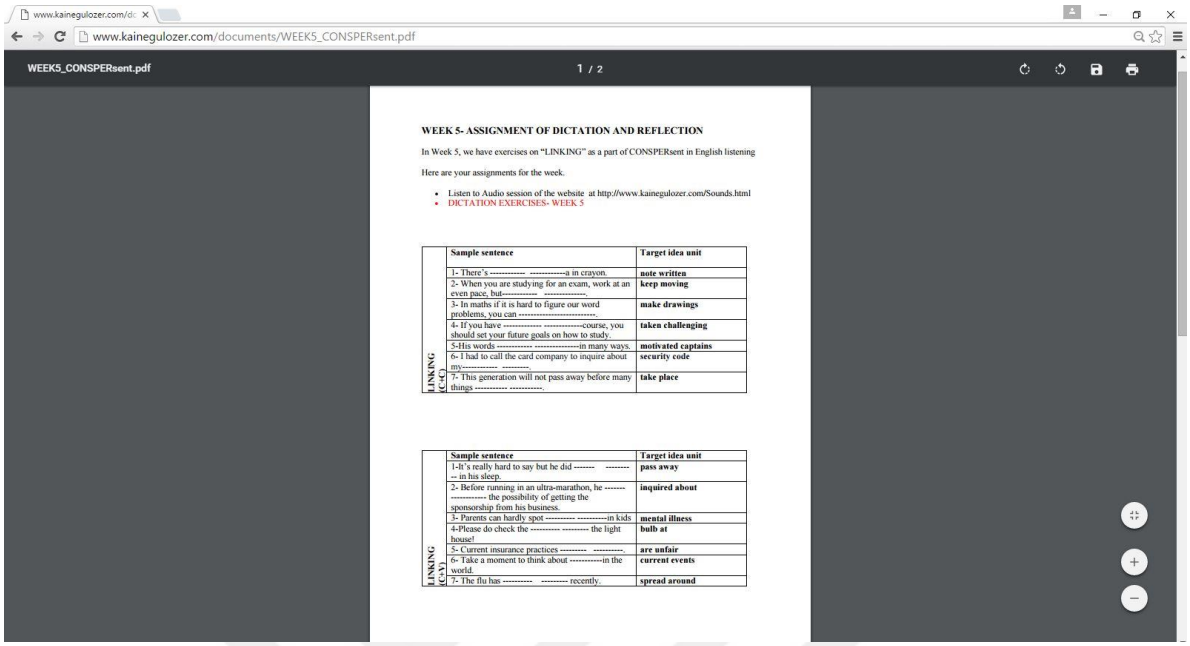
	Sentences	Key
ELISION	1-We have much to feel …… in our country.	**pride and unity**
	2- You can ask it to, here, as ……	**the management office**
	3- I think you have a……	**wife and a child**
	4-You'll learn it through ……methods	**simple and precise**
	5- Her mother ……very well	**raised her**
	6- It could be ……if it works.	**groundbreaking**
	7-You know that ……you when you need.	**I'll hold**

(REFLECTIONS - WEEK 4)

After practicing listening this week's portion of the CONSPERsent course, answer the following questions.This must be completed by Sunday night (11:59 P.M.).

1. How would you describe your experience of the listening practice on "elision"?
2. Do you think your listening practice on elision through the web improves your listening comprehension? If yes, can you give a specific example?
3. Did you have any challenges during your listening practice through the web? If yes, can you specify your answer?
4. Was there one elided form in your listening practice that you had had difficulty before?

APPENDIX CC. The Interface of the Assignment and Reflection Questions for Week 5



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WEEK 5- ASSIGNMENT OF DICTATION AND REFLECTION

In Week 5, we have exercises on "LINKING" as a part of CONSPERsent in English listening

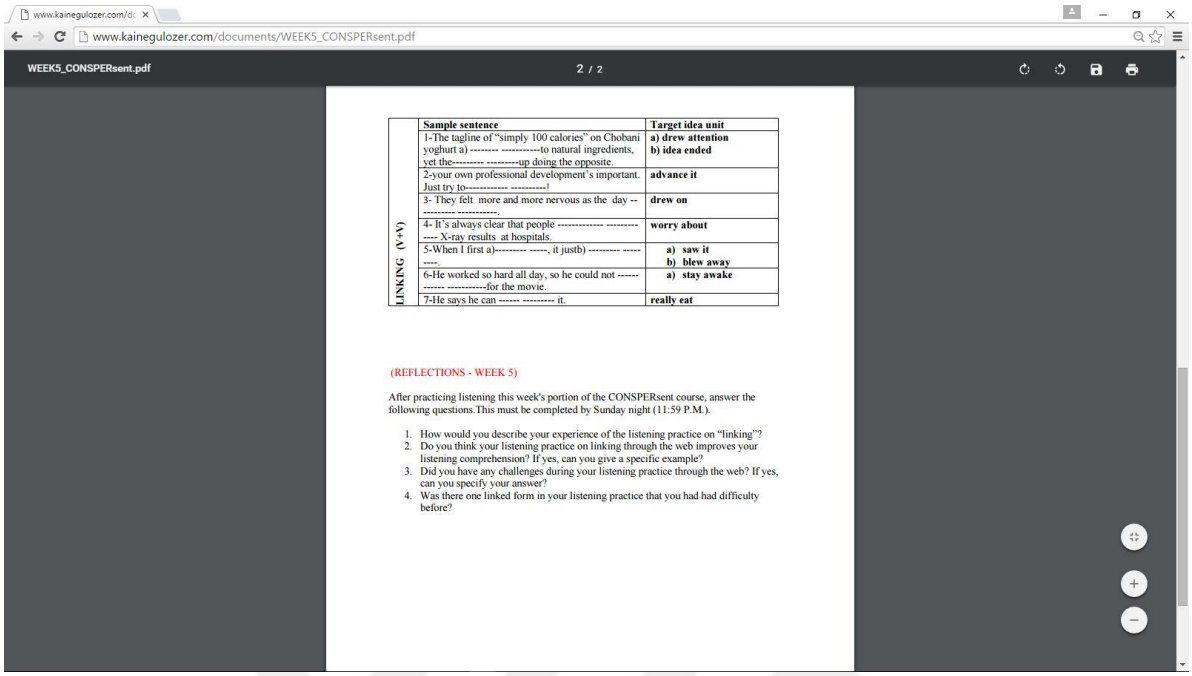
Here are your assignments for the week.

- Listen to Audio session of the website at http://www.kainegulozer.com/Sounds.html
- DICTATION EXERCISES- WEEK 5

	Sample sentence	Target idea unit
LINKING (C+C)	1- There's ---------- ----------a in crayon.	**note written**
	2- When you are studying for an exam, work at an even pace, but---------- ----------.	**keep moving**
	3- In maths if it is hard to figure our word problems, you can ----------.	**make drawings**
	4- If you have ---------- ----------course, you should set your future goals on how to study.	**taken challenging**
	5-His words ---------- ----------in many ways.	**motivated captains**
	6- I had to call the card company to inquire about my---------- ----------.	**security code**
	7- This generation will not pass away before many things ---------- ----------.	**take place**

	Sample sentence	Target idea unit
LINKING (C+V)	1-It's really hard to say but he did ------- -------- -- in his sleep.	**pass away**
	2- Before running in an ultra-marathon, he ------- ---------- the possibility of getting the sponsorship from his business.	**inquired about**
	3- Parents can hardly spot ---------- ----------in kids	**mental illness**
	4-Please do check the ---------- --------- the light house!	**bulb at**
	5- Current insurance practices --------- ----------.	**are unfair**
	6- Take a moment to think about ----------in the world.	**current events**
	7- The flu has ---------- --------- recently.	**spread around**

APPENDIX DD. The Interface of the Assignment and Reflection Questions for Week 5



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	Sample sentence	Target idea unit
LINKING (V+V)	1-The tagline of "simply 100 calories" on Chobani yoghurt a) -------- ----------to natural ingredients, yet the--------- ---------up doing the opposite.	**a) drew attention b) idea ended**
	2-your own professional development's important. Just try to---------- ----------!	**advance it**
	3- They felt more and more nervous as the day -- --------- ----------.	**drew on**
	4- It's always clear that people ---------- --------- ---- X-ray results at hospitals.	**worry about**
	5-When I first a)--------- -----, it justb) --------- ----- ----.	**a) saw it b) blew away**
	6-He worked so hard all day, so he could not ------ ------ ----------for the movie.	**a) stay awake**
	7-He says he can ------ --------- it.	**really eat**

(REFLECTIONS - WEEK 5)

After practicing listening this week's portion of the CONSPERsent course, answer the following questions.This must be completed by Sunday night (11:59 P.M.).

1. How would you describe your experience of the listening practice on "linking"?
2. Do you think your listening practice on linking through the web improves your listening comprehension? If yes, can you give a specific example?
3. Did you have any challenges during your listening practice through the web? If yes, can you specify your answer?
4. Was there one linked form in your listening practice that you had had difficulty before?

APPENDIX EE Reflection Report from AHP Group

AHP 1

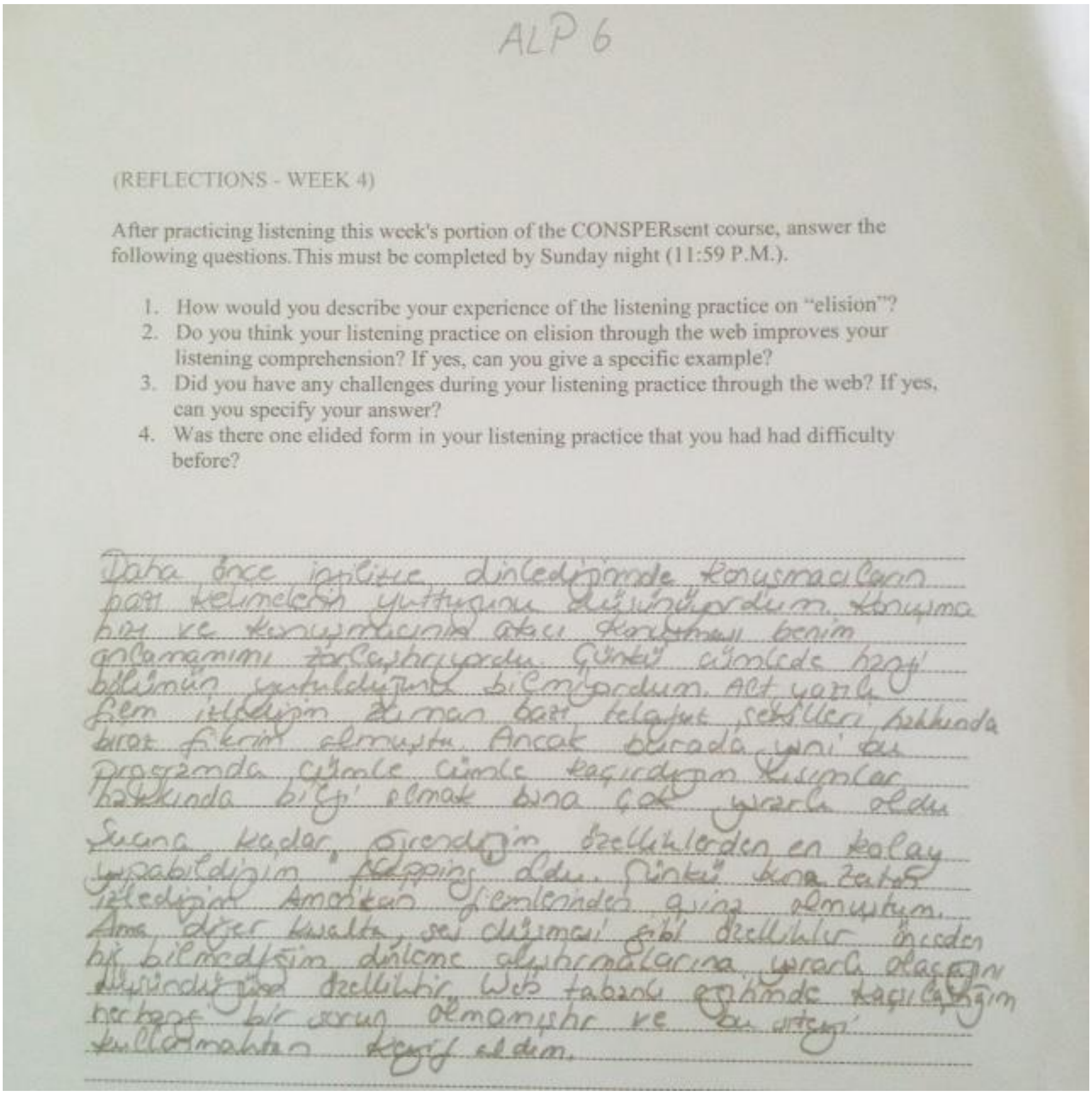
(REFLECTIONS - WEEK 1)

After practicing listening this week's portion of the CONSPERsent course, answer the following questions.This must be completed by Sunday night (11:59 P.M.).

1. How would you describe your experience of the listening practice on "contraction"?
2. Do you think your listening practice on contraction through the web improves your listening comprehension? If yes, can you give a specific example?
3. Did you have any challenges during your listening practice through the web? If yes, can you specify your answer?
4. Was there one contracted form in your listening practice that you had had difficulty before?

Dinlerken cümlenin hangi kısmını kaçırdığınızı öğrenebiliyorsunuz. Öğrendiğimiz özellik "kısaltma" hakkında bilgimi aldıktan sonra önceden kaçırdığım kelimeleri şimdi daha iyi yakalayabiliyorum. Bu eğitimde cümlede yakalayamadığımız bir yeri tekrar tekrar dinleme şansımız var. Bu imkan bize kaçırdığımız küçük birimleri yakalamamızı sağlıyor. Ders içinde böyle bir imkana sahip olamıyoruz. Websitesinde dinleme aktivitesinde herhangi bir zorluk yaşamadım. Bu, önceden bilmediğim bir özellikti.

APPENDIX FF. Reflection Report from ALP Group



ALP 6

(REFLECTIONS - WEEK 4)

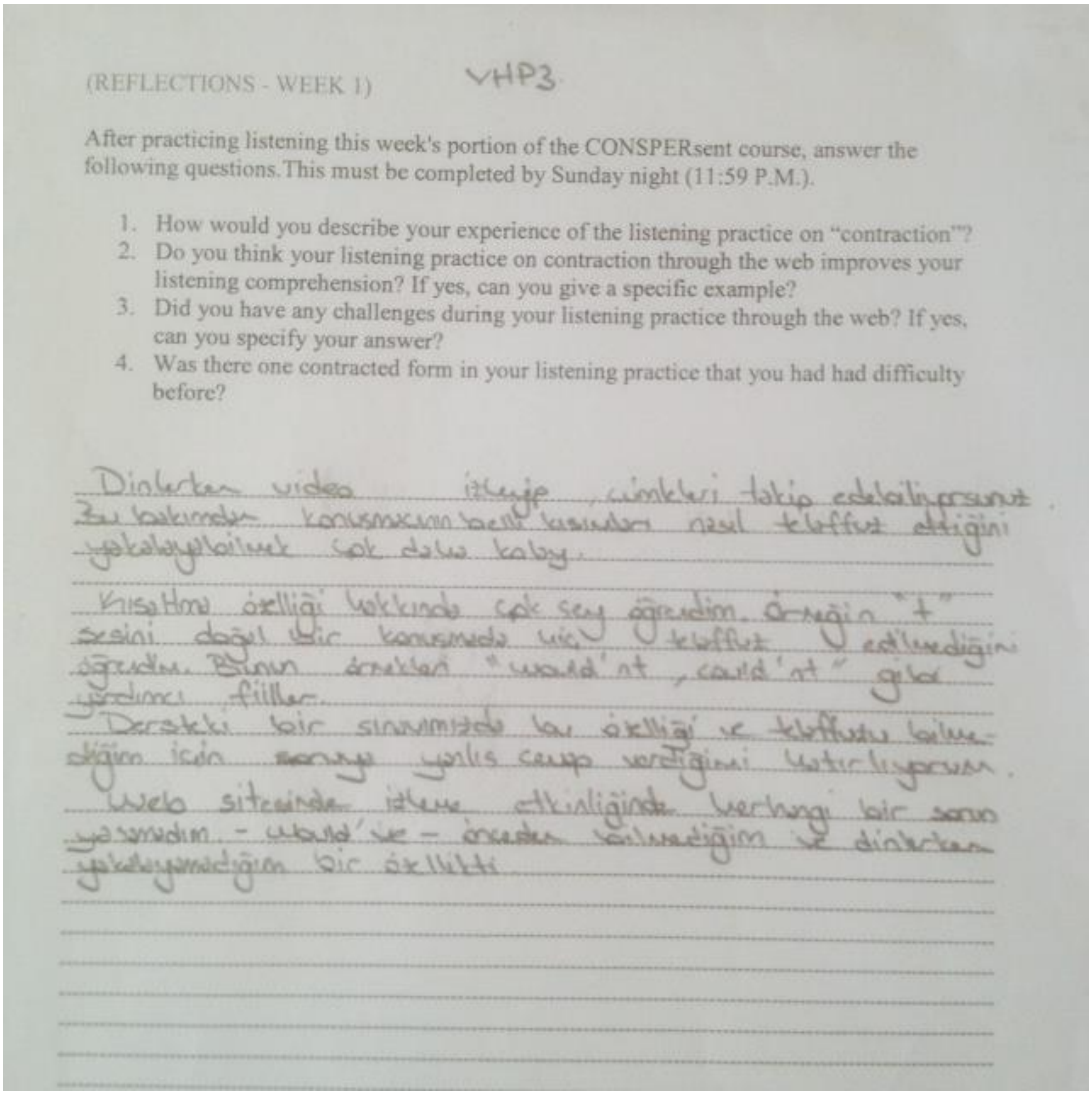
After practicing listening this week's portion of the CONSPERsent course, answer the following questions.This must be completed by Sunday night (11:59 P.M.).

1. How would you describe your experience of the listening practice on "elision"?
2. Do you think your listening practice on elision through the web improves your listening comprehension? If yes, can you give a specific example?
3. Did you have any challenges during your listening practice through the web? If yes, can you specify your answer?
4. Was there one elided form in your listening practice that you had had difficulty before?

Daha önce ingilizce dinlediğimde konuşmacıların bazı kelimelerin yuttuğunu düşünüyordum. Konuşma hızı ve konuşmacının aksanı konuşması benim anlamamımı zorlaştırıyordu. Çünkü cümlede hangi bölümün yutulduğunu bilmiyordum. Alt yazılı film izlediğim zaman bazı telaffuz şekilleri hakkında biraz fikrim olmuştu. Ancak burada yani bu programda cümle cümle kaçırdığım kısımlar hakkında bilgi olmak bana çok yararlı oldu.

Şuana kadar, öğrendiğim özelliklerden en kolay yapabildiğim "flapping" oldu. Çünkü bunu zaten izlediğim Amerikan filmlerinden aşina olmuştum. Ama diğer kısaltma, ses düşmesi gibi özellikler önceden hiç bilmediğim dinleme alıştırmalarına yararlı olacağını düşündüğüm özelliklerdir. Web tabanlı eğitimde karşılaştığım herhangi bir sorun olmamıştır ve bu siteyi kullanmaktan keyif aldım.

APPENDIX GG. Reflection Report from VHP Group


(REFLECTIONS - WEEK 1) VHP3

After practicing listening this week's portion of the CONSPERsent course, answer the following questions.This must be completed by Sunday night (11:59 P.M.).

1. How would you describe your experience of the listening practice on "contraction"?
2. Do you think your listening practice on contraction through the web improves your listening comprehension? If yes, can you give a specific example?
3. Did you have any challenges during your listening practice through the web? If yes, can you specify your answer?
4. Was there one contracted form in your listening practice that you had had difficulty before?

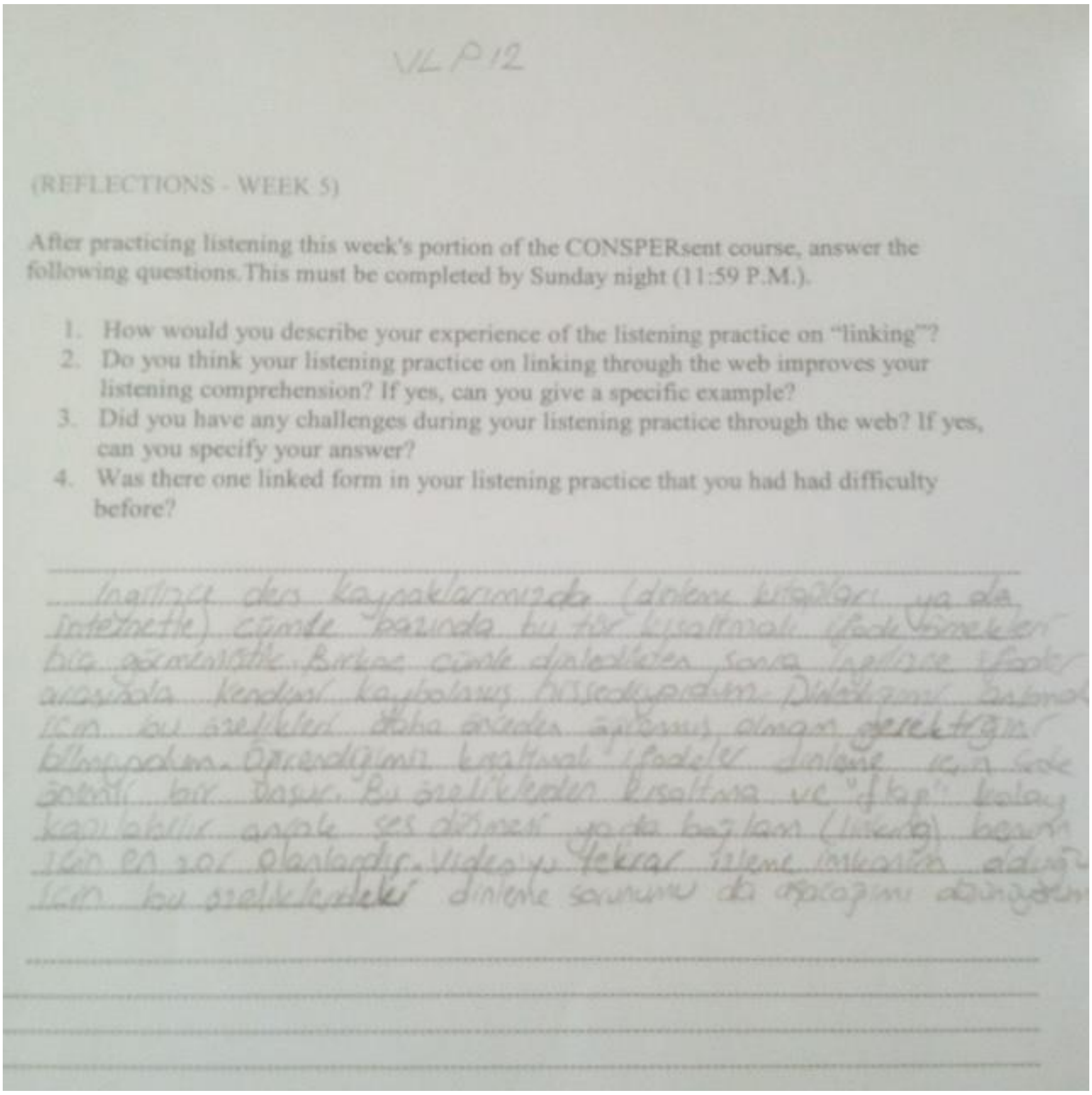
Dinlerken video izlemek cümleleri takip edebiliyorsunuz. Bu bakımdan konuşmacının belli kısımları nasıl telaffuz ettiğini yakalayabilmek çok daha kolay.

Kısaltma özelliği hakkında çok şey öğrendim. Örneğin "t" sesini doğal bir konuşmada hiç telaffuz edilmediğini öğrendim. Bunun örnekleri "would'nt, could'nt" gibi yardımcı fiiller.

Dersteki bir sınavımızda bu özelliği ve telaffuzu bilmediğim için soruya yanlış cevap verdiğimi hatırlıyorum.

Web sitesinde izleme etkinliğinde herhangi bir sorun yaşamadım. "would've" önceden sanılmadığım ve dinlerken yakalayamadığım bir özellikti.

APPENDIX HH. Reflection Report from VLP Group



VLP12

(REFLECTIONS - WEEK 5)

After practicing listening this week's portion of the CONSPERsent course, answer the following questions. This must be completed by Sunday night (11:59 P.M.).

1. How would you describe your experience of the listening practice on "linking"?
2. Do you think your listening practice on linking through the web improves your listening comprehension? If yes, can you give a specific example?
3. Did you have any challenges during your listening practice through the web? If yes, can you specify your answer?
4. Was there one linked form in your listening practice that you had had difficulty before?

İngilizce ders kaynaklarımızda (dinleme kitapları ya da internette) cümle bazında bu tür kısaltmalı ifadelere/örneklere hiç görmemiştik. Birkaç cümle dinledikten sonra İngilizce ifadeler arasında kendimi kaybolmuş hissediyordum. Dinlediğimi anlamak için bu özellikleri daha önceden öğrenmiş olmam gerektiğini bilmiyordum. Öğrendiğimiz kısaltmalı ifadeler dinleme için çok önemli bir başarı. Bu özelliklerden kısaltma ve "flap" kolay kavranabilir ancak ses düşmesi ya da bağlam (linking) benim için en zor olanlardı. Videoyu tekrar izleme imkanım olduğu için bu özelliklerdeki dinleme sorununu da aşacağımı düşünüyorum.