Exploring students' difficulties with English connected speech and assimilation: A study at ENSB in Algiers

Wahiba Benmezal[1], Faiza Bensemmane[2]

[1]ENSB (Teacher Training College at Bouzareah, Algiers,Algeria)
benmezal.wahiba@ensb.dz

[2]University of Algiers 2, (Algeria)
faiza.bensemmane@univ-alger2.dz

Received: 28/2/2022 Accepted:16/6/2022 Published:31/12/2022

Abstract:
The present research is aimed to draw teachers' attention to the difficulties non-native students of English may encounter when listening to spoken English, specially with assimilation, an important feature of connected speech. Teachers of listening comprehension tend to focus on top-down skills in their teaching, and give little or no importance to bottom-up skills. The latter can help students to identify the modification of sounds occurring at word boundaries, such as assimilation, and enhance their understanding of spoken English. This study explores first year students' perception of their listening difficulties in general, and of assimilation in particular. It also examines the extent to which sound modifications at word boundary can affect their ability to recognize familiar words. To achieve this goal, a questionnaire was administered to 108 participants, and a listening cloze dictation test to measure students' ability to recognize words that underwent assimilation. The results revealed that students had difficulty with new vocabulary, speed of delivery, pronunciation, and assimilated words.

Keywords: Connected speech, Assimilation, Listening difficulties, Word recognition, Sound modification, EFL degree students.

***Corresponding author**: Wahiba Benmezal*

1. Introduction

Though there may be many reasons why non-native students fail to understand spoken English, one of them lies in their inability to recognize words in a stream of speech. In the flow of speech, unlike in the written form where words are clearly separated, sounds interact with each other in a way that is difficult for foreign learners to find out where one word ends and where another starts. Furthermore, the modifications of sounds across word boundaries in connected speech, known also as phonological processes, such as assimilation, deletion, insertion and reduction, make words unrecognizable.

Yet, most of the speech of native speakers is characterized by the presence of these processes. When foreign language learners encounter them through the English language they hear inside or outside the classroom, they generally struggle to understand it even if it comprises only common words which learners may know in their citation forms, i.e., spoken in isolation, but not in connected speech. Therefore, they may either misperceive or misunderstand them, or they may simply miss them entirely. Moreover, focusing too much on such words confuses them and sometimes leads them to miss not only these words but also the incoming parts of the listening.

There is a general agreement that the best way to improve learners' perceptual accuracy of connected speech features is through listening. However, the listening material used in the classroom is often characterized by a well and carefully articulated speech to help foreign learners comprehend the spoken language. It does not really expose them to the real native speakers' speech which is full of aspects of connected speech. Many teachers of English tend to use this kind of listening material in order to develop top-down skills, such as comprehending the gist of a text; but pay little attention to bottom-up skills. The aim of this paper is to report a research study on the difficulties Algerian EFL students encounter when listening to spoken English, specifically when they perceive and understand words that undergo sound modifications at word boundaries, namely assimilation.

Two research questions have been formulated to achieve this aim:

1. What is the students' perception of the difficulties they encounter when listening to spoken English?
2. To what extent does sound modification at word boundary like assimilation affect students' recognition of English words?

We will first define the phenomenon of "assimilation" as an important feature of English connected speech and describe some studies dealing with assimilation in L1 learning/teaching. Next, we will describe assimilation in L2 learning contexts. Finally, we will report our study conducted with first year EFL degree students at ENSB in Algiers.

a. Defining assimilation: Studies on L1contexts

Skandera and Burleigh (2005, p89) defined assimilation as "*a process whereby one sound, usually a consonant, becomes more like, or identical with a neighboring sound regarding one or more of the distinctive features*" (2005, p89). Thus, if two consonants at word boundary differ in one or more features, one affects another to become identical by taking at least one of its phonetic features. In the phrase 'meet girl' [mi:k gə:l], for example, the alveolar /t/ of 'meet' assimilates to the place of articulation of /g/ of 'girl' and becomes velar /k/.

In her study, Veselovska (2016) explored English assimilation and concluded that its occurrence is frequent in all styles of speech, and constitutes an essential part of language articulation. Similarly, Yuliana et al. (2020) analysed the frequency of assimilation in the three songs of Ed Sheeran and found 35 assimilated items, 29 regressive (a very common type in English), and 6 progressive (a less common type in English). Roach (1996) points out to the difference caused by assimilation which may be sometimes very noticeable and sometimes very slight. When it is very noticeable, it makes words less intelligible. Accordingly, the awareness of assimilation is necessary for the improvement of listening skills.

There are two common types of assimilation: direction of influence and types of influence.

i. Direction of influence

The main concern in this classification is whether the process of assimilation has forward effect or backward effect. If the process has a forward effect, it means that the assimilated sound is resulted from the influence of the final consonant of the first word on the initial consonant of the second word. This kind of process is called *progressive assimilation*; and it is rare in English. In the example 'the cats has gone', the voiceless consonant /t/ of the word 'cat' influences the voiced sound /z/ of the word 'has' to become voiceless [s] [ðəkæ**ts**gɒn]. However, if the process has a backward effect, it means that the assimilated sound is due to the influence of the initial consonant of the second word on the final consonant of the first word. This kind of process is called *Regressive assimilation*; and it is very common in English. In the example 'light blue', the bilabial /b/ of 'blue' affects the preceding alveolar consonant /t/ by taking one of its features to become the bilabial /p/ [laɪ**pb**lu:]. A third type of the assimilatory process that differs from the two previous ones is called coalescent assimilation in which two consonants merge together to form "*a single, new sound, or rather phoneme*" (Skandera and Burleigh 2005, p91), thus creating a new sound. The most common example of coalescent assimilation is the palatalisation that occurs with alveolar consonants /s/, /z/, /t/, /d/ when followed by /j/. Palatalisation occurs, for instance, when the alveolar sounds /t/ and /d/ become the palatalised **[ʧ]** and **[ʤ]** as in **'**that your' [ðæ**tʃ**ə] and 'would you' [wʊ**ʤ**ə]. Similarly, the alveolar sounds /s/ and /z/ are

pronounced **[ʃʃ]** and **[ʒʒ]** when followed by the palatal sound /j/ as in 'this year' [ðɪ**ʃʃ**ɪə] and 'does your' [dʌ**ʒ**ə].

ii. Types of influence

There are three types of influence: assimilation of place, assimilation of manner, and assimilation of voicing. *Assimilation of place*, the most common type of influence, is when the place of articulation of a consonant affects the place of articulation of a neighboring consonant (Dirven & Verspoor, 2004). This type occurs when a word ends with an alveolar consonant /t/, /d/ or /n/ followed by a word whose initial consonant is not an alveolar, as Gimson (1968)'s examples below indicate:

1. a) /t/ becomes **[p]** in front of /p, b, m/, example: that boy [ðæ**pb**ɔɪ];
   b) /t/ becomes **[k]** in front of /k, g/, example: that cup [ðæ**kk**ʌp];
2. a) /d/ becomes **[b]** in front of /p, b, m/, example: good pen [gʊ**bp**en];
   b) /d/ becomes **[g]** in front of /k, g/; example: good concert [gʊ**gk**ɒnsət];
3. a) /n/ becomes **[m]** in front of /p, b, m/, example: ten players [te**mp**leɪəz];
   b) /n/ becomes **[ŋ]** in front of /k, g/, example: ten girls [te**ŋg**ə:l].

A less common type of influence, *assimilation of manner*, occurs when a plosive consonant is in front of a fricative or nasal; the plosive sound becomes therefore a fricative or nasal. So, the consonant /t/ becomes **[s]** in front of the fricative /s/ as in 'that side' [ðæ**ss**aɪd]; and the consonant /d/ becomes **[n]** in front of the nasal /n/ as in 'good night' [gʊ**nn**aɪt].

The last type of influence, *assimilation of voicing*, is found in a limited way; and only regressive assimilation of voicing is found across word boundaries (Roach 1996). It occurs when a word ends with a voiced fricative /v/, /z/ or /ð/ and the following word starts with a voiceless consonant; therefore, the voiced fricative may be realized as a voiceless fricative. So, the consonant /ð/ of '*with'* becomes **[θ]** in front of /θ/ of 'thanks [wɪ**θθ**æŋks]; the consonant /z/ of 'was' becomes **[s]**/ in front of /s/ of 'sent' [wə**ss**ent]; and the consonant /v/ of 'have' becomes **[f]** in front of /f/ of 'found' [**ff**aʊnd] (Cruttenden 2014).

In everyday speech, native speakers have no difficulty recognizing assimilated words even when there is a neutralisation of segmental contrasts such as 'meet girl' and 'meek girl', both of which are pronounced as **[mi:k gə:l].** Though native speakers recognize easily assimilated words, most of them are not aware of the presence of the phonological modifications occurring between words (Darcy et al., 2009; Veselovska, 2016). Several studies have been conducted in order to understand how native listeners understand the intended words in the absence of contrasts between lexical items (Darcy et al., 2009; Gaskell and Marslen-Wilson, 1996, 1998; Mitterer and Blomert, 2003; Sung, 2018). Researchers have reported that the compensation for phonological assimilation in the native language depends on language-specific knowledge of its phonological processes, referred to as language-specific compensation mechanism. In other words, native listeners' compensation for the assimilated words depends on the

phonological experience with the assimilation rules that exist in a native language.

b. Assimilation in L2 learning/teaching contexts

Connected speech processes such as assimilation, elision, linking and reduction have two major roles. First, they make articulation easy and are regarded as natural articulatory simplifications. This is why words pronounced in isolation become modified when pronounced in connected speech. Second, they preserve the characteristic rhythm of English. According to Celce-Murcia et al. (1996), adjustments in connected speech reflect native speakers' attempts to connect words and syllables smoothly in natural speech; these processes work to maintain the English rhythm.

Referring to assimilation, Crystal (2008, p.40) stated "*when passages of natural conversation came to be analyzed, however, assimilation emerged as being one of the main means whereby fluency and rhythm are maintained*" (2008, p40). In addition, Dalton and Seidlhofer (1994) further explained that the phonetic modifications occurring at word-boundaries are probably responsible for the widespread feeling among foreign language learners that native speakers '*speak too fast*' (Dalton & Seidlhofer 1994, p115).

The compensation for phonological assimilation by SL learners was investigated by Sung et al. (2019). They examined the effect of sentential context on perceptual compensation for assimilation and compared compensation patterns between native English listeners and advanced Korean learners of English. The study included two perception experiments, discrimination and identification experiments, involving English coronal place of assimilation (i.e., the two alveolar consonants /d/ and /t/, and the alveolar nasal /n/). The results of the discrimination experiment showed that both listener groups demonstrated significantly higher detection rates in sentences than in words when the assimilated speech was presented in the context where phonological modification was applicable. However, the Korean listeners were not as sensitive as the native-English listeners to phonetic differences of word final consonants in the context of inapplicable change, and showed more variations in detection rates than the English listeners. In the identification experiment, the results provided a significant effect of word final consonants on both listener groups. Thus, both groups of listeners clearly differentiated between original non-coronal (either bilabial such as /p/, /b/, or /m/ or velar such as /k/, /g/, or /ŋ/consonants) consonants and assimilated forms of coronal consonants**.** The researchers concluded that, like the L1 listeners, the L2 advanced learners were also able to use sentential context to perceive assimilated speech and to develop L2 phonological system as their experience of L2 increased.

It is important to mention that one of the aforementioned researchers, Sung (2018), conducted a previous study on the Korean listeners with a low English proficiency level. The results showed that the participants did not

demonstrate phonological compensation for English place assimilation. This finding underscores the role of listeners' experience in the perceptual compensation for English assimilation.

In another study in the USA, Gokgoz-Kurt (2016) investigated the effects of online training on the role of attention control in improving second language learners' perception of English palatalisation, a process of assimilation occurring across word boundaries. The study recruited 58 non-native speakers of English from various linguistic backgrounds and from different proficiency levels. They studied English as a second language in the ESL intensive program hosted at a major research university in the United States, and received three weeks of online training on the most commonly used English palatalisation forms. The results showed that learners in the experimental group improved their performance scores on the perception test better than the learners in the control group. The findings also revealed a significant relationship between learners' attention control and connected speech learning, namely palatalisation.

If research on second language learners' perception of English assimilation is scarce, research in EFL learning contexts is almost non-existent, and hardly researched on its own, i.e., it is usually studied as one of the processes of connected speech (Brown and Hilferty, 1986; Carreira, 2008; Crawford, 2006; Hamouda and Aljumah, 2017; Henrichsen, 1984; Musfirah et al., 2019; Suleiman Al Qunayeer, 2020). The two studies that researched phonological assimilation are the ones conducted by Zahedi et al. (2007) and Baghrahi et al. (2014).

Zahedi et al. (2007) examined the effect of the English phonological features on 125 Iranian university EFL students from three proficiency levels: elementary, intermediate, and advanced. The researchers used a dictation test that included sentences containing phonological features such as assimilation, elision, liaison, and palatalization. The results showed that the participants were weak at perceiving phonological features; and the most problematic ones were assimilation and elision.

Baghrahi et al. (2014) investigated the effect of teaching assimilation and elision on 42 Iranian EFL high school learners who were divided into experimental and control groups; each group contained 21 participants. Though the same material, focusing mainly on practicing comprehension, was used for both groups to teach listening comprehension, the experimental group received six weeks of instruction on assimilation and elision, as well. The results showed significant difference between the means of the two groups on the dictation test; therefore, the teaching of assimilation and elision improved the listening comprehension of the experimental group.

To sum up, these studies suggest that while native listeners encounter no difficulty in recognizing assimilated words, second and foreign listeners struggle to perceive them and have difficulty with the comprehension of connected speech.

c. Identifying L2 learners' listening difficulties at bottom-up level

Understanding spoken language requires the use of two complementary processes, bottom-up and top-down processes, which can help to identify fully the content of any listening task. Bottom-up processing refers to the learners' recognition of individual components of spoken messages, such as phonemes, words, sentences, to understand the whole message. On the other hand, top-down processing refers to the learners' use of their knowledge of the topic, situations, and contexts in order to understand what they hear. As Nunan, (1992, p43) explains, "*It [top-down process] begins with the whole text and encourages learners to use their knowledge of text structure and the overall purpose of the speaker/writer to orient them to the text*".

According to Norris (1994), native speakers have obviously a cultural advantage in using top-down process; they can use their previous knowledge and experience to anticipate, predict and infer meaning. This is not the case for foreign language learners who need first to be proficient with the bottom-up process in order to understand any listening event. Norris (1994) claims that foreign learners of English should not be expected to bring the same strategies as native speakers do when listening to spoken English. Without being aware of how to decode a stream of sound into segments of words, phrases and sentences, it is impossible for learners to develop strategies as inferring, predicting, and using knowledge of the topic, speakers, and context to understand a speaker's message. "*Before foreign students can ever begin to incorporate top-down processing skills in comprehending spoken English, they must be able to decode the sounds they hear and develop [bottom-up] micro-skills"* (Norris, 1995, p48).

Therefore, when teaching listening comprehension teachers should provide opportunities for learners to acquire specific micro-skills which Richards (1983, p232) defines as the "*individual listening abilities used in specifying particular teaching objectives*." He suggests a taxonomy of 33 micro-skills that foreign learners need to be involved in conversational listening, 19 of which belong to bottom-up processing. In addition, Norris (1994) observes that 7 micro-skills among them may cause foreign learners a lot of difficulties, mainly at the phonetic level.

- Ability to discriminate among the distinctive sounds of the target language.
- Ability to recognize the stress pattern of words.
- Ability to recognize the functions of stress and intonation to signal information structure of utterances.
- Ability to identify words in stressed and unstressed positions.
- Ability to recognize reduced forms of words.
- Ability to distinguish word boundaries.
- Ability to recognize elliptical forms of grammatical units and sentences.

Field (2003) also calls for greater attention to bottom up listening skills, pointing to some phonetic features that may lead to break down of communication. *"Some modicum of perceptual information even if only a few words, is clearly needed before contextual knowledge can be brought to bear. But it is also a fact that many high-level breakdowns of communication originate in low-level errors"* (Field, 2003, p325). He suggests four common perceptual causes of breakdowns of understanding, all of which are directly related to word recognition (Field, 2003, p327):

- Learners knows the word but attributed the wrong sense.
- Learner failed to recognize a phonetic variation of a known word.
- Learner knows the word in reading but not in spoken vocabulary.
- Learner was unable to segment the word out of a piece of connected speech.

Field (2003) notes that if one major cause of segmentation problems is the lack of pauses between word, a second and equally important one is the way the citation forms of words are modified in connected speech, attributing learners' difficulty to three speech phenomena: reduced forms, assimilation and elision. However, while it is good for foreign learners to develop both types of processes, i.e. bottom-up and top-down, Brown (1990) claims they need first to learn to control the phonological code which is the raw data of language input, because without it, there is no linguistic message.

The literature reports that many listening difficulties stem from bottom-up processing at the phonetic level. Several studies have been conducted around the world to identify the difficulties learners of English in second and foreign language learning contexts (ESL/EFL) encounter when listening to spoken English. To analyze real-time listening difficulties encountered by a group of Chinese ESL students preparing for undergraduate studies, Goh (2000) used a cognitive framework of language comprehension. This framework was first proposed by Anderson (1995) who broke down the process of language comprehension into three stages: perception, parsing, and utilizing. These three stages represent different levels of processing, and may occur at the same time during a listening event. To gather data, Goh (2000) used three tools: weekly diaries, semi-structured interviews, and immediate retrospective verbalization. Her analysis indicated 10 real-time comprehension problems which occurred during the cognitive processing phases of perception, parsing and utilisation. Half of them were perceptual processing problems linked to word recognition and ineffective attention.

In the same context, Gao (2014)'s findings revealed that the main difficulties in listening comprehension for Chinese university students at intermediate level were: limited knowledge of phonology, inadequate vocabulary, and poor awareness of the features of connected speech.

Hamouda (2013) carried out a similar study in Saudi Arabia with 60 first year Saudi EFL male university students of English. The results

showed that Saudi students encountered various kinds of listening problems, among them unfamiliar words, the length of the spoken texts, speed rate, pronunciation, and recognition of words both in written and spoken texts. Similarly, Alzamil (2021)'s study, conducted with 87 Saudi female students, yielded almost the same results. Accordingly, Saudi female students' listening difficulties are also associated with speech rate, pronunciation, limited vocabulary and lack of background information.

Assaf (2015)'s study also aimed to investigate the listening difficulties of EFL students who took English courses at the English Language Center at the Arab American-Jenin, Palestine. To collect data, two instruments were use: a questionnaire and an interview. The researcher found out that the most important factors affecting listening comprehension were students' inability to recognize words, lack of background information, unfamiliar vocabulary, as well as speed rate of speech. Similarly, Izzah and Keeya (2019) analysed listening difficulties encountered by 86 Indonesian EFL university students using a self-structured questionnaire. The results showed that unfamiliar words, words obscurity, faster speech rate, and pronunciation were the components of the common challenges Indonesian students faced in listening comprehension.

All the above-mentioned studies used students as their source of data collection, whereas Nushi and Orouji (2020) involved teachers as their participants to identify their EFL learners' listening difficulties. Their study was conducted in Iran and included 208 teacher participants holding BA, MA, or PhD degrees in TEFL, and teaching English at various language institutes across Iran to learners of different proficiency levels. The researchers used an online questionnaire and a semi-structured interview. The results revealed that Iranian learners encounter various kinds of listening difficulties such as unfamiliar topics, unfamiliar words, and inability to recognize words they knew in their written form but not in their spoken form, as well as high rate of speech.

As indicated by these studies, ESL and EFL learners in different contexts encountered similar listening difficulties.

2. Method

The present study is exploratory. Its aim is twofold: 1) to explore first year degree students' perception of the difficulties they encounter when listening to spoken English and 2) to examine the extent to which modifications at word boundaries, namely assimilation, affects their recognition of words.

2.1 Participants

The participants are 108 first year English degree students enrolled in ENSB (Algiers). 104 are female and 4 only are male. Their age ranges from 17 to 19 with a median of 18. The majority (84) studied English for 7 years and the rest (24) for 8 years. All of them are pre-service teachers of EFL. They are studying English either for four years to become middle school

teachers, or for five years to become secondary school teachers. They must attend listening classes in the first and second year of the curriculum, and each weekly listening session lasts one hour thirty minutes.

2.2 Research tools

Two research tools have been used for data collection: a questionnaire which aims to explore students' perception of their listening difficulties of spoken English; and a cloze dictation test to find out the extent to which sound modifications at word boundaries, mainly assimilation, affect their ability to recognize familiar words.

The questionnaire includes a first section which explains the purpose of the study, a second section on students' background information and a last section on the participants' language information. All the questions are closed-ended items, including yes/no questions, Likert scales, and checklists; thus, the respondents were provided with ready-made response options to choose from. In this way, the questions could be understood easily and answered quickly, and they could be more manageable at the analysis stage. The questions target the listening materials the students listen to outside the classroom, the difficulties they encounter when listening to spoken English; and the elements of the English pronunciation they studied before coming to ENSB, mainly the modification of sounds at word boundaries (see Appendix A).

The cloze dictation test consists of ten sentences taken from Marks and Bowen (2012)'s *The Book of Pronunciation*, and Ashton and Shepherd (2012)'s *Work on your Accent* (see Appendix B). The students were asked to fill in the blanks in the sentences by writing what they heard from the recording. Each blank includes two words, the assimilated word and the following word. It was important to find out whether the students were able to identify not only the words that underwent assimilation but also the words that caused their modification. Therefore, the total number of items that the students were required to find out was twenty, and every item was counted as having one point in score. The table 1 below shows the modifications of the 20 items that occurred at word boundary.

Table1. Modifications of the twenty items that occurred at word boundary

Sentences	Items	Phonemic transcription	Phonetic transcription	Types of assimilation
1	wet paint	wet peInt	we**p**peInt	Regressive
2	as usual	æz juːʒʊəl	æ**ʒ**juːʒʊəl	Coalescent
3	did Brazil	dId bræzIl	dI**b**bræzIl	Regressive
4	gone back	gʌn bæk	gʌ**m**bæk	Regressive
5	haven't aid	hævnt peIdə	hæv**mp**peIdə	Regressive
6	start by	stɑːrt baI	stɑːr**p**baI	Regressive
7	white gate	waIt geIt	waI**k**geIt	Regressive
8	seat covers	siːt kʌvəz	siː**k**kʌvəz	Regressive
9	but you	bʌt juː	bə**ʧ**ə	Coalescent
10	had yesterday	hæd jestədeI	hə**ʤ**estədeI	Coalescent

2.3 Data collection procedure

This study took place in October 2020 in a listening class. The questionnaire was administered to 110 students; however, data from 2 students were not included because they reported having hearing problems. Therefore, a total number of 108 students participated in the study. None of them found it difficult to complete the questionnaire. It took them an average of 5 minutes to fill it.

After completion of the questionnaire, the cloze dictation task was immediately administered. The students had enough time to read and understand the task assigned to them; and the recorder was stopped after listening to each sentence, giving them enough time to fill in the blanks. The recording was played twice to allow the students to become familiar with the speakers' pitch, speed, and quality of the voice (Field, 2002). The listening task was carried out in a language laboratory in order to ensure good listening quality. It took the students 15 minutes to complete the task.

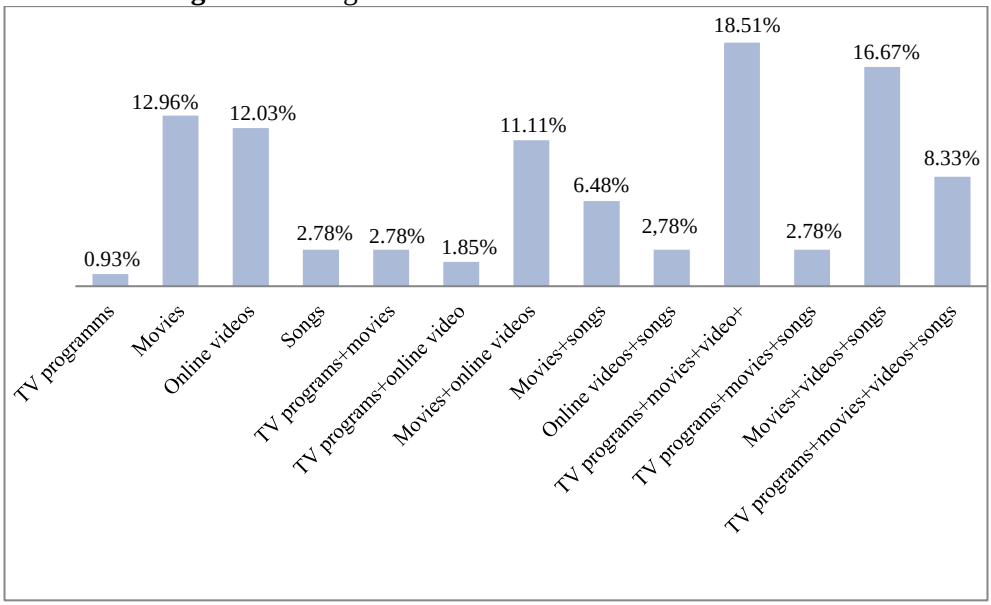
3. Results

This section presents the results obtained from the analysis of the students' responses to the questionnaire and the cloze dictation test.

3.1. Students' responses on the listening materials

All the students said that they listen to English outside the classroom to a varying degree using different materials. 20/108 students (18.51%) prefer listening to 'TV programs, movies and videos'; 18 students (16.67%) chose to listen to 'movies, videos and songs'; and 14 students (12.96%) prefer watching only 'movies' and 13 (12.03) only online videos. Only 9 students (8.33%) listen to all the materials (see Figure1). Thus, the majority of them listen to all types of materials outside the classroom.

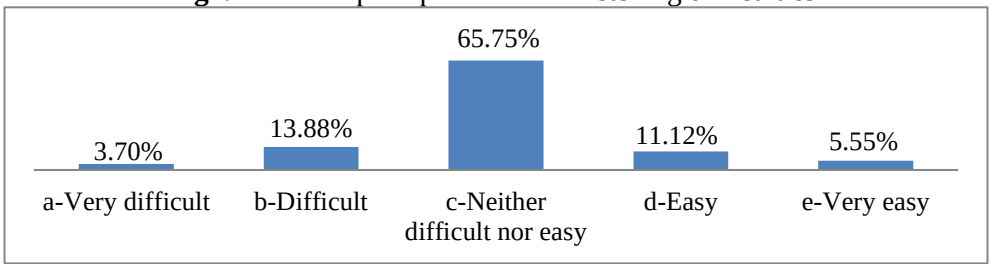
Fig.1. Percentages of the materials the students listen to



3.2. Students' perception of their listening difficulties

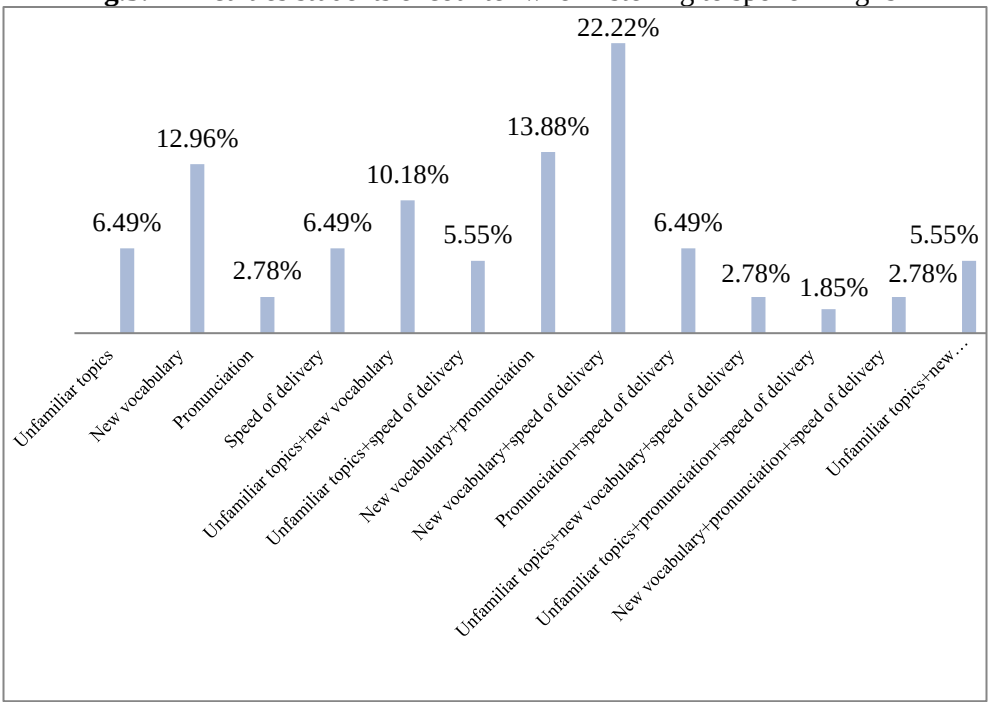
Concerning students' listening difficulties, 71/108 of the students (65.75%) consider listening to spoken English 'neither difficult nor easy', 15 students (13.88%) considered it 'difficult', and only 4 (03.70%) consider it 'very difficult'. On the other hand, 12 students (11.12%) believe that listen to spoken English is 'easy', and only 6 believe it to be 'very easy' (see figure2).

Fig2. Students' perception of their listening difficulties



All the students report having difficulties when listening to spoken English. 24 students (22.22%) consider 'new vocabulary and speed of delivery' as the main cause of not understanding spoken English; for 15 students (13.88%), it is 'new vocabulary and pronunciation', for 14 students (12.96%), it is 'new vocabulary', and 11 students (10.18%) relate their difficulties to 'unfamiliar topics and new vocabulary' (see Figure3).

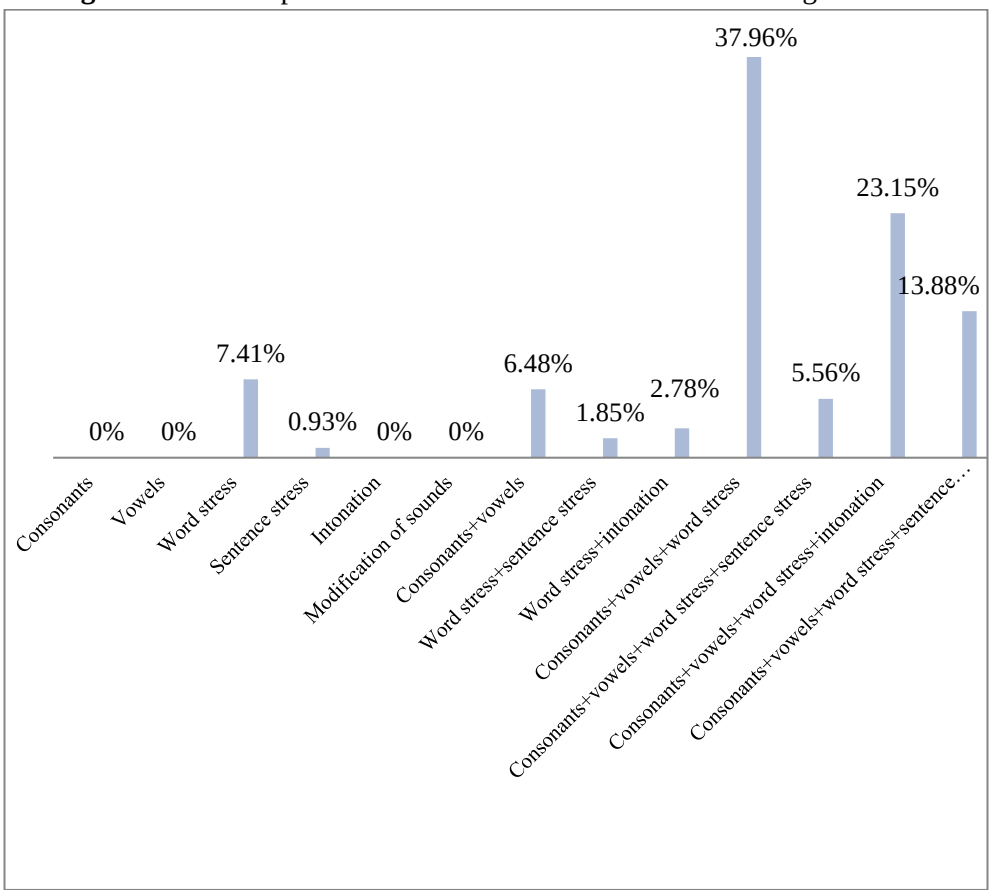
Fig.3. Difficulties students encounter when listening to spoken English



3.3. Elements of pronunciation students studied before coming to ENSB

Many students report having studied most elements of the English pronunciation except for the modifications of sounds at word boundaries such as assimilation, linking, reduction, and elision. 41 students (37.96%) studied 'consonants, vowels and word stress'; 25 students (23.15%) studied 'Consonants, vowels, word stress, intonation'; 15 students (13.88%) studied 'Consonants, vowels, word stress, sentence stress, and intonation', i.e. all the elements except for the modification of sounds (see Figure4).

Fig.4. Elements of pronunciation students studied before coming to ENSB



3.4. Descriptive statistics of the cloze dictation test

Table 2 summarizes the results of the cloze dictation test. The results show that the number of correct answers (614) is below average). Similarly, the mean (5.68) is very low and below average (the average should be 10). Accordingly, these findings indicated that found difficulties in recognizing assimilated words.

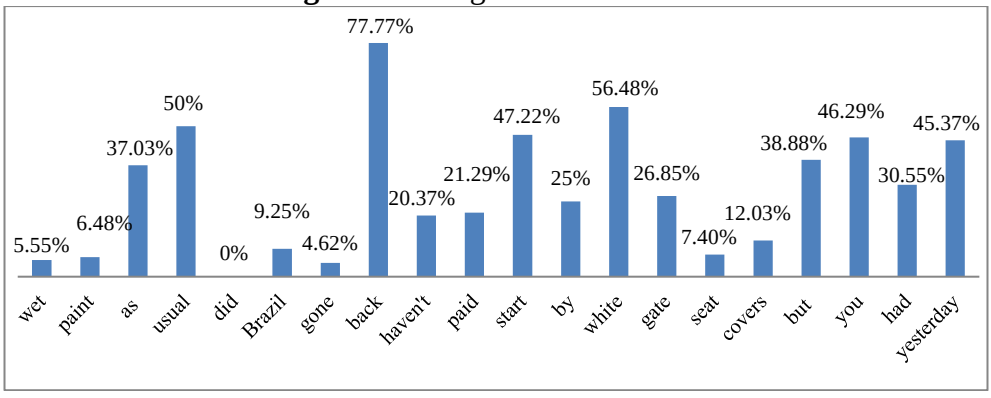
Table2. Descriptive statistics of the close dictation test

Variable	Number of students	Number of items	Correct answers	Mean
Cloze dictation test	**108**	**20**	**614**	**5.68**

3.5. Percentage of correct items

Figure5 below shows the percentage of correct items. Almost all the percentages of correct items are below average except for 'back" (77.77%) and 'white' (56.48%). This means that the students were unable to perceive not only the words that underwent assimilation in their final consonants but also the adjacent words, i.e. the words that caused their modification. Accordingly, the percentage of the words 'wet' (5.55%), 'paint' (6.48%), 'did' (00%), Brazil (9.25%), 'gone' (4.62%), 'seat' (7.40%) and 'covers' (12.03%) is very low. Another point worth mentioning is that the percentage of the words which underwent assimilation is lower than the percentage of the adjacent words except for the word 'start' (47.22%) which is higher than 'by' (20%), and the word 'white' (56.48%) which is higher than 'gate' (26.85%). However, the percentages of the words that underwent coalescent assimilation, such as 'as usual' (37.03% and 50%, respectively), 'but you' (38.88% and 46.29%, respectively), and 'had yesterday' (30.55 and 45.37%, respectively), are not as low as the words which underwent regressive assimilation (the rest of the words had all underwent regressive assimilation). More importantly, not only are the percentages of the monosyllabic words (i.e. words that contain one syllable) low but also the percentages of the polysyllabic words (i.e. words that contain more than one syllable) such as 'usual' (50%), 'Brazil' (9.25%), 'covers' (12.03%) and 'yesterday' (45.37%).

Fig.5. Percentage of correct items



4. Discussion

This section discusses the results of the data analysis and attempts to answer the two research questions stated in the introduction.

4.1 Students' perception of the difficulties encountered when listening to spoken English

All the students stated that they listened to English outside the classroom to a varying degree using different materials, such as movies, online videos, and to a lesser extent to songs and TV programs. These results were expected since movies and online videos provide not only sounds but also pictures which may attract learners and help them better understand the language. In Hamouda (2013)'s study, the majority of the students also showed preference for watching British or American television channels as a learning method to improve their listening comprehension. Hamouda (op.cit.) also noted his participants enjoyed this entertaining experience through the images displayed on TV. Today, with the availability of the Internet, students have access to a wider range of resources that enable them to enhance their English learning in general and their listening comprehension in particular outside the classroom. In fact, watching online videos, such as podcasts, might be quite beneficial to practicing listening.

Regarding the present study, and the participants' perception of their listening difficulty, the majority considered listening to spoken English neither difficult nor easy, although in most of the studies conducted on ESL/ EFL learners (Diora and Rosa, 2020; Goh, 2000; Hamouda, 2013; Izzah and Keeya, 2019; Nowrouzi et al., 2015; Nushi and Orouji, 2020), the subjects viewed listening to English as a difficult task.

Over 50% of the subjects considered new vocabulary and speed of delivery as the two reasons for not understanding spoken English, followed by pronunciation and unfamiliar topics. These results seem to corroborate the previously mentioned studies conducted in different ESL/EFL contexts. Many students perceived speed of delivery and pronunciation as responsible for their listening difficulties. These features of pronunciation were hardly studied before coming to ENSB and were therefore problematic. Besides, none of them reported having studied modifications of sounds at word boundaries such as assimilation, linking, and elision. This might explain the students' low results on the cloze dictation test.

4.2. Effect of sound modification at word boundary and assimilation on students' recognition of English words

The results of the cloze dictation test were below average, with a mean not exceeding 5.68. Similarly, the percentages of correct items were mostly below average. These results seem to be in line with the results obtained by Sung (2018) and Zahedi et al. (2007).

The fact that the students could not recognize the words that underwent assimilation was expected due to their lack of the perceptual saliency. What was not expected, however, was the low percentages of the adjacent words. In other words, the students found it difficult to recognize words that

underwent modifications in their final consonants and the words that caused their modifications as well. But the results also indicated that the percentages of the words that underwent coalescent assimilation were not as low as the percentages of the words that underwent regressive assimilation. Furthermore, the students' inability to recognize assimilated words was not only limited to one-syllable word, but also to two-syllable words and even three-syllable word.

To summarize, even though all the students stated that they listened to all types of materials outside the classroom, they were unable to recognize English assimilated words. These findings would corroborate the results yielded by Gao (2014), Goh (2000), and Hamouda (2013). These researchers also revealed ESL/EFL students' inability to recognize familiar words due to their unawareness of features of connected speech. Teachers tend to focus heavily on practicing comprehension, as pointed out by Field (1998, 2000, 2004), but should include more bottom-up tasks in their classes, such as dictation, to enhance their students' comprehension of connected speech and assimilation specifically. .

5. Conclusion

The purpose of this paper is to report a study conducted with first year students of English and to draw attention their difficulties when listening to spoken English, especially when dealing with connected speech and assimilation. The results of the study indicate that many participants cannot perceive words that undergo sound modifications at word boundaries. Based on these findings, we would suggest that students receive explicit and systematic instruction on how sounds change in the stream of speech in order to improve their listening comprehension skills. Teachers are also recommended to include more bottom-up activities in their listening classes to reduce comprehension difficulties and help even those students with a higher level of English proficiency since these phonological processes are among the most difficult to acquire in a FL.

6. References

-Alzamil, J. (2021). Listening skills: Important but difficult to learn. Arab World English Journal (AWEJ), 12(3), 366-374.

-Anderson, J. R. (1995). Cognitive Psychology and its Implications. US: W.H. Freeman.

-Ashton, H. & Shepherd, S. (2012). Work on your Accent. London: Collins.

-Assaf, A. H. (2015). The difficulties encountered by EFL learners in listening comprehension as perceived by ELC students at the Arab American University-Jenin, (Published Master Thesis). An-Najah National University: Nablus, Palestine.

-Baghrahi, A. K., Shariati, M. & Tajadini, M. (2014). The effects of assimilation and elision teaching on listening comprehension on EFL junior

high school students. International Journal of Language Learning and Applied Linguistics World (IJLLALW), 5(1), 203-210.
-Brown, G. (1990). Listening to Spoken English. London: Longman.
-Brown, J. D. & Hilferty, A. (1986). The effectiveness of teaching reduced forms of listening comprehension. *RELC Journal*, 7(2), 59-70.
-Carreira, J. M. (2008). Effects of teaching reduced forms in university preparatory Course. JALT 2007 Conference Proceedings, pp. 200-205. Tokyo: JALT.
-Celce-Murcia, M., Brinton, D. M., & Goodwin, J. M. (1996). Teaching Pronunciation: A Reference for Teachers of English to Speakers of Other Languages. Cambridge: Cambridge University Press.
-Crawford, M. J. (2006). A study on teaching reductions perceptually. In K. Bradford-Watts, C. Ikeguchi, & M. Swanson (Eds.) JALT (2005) Conference Proceedings, 434-443. Tokyo: JALT.
-Cruttenden, A. (2014). Gimson's Pronunciation of English. New York: Routledge.
-Crystal, D. (2008). A Dictionary of Linguistics and Phonetics. USA: Blackwell Publishing.
-Dalton, C. & Seidlhofer, B. (1994). Pronunciation. New York: Oxford University Press.
-Darcy, I., Ramus, F., Christophe, A., Kinzler, K. & Dupoux, E. (2009). Phonological knowledge in compensation for native and non-native assimilation. In F. Kugler, C. Fery and R. van de Vijer, eds., Variation and Gradience in Phonetics and Phonology. Berlin: Mouton de Gruyter.
-Diora, L. & Rosa, R. N. (2020). An analysis of students' difficulties in listening comprehension: A descriptive study at English language and literature department FBS UNP. Journal of English Language Teaching (JELT), 9(1), 87-98.
-Dirven, R. & Verspoor, E. M. (2004). Cognitive Exploration of Language and Linguistics. John Benjamins Publishing Company: USA.
-Field, J. (1998). Skills and strategies: towards a new methodology for listening. ELT Journal, 52(2), 110-118.
-Field, J. (2002). The changing face of listening. In Jack Croft Richards & Willy A. Renandya (eds.), Methodology in Language Teaching: An anthology of Current Practice, 242–247. Cambridge: Cambridge University Press.
-Field, J. (2003). Promoting perception: Lexical segmentation in 2L listening. ELT Journal, 75(4), 325-334.
-Field, J. (2004). An insight into listeners' problems: too much bottom-up or too much top-down? System, 32(3), 363-377.
-Gao, L. (2014). An Exploration of L2 Listening Problems and their Causes (Unpublished doctoral dissertation). University of Nottingham, UK.

-Gaskell, M. G. & Marslen-Wilson, W. D. (1996). Phonological variation and inference in lexical access. Journal of Experimental Psychology: Human Perception and Performance 22, 144-158.
-Gaskell, M. G. & Marslen-Wilson, W. D. (1998). Mechanisms of phonological inference in speech perception. Journal of Experimental Psychology: Human Perception and Performance 24, 380-396.
-Gimson, A. C. (1968). An Introduction to the Pronunciation of English. London: Edward Arnold.
-Goh, C. C. M. (2000). A cognitive perspective on language learners' listening comprehension problems. System, 28, 55–75.
-Gokgoz-Kurt, B. (2016). Attention Control and The Effects of Online Training in Improving Connected Speech Perception by Learners of English as a Second Language, (Doctoral dissertation). University of South Carolina: USA. Retrieved from http://scholarcommons.sc.edu/etd/3560
-Hamouda, A. (2013). An investigation of listening comprehension problems encountered by Saudi students in the EL listening classroom. International Journal of Academic Research in Progressive Education and Development, 2(2), 113-155.
-Hamouda, A. & Aljumah, F. (2017). An investigation of the relationship between proficiency level and connected speech comprehension. IJELR, 4(2), 54-74.
-Henrichsen, L. E. (1984). Sandhi-Variation: a filter of input for learners of ESL. Language Learning, 34(3), 103-123.
-Izzah, L., & Keeya, K. (2019). Common listening challenges: Indonesian EFL learners' perception. English Language in Focus (ELIF), 1(2), 95–106.
-Marks, J. & Bowen, T. (2012). The Book of Pronunciation: Proposals for a Practical Pedagogy. Cambridge: Delta Publishing.
-Mitterer, H., & Blomert, L. (2003). Coping with phonological assimilation in speech perception: Evidence for early compensation. Perception & Psychophysics 65(6), 956-969.
-Musfirah, S., Razali, K., & Masna, Y. (2019). Improving students' listening comprehension by teaching connected speech. Englisia: Journal of Language, Education, and Humanities, 6(2), 64-74.
-Norris, R.W. (1994). Keeping up with native speaker speed: An investigation of reduced forms and deletions in informal spoken English. *S*tudies in Comparative Culture**,** 25, 72-79.
-Norris, R.W. (1995). Teaching reduced forms: Putting the horse before the cart. English Teaching Forum, 33, 47-50.
-Nowrouzi, S., Tam, S. S., Zareian, G., & Nimehchisalem, V. (2015). Iranian EFL students' listening comprehension problems. Theory and Practice in Language Studies, 5(2), 263-269.
-Nunan, D. (1992). Research Methods in Language Learning. Cambridge: Cambridge University Press.

-Nushi, M., & Orouji, F. (2020). Investigating EFL teachers' views on listening difficulties among their learners: The case of Iranian context. SAGE Open, 10(2), 1-16.
-Richards. J. C. (1983*).* Listening comprehension: Approach, design, procedure. TESOL Quarterly. 17(2), 219-240.
-Roach, P. (1996). English Phonetics and Phonology: A Practical Course. Cambridge: Cambridge University Press.
-Skandera, P. & Burleigh, P. (2005). A Manual of English Phonetics. Germany: Gunter Narr Verlag Tubingen.
-Suleiman Al Qunayeer, H. (2020). The Relationship between English Language Proficiency Level and Comprehension of connected Speech Aspects. British Journal of English Linguistics 8(2), 35-57.
-Sung, E. (2018). Compensation for phonological assimilation: Obstruent nasalization and coronal place assimilation. Linguistic Research 35(1), 145-178.
-Sung, E., Kim, Y., & Lee, S. (2019). The effects of sentential context on the perception of assimilated speech by L2 listeners. Language Research *55*(1), 1-32.
-Veselovska, G. (2016). Teaching elements of English RP connected speech and Call: Phonemic assimilation. Education and Information Technologies, 21(5), 1387-1400.
-Yuliana, A., Hadi, I., & Panjaitan, E. R. (2020). Phonemes assimilation in Ed Sheeran's Songs. Journal of Arts & Education, 1(1), 25-33.
-Zahedi, H., Sahragard, R., & Nasirizadeh, Z. (2007). The effects of phonological features on Iranian EFL learners listening comprehension. Journal of Pan-Pacific Association of Applied Linguistics, 11(2), 115-103.

7. APPENDICES

7.1. Appendix A: Questionnaire to Students

Dear Student,

The purpose of this questionnaire is to obtain your opinion and perception of your listening and pronunciation experiences of the English language. Please tick the answer that best suits you or answer the questions as clearly as possible. All the information you provide will remain anonymous.

Background Information

1-Gender: Male ☐ Female ☐

2-Age: ……

3-How long have you been learning English?

…….....

4-Do you have any hearing problem?

Yes ☐ No ☐

Language Information

5-Do you listen to English outside the classroom?

Yes ☐ No ☐

6-If yes, which of the following materials do you listen to?

a-TV programs ☐
b-Movies ☐
c-Online videos ☐
d-Songs ☐
e-Other, please specify .....

7-Do you think that listening to spoken English is:

Very difficult? ☐ difficult? ☐ either difficult nor easy? Easy? Very easy? ☐

8-When listening to spoken English, which of the following difficulties do you encounter? (Please tick all the elements which correspond to you).

a-Unfamiliar topics ☐
b-New vocabulary ☐
c-Pronunciation ☐
d-Speed of delivery ☐
e-Other, please specify……..…….....

9-What were the elements of English pronunciation you studied before coming to ENSB? (tick all the elements you studied)

a-Consonants ☐
b-Vowels ☐
c-Word stress ☐
d-Sentence Stress ☐
e-Intonation ☐
f-Modification of sounds at word boundaries. ☐

Thank you for your cooperation

7.2 Appendix B: Cloze dictation test

In this exercise, there are ten sentences. You will have to fill in the gaps in the sentences by writing what you hear from the recording.

1-Be careful-that's .....! (wet paint)
2-I expect there'll be a delay ..... (as usual)
3-..... win? (did Brazil)
4-I thought you'd ..... (gone back)
5-They ..... yet. (haven't paid)
6-We've got to..... six. (start by)
7-You'll see a .....on your left (white gate)
8-The ..... need cleaning. (seat covers)
9-.....always said it would be easy. (but you)
10-What was the meal .....? (had yesterday)