Contributions of new technologies to the teaching of English pronunciation

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ABSTRACT

One of the most significant changes in language classrooms over recent decades has been the introduction of ICTs. Despite a broad range of previous research in the field, little work has been done to date on assessing the benefits of teaching pronunciation through ICTs, something surprising in view of the large number of existing programs and other materials specifically designed to improve learners' pronunciation. This paper is intended to contribute to the field in that it will provide an overview of the materials currently available for teaching pronunciation through the use of ICTs, as well as an empirical preliminary study on ESP students' first contact with using ICTs for learning pronunciation. Results indicate that these students enjoyed using these technological tools and would like to use them again to practise their pronunciation.

Keywords*: Pronunciation, ESP student's opinions, apps, software, blogs, websites*

I. INTRODUCTION

Previous research in the teaching and learning of English has shown that more attention is usually paid to written skills than to spoken ones in EFL settings (Alonso 2014, Hornero et al. 2013, Calvo 2016a). Furthermore, within spoken skills, pronunciation has traditionally been neglected, to the point where it has been referred to as the *poor relation of the English teaching world* (Hughes 2002), *the orphan* (Gilbert 2010) or even *the Cinderella* (Underhill 2013) in language lessons.

Fortunately, this situation of neglecting the spoken skills is thought to be changing in the Spanish educational system, especially at the primary and secondary education stages, thanks to the introduction of new bilingual and multilingual programmes like CLIL, the hiring of native language assistants who are responsible for the oral component of the EFL subject, the implementation of the so-called skill-integration method thanks to the indications by the CEFR or the reduction on some occasions of the number of pupils per group so as to give students more opportunities to speak in the foreign language inside the classroom. Broadly speaking, following Grant (2014: 6),

two different groups of approaches to the teaching of pronunciation can be distinguished. On the one hand, we find *traditional approaches*, in which the main focus was on individual sounds (therefore, only segmental pronunciation was considered); pronunciation tasks consisted in decontextualized drills and pronunciation was taught in stand-alone courses, hence, isolated from the rest of the curriculum. On the other hand, in the so-called *current approaches*, emphasis is expected to be placed on both segmentals and suprasegmentals and tasks should include aural-oral drills as well as (semi-) communicative practice formats. Moreover, at present, we can still find courses which specifically revolve around pronunciation although others, in which pronunciation is integrated into different content or skills areas (often speaking and listening), are gradually gaining importance.

As could be expected, the approaches currently used to teach pronunciation should resemble the main features of the modern approaches. Nevertheless, despite the changes mentioned above, recent research has shown that the role of pronunciation in EFL textbooks has not changed that much in the last decades, since: a) it continues to appear in clearly isolated sections, on most occasions in separate tables (Calvo 2016b); b) the pronunciation activities present in modern ELF course books used in many European countries, including Finland, Poland, France and Spain, continue to follow traditional approaches, i.e. drills and sound discriminations;[i] c) there continues to be a strong emphasis on perceptual oral skills in textbooks addressed to Spanish speakers (Calvo 2016b); and, d) textbooks fail to include both segmental and suprasegmental issues in a homogeneous way. For example, Derwing et al. (2012) found far more sections on suprasegmental issues than on segmental ones.

To provide some empirical data to support these facts, in one of my previous studies (2016), I analysed the role of pronunciation in 30 EFL textbooks addressed to Spanish EFL learners in different educational stages (both the students' books and the corresponding workbooks). Two groups were distinguished: a) Group 1: high school textbooks, used in (Post-) Obligatory Secondary Education; and, b) Group 2: textbooks used at university level and in some language schools. Some of the findings included:

a) a general tendency for pronunciation to be present in fully-isolated sections in the majority of the course books within Group 1 and in some of those in Group 2;

b) more attention is paid to suprasegmental issues than to segmental ones in both groups of textbooks. To exemplify, in Group 2, there were more than 100 sections on word and sentence stress, 70 on intonation but only 28 on the /ɪ/ sound and 21 on schwa. This latter result is surprising, especially if we take into consideration the fact that Spanish students of all ages and proficiency levels have problems with several English sounds, especially vowels like schwa, /əʊ/ and the distinction between some short vowels and their corresponding long counterparts, /æ, ɑ:/, /ɪ, i:/ and /ɒ, ɔ:/ (Calvo 2011);

c) the format of most of the tasks is clearly repetitive. More specifically, most of them require some type of listening (*listen and repeat*, *listen and check*, *listen and discriminate*, *listen and read*, *listen and write*) or discrimination (*suprasegmental discriminations*, *segmental discriminations*). In broad terms, in both groups of textbooks, most of the activities follow traditional patterns for practising pronunciation, there is a clear predominance of tasks to emphasise perceptive oral skills over productive ones (*listen and discriminate*, *listen and check*, *segmental and suprasegmental discriminations*, etc.) and the few productive types of tasks mainly entail simply listening to and repeating random words and/or sentences, that is, tasks with no or very little communicative function.

Hence, all in all, there is a need for a new approach to the teaching of pronunciation, one based mostly on communication and integration within the rest of the skills. Moreover, this approach should also be more motivating, creative and engaging for students. In my view, one way of filling this gap would be to introduce the use of ITCs in the classroom, since: a) they "have become central to language practice" (Motteram 2013: 5); b) they are considered to add variety to the language classroom (Kern 2013); c) they represent authentic (Kern 2013, Pim 2013) and very updated materials, unlike most tasks present in textbooks, which have been consciously recorded and edited; and, d) they can be used with students of all ages (Pim 2013). Moreover, Spanish students are more than accustomed to using technological devices such as mobile phones, tablets and computers on a daily basis; therefore, using these devices to teach the foreign language is very likely to motivate them.

Little by little, specific technological materials for learning and teaching pronunciation are being devised and, consequently, some studies have started to be conducted on the

use of ICTs to teach English pronunciation. Most of them can be divided into two thematic groups: a) studies which describe certain technological materials that can be used to learn and teach pronunciation by considering these materials as "recent developments in English pronunciation teaching and learning" (Setter 2008: 447); and, b) studies that analyse the effects of using ICTs for teaching and learning English pronunciation.

Within the first group, we can find studies like Setter (2008), Fouz (2012) and Walker (2014). Setter (2008) distinguishes between *printed materials* and *web-based resources* for teaching pronunciation. Within the second group, she focuses on a few software applications and websites like *Streaming Speech* or *The Sounds of Spoken English*. Fouz (2012) reviews some of the most important mobile apps available for learning pronunciation (some of which will also be described in this paper). In a similar vein, Walker (2014) also describes a few technological apps and software applications by classifying them into three main categories: a) *tools for tuition*; b) *tools for listening*; and, c) *tools for recording*.

Examples of recent studies aimed at analysing the effects of using CALL or CAPT approaches are Jolley (2014), Kim (2012), Luo (2016) and Mompean and Fouz (2016). Both Jolley (2014) and Kim (2012) investigated whether using a CALL approach is an effective way of helping students to improve their pronunciation; the participants in Kim's (2012) study were two adult ESL learners, whereas Jolley's (2014) were ESL missionaries. Kim's participants used the TEAM training programme (Technology Enhanced Accent Modification); the results indicated that these students appreciated the visual feedback received and this visual method did help them improve their pronunciation. Jolley (2014) conducted her MA dissertation on the effects of using a CALL approach to help students improve both their productive and perceptive skills regarding prosodic features. In the end, the participants who followed this programme improved both their perceptive and productive suprasegmental skills, although the improvement was better at a perceptive level. Mompean and Fouz (2016) designed a study in which they asked Spanish students at language schools to listen to and repeat some target words (commonly mispronounced English words) in Twitter messages. Along similar lines, Luo (2016) analysed the benefits of using recordings outside the classroom to improve students' English pronunciation. The participants also improved

in comparison to the control group, who had only received an in-class approach to English pronunciation.

Although all the previous studies can be regarded as of extreme interest for both teachers and researchers, as mentioned above, they either describe some resources available for teaching pronunciation or are concerned with students' progress in certain segmental and/or suprasegmental features by using one particular technique or programme. There is hence a lack of studies that combine both things and go beyond. Moreover, to the best of my knowledge, little research has been conducted on students' actual views on using specific software, apps or websites to learn English pronunciation.

This paper, therefore, intends to be a first approach to filling this gap, as it will include a description of some useful resources as well as a preliminary study on ESP learners' opinions regarding the design and usefulness of these materials as a means for them to practise English pronunciation outside the classroom. The most important research questions this article will thus attempt to answer are:

a) What technological-based materials currently exist to learn and/or teach English pronunciation? How can they be classified?

b) What are the advantages and disadvantages of these technological resources? How can they be used inside and/or outside the classroom?

c) What are students' opinions on some of these materials? Do they like them? Would they use them on a daily basis to learn English pronunciation?

In order to fulfil these aims, this paper will be divided into three main parts. Firstly, some of the most important technological resources available for teaching pronunciation will be described. These materials will be divided into three main groups: a) *software and other programs*; b) *apps*; and, c) *websites, blogs, tutorials and the use of social networks*. Secondly, a small experiment will be conducted with ESP students studying a four-year university degree in Tourism and Hospitality. This experiment will analyse students' first impressions after being asked to try out some of these technological tools outside the classroom. Finally, in the last part, some conclusions and teaching implications will be outlined together with some suggestions for possible activities

which could be performed either inside or outside the classroom to teach pronunciation in an engaging and integrating way with the help of new technologies.

II. TECHNOLOGY-BASED MATERIALS TO LEARN AND TEACH ENGLISH PRONUNCIATION

II.1.   Software and other programs

Generally speaking, we can divide the tools currently available into three main groups, following Walker (2014):

a) Programs with activities to help students improve their pronunciation at a segmental and/or suprasegmental level; in other words, pronunciation training programs like *Pronunciation Power*, *Streaming Speech*, *Connected Speech*, *Learn to Speak Clearly in English*, *Berlitz English Pronunciation Programme*, *Teach Yourself English Pronunciation*, *TP*, *FluSpeak*, *Clear Speech*, *Integral Inglés*, or *Tell me More Kids*;

b) Programs and websites which convert a text into phonetic transcription like *Photransedit*, *the Phonemic Chart Keyboard*, *Lingorado*, *IPA Online Keyboard*; and, thirdly,

c) Recording programs that allow students to record themselves speaking, some of which transcribe the spoken message into written form. Examples of these include *Recorder Pro*, *Dragon Dictate*, *Audacity* or *Wave Pad*.

Due to space limitations, not all of these programs can be described in detail in this paper; thus, a selection has been made taking into account criteria like their availability or their relevance for teaching pronunciation to Spanish learners of English. Moreover, out of the three types of software distinguished above, emphasis will be mainly placed on the training programs, as they specifically serve to help students improve their pronunciation and can be used with students of all levels of proficiency.

II.1.1. Programs with activities to help students improve their pronunciation at a segmental and/or suprasegmental level

As illustrated above, there are quite a few pronunciation training programs available nowadays which aim to help students improve their pronunciation of English. Among these, *Talk to Me English*, *Integral Inglés*, *Teach Yourself English Pronunciation* and *TP (Perceptual Training / Perceptual Tests)* are highly interesting.

Talk to Me English and *Integral Inglés* are quite homogenous in content and format, except for the fact that the instructions and activities in *Talk to Me English* appear in English whereas in *Integral Inglés* this information is in Spanish. The first is based on two CDs (one for Beginner/Intermediate students and the other for Intermediate/Advanced learners), whereas the second contains four, one for each level from Beginner to Advanced and a fourth one on Business English; moreover, both programs include headphones so that the user can listen to the audio files. Both of these programs are able to recognise voices and compare them with those of native speaker models. Furthermore, they identify pronunciation errors in those words that were not pronounced similarly enough to the native speaker's version. These materials also create intonation curves so that the learners can once again compare their own pronunciation of certain words and/or sentences to the model of intonation provided by a native speaker.

In general terms, the type of tasks that can be found in these two programs also coincide quite frequently. To exemplify, they both include *dialogues*, *picture-word associations*, *crosswords*, *ordering sentences*, *matchings*, *dictations* or *phonetics exercises*. It is worth mentioning that, although it may not seem so at the beginning, most of the task-types found in both programs continuously and constantly emphasise spoken language. For instance, a priori we would probably think of *crosswords* as written exercises in which we are given written clues to help us guess the answers. In these programs, however, students are first of all expected to listen to the words and then write them in the corresponding space within the crossword, i.e. there are no written clues. Similarly, to complete the *ordering-sentences* tasks, learners first have to pronounce the sentences aloud in the correct order so that the program can record them and then compare their answers to the native speaker model; only after students have said the sentences in the right order can they write the sentences down.

Hence, broadly speaking, these programs allow students to practise both their productive and perceptive oral skills and they emphasise both segmental and suprasegmental issues.

Some examples of the types of activities included in these programs in each unit can be found below in Figures 1 to 4. Figure 1 represents an example of the steps followed in a *sentence pronunciation task* (= pronunciación de frases). In the image on the left, we can see a list of sentences that students can choose from (these sentences appear after the students have chosen a specific sound they want to practise) and then, as can be seen in the image on the right, the native speaker model says the sentence aloud and shows the intonation pattern. The learners then have to press the record button and record themselves by saying the same sentence. Afterwards, the program shows the intonation pattern of the learners' version so that they can compare it to that of the model and the learner is assessed on their performance with a number of points. The process to be completed in the *word pronunciation tasks* (= pronunciación de palabras) is very similar, as can be seen in the two images in Figure 2 below.
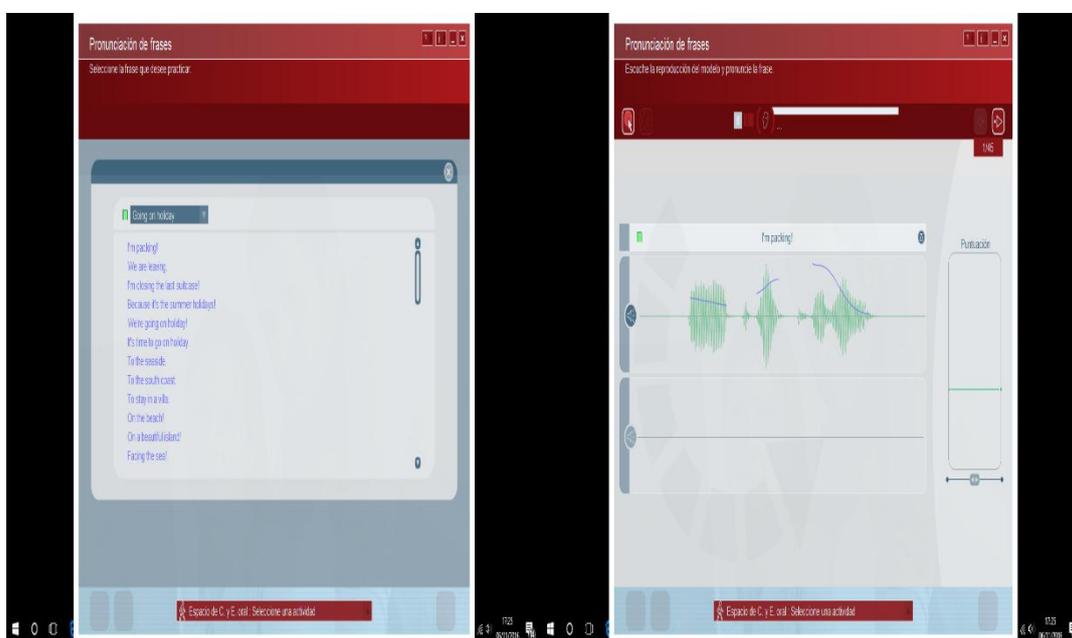
Figure 1. Example of a s*entence pronunciation* task, extracted from the program *Integral Inglés*.
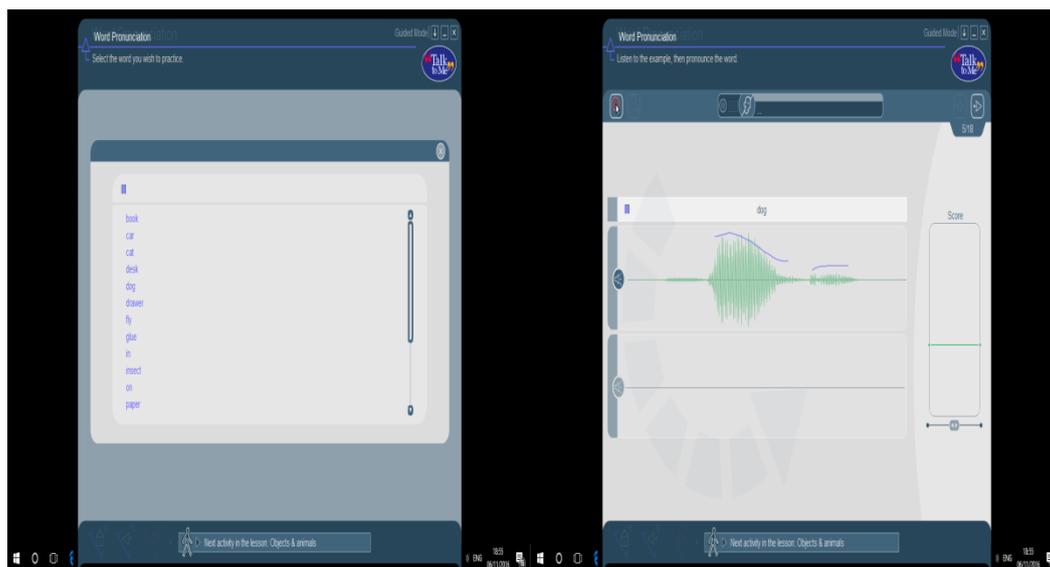
Figure 2. Example of a *word pronunciation* task, taken from the program *Talk to Me English.*

As mentioned above, no written hints are included in the *crosswords*, as can be seen in the image on the left in Figure 3. Similarly, students cannot see the written version of the words they have to find in the *word-search* games but instead have to listen and then look for them (cf. the image on the left in Figure 3).
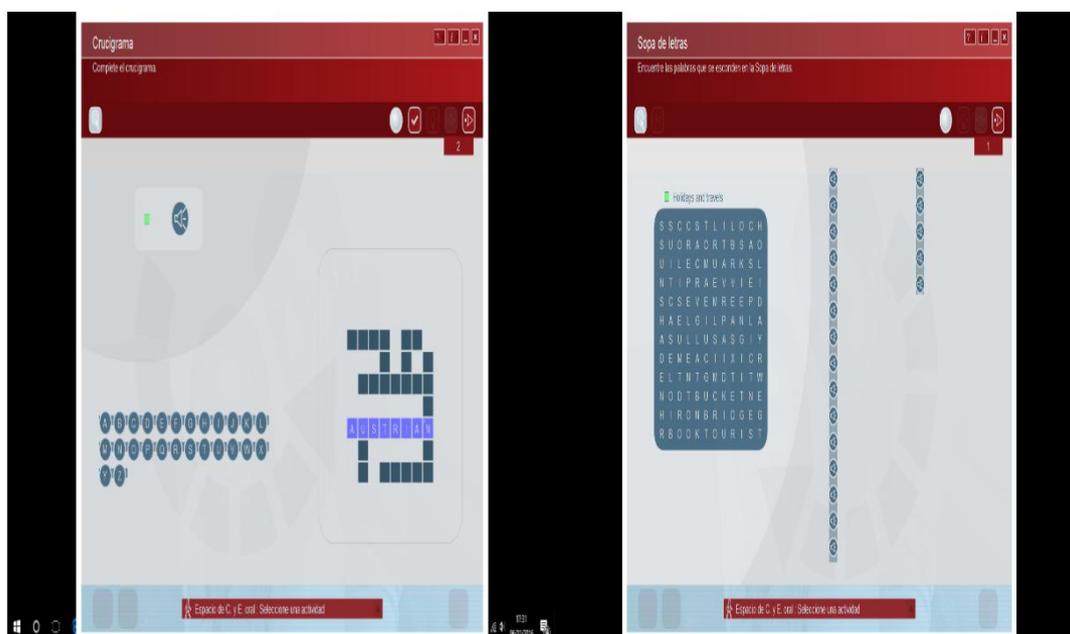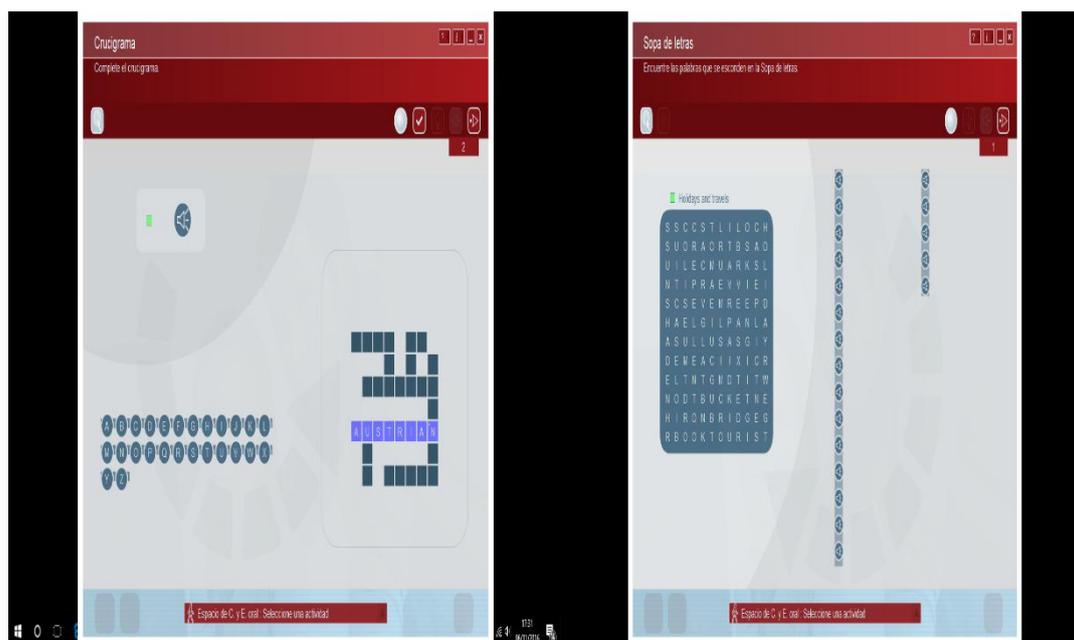
Figure 3. Example of a *crossword* and a *word search* activity, extracted from *Integral Inglés*.

Another advantage of these programs is that they include *phonetics exercises* (= ejercicios de fonética) in which the students choose a sound they would like to focus on, the native speaker model then says a word containing that sound and, once again, as in the *word* and *sentence pronunciation* activities, the learner has to record him- or herself and the program recreates the intonation patterns of both versions and gives them points. In addition, in this type of task students can see both images and short videos regarding how the selected sound is pronounced as well as a description of its manner and place of articulation so as to learn how to pronounce it correctly (cf. Figure 4 below). Once again, this information is given in Spanish in *Integral Inglés* and in English in *Talk to Me English*.

Figure 4. Example of a *phonetics task*, extracted from *Integral Inglés*.

Teach Yourself English Pronunciation (TYEP from now onwards), designed by Eva Estebas (2012), and *TP* (*Perceptual Tests / Perceptual Training*), created by Anabela Rato et al. (2012), are programs which revolve around minimal pairs. Hence, the types of activities that can be found in these materials are *listen to the words and choose the right option*, *listen to a few words containing sound X*, *repeat and imitate the speaker's pronunciation* or *listen to the pronunciation and decide whether the following words are pronounced with X or Z.*

TYEP is already pre-designed and is addressed specifically to Spanish students. Thus, the activities have been created taking into consideration the English sounds that

Spanish learners of English tend to confuse or have problems with when learning English pronunciation, like /æ, aː, ʌ/ or /ʃ, ʒ/. Apart from different tasks, descriptions and explanations are also provided for each minimal pair under study. More particularly, each section is divided into the following subsections: a) *common mistakes and expected pronunciation*. In this part students can first of all hear common mistakes made with certain minimal pairs and afterwards the correct or expected pronunciation of these words. For instance, *ban, barn, bun* are used to begin explaining the difference between the sounds /æ, aː, ʌ/; b) *tip description*. In this section, each of the two or three sounds to be practised is thoroughly described regarding aspects like manner and place of articulation and they are afterwards compared to each other; c) *common spellings*, where lists of the different spellings a particular sound can be represented by appear, as well as an example of a word containing this particular sound with this specific spelling; d) *ear training*, sections full of tasks to further practise the sounds under comparison; and, e) *other accents*, where, as its name indicates, in these parts students can find relevant information regarding how certain sounds and/or words are pronounced in other varieties of English, mainly General American. Figure 5 shows an example of what the design of the program looks like.
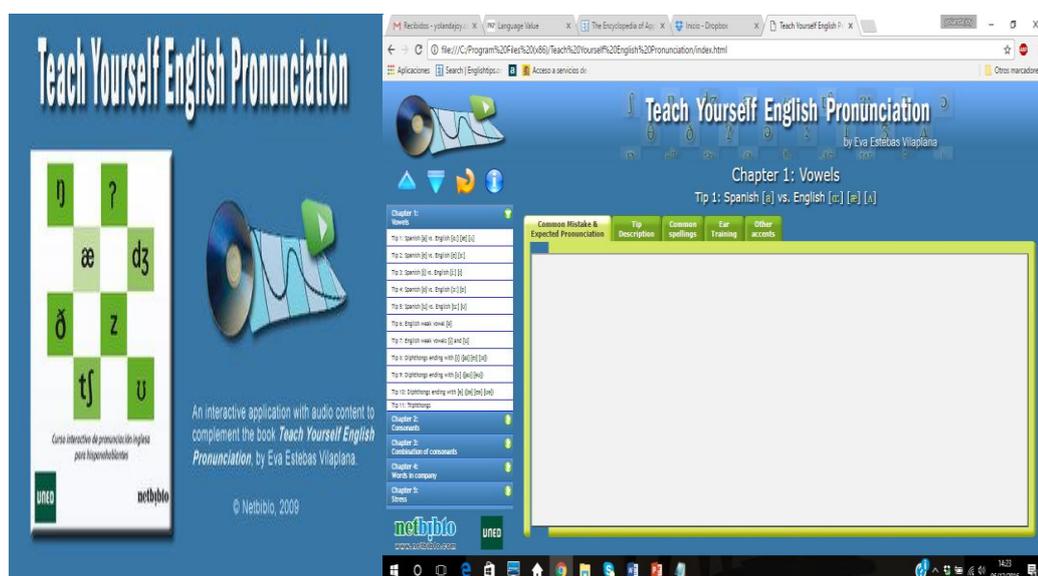
Figure 5. TEYP program design.

TP, on the other hand, is a program that allows teachers to create perceptual tests with visual, audio or audiovisual stimuli (see Figures 6-8 for some examples). Hence, teachers who work with Spanish EFL learners can create tests which focus on specific problematic sounds for Spanish speakers whereas EFL teachers in Germany, for instance, can create different tests adapted to German EFL speakers' problems. A huge advantage of TP is that students are given feedback at the end of the test depending on their performance.
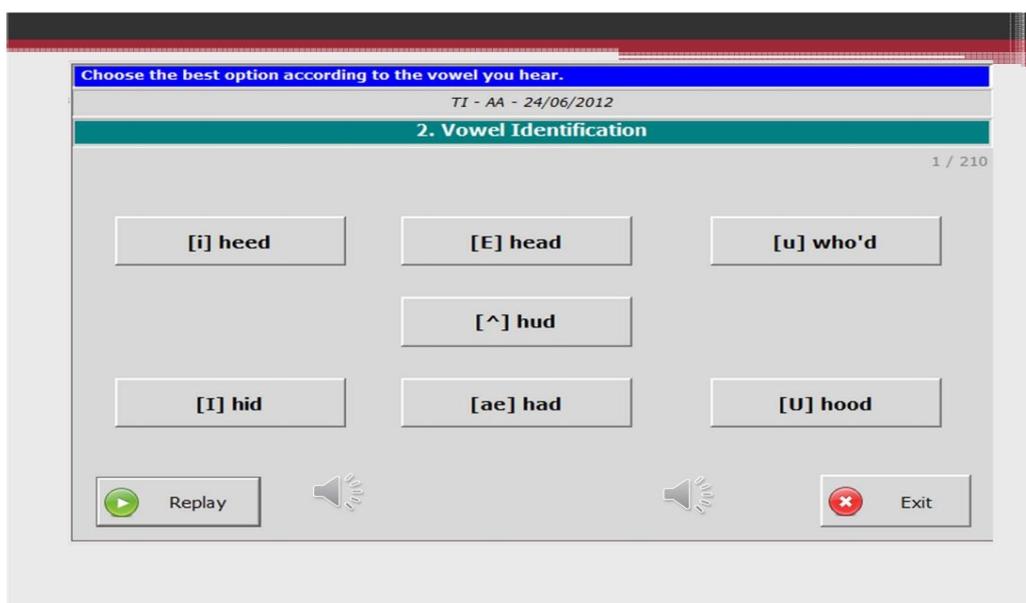
Figure 6. Example of an identification test taken from TP.
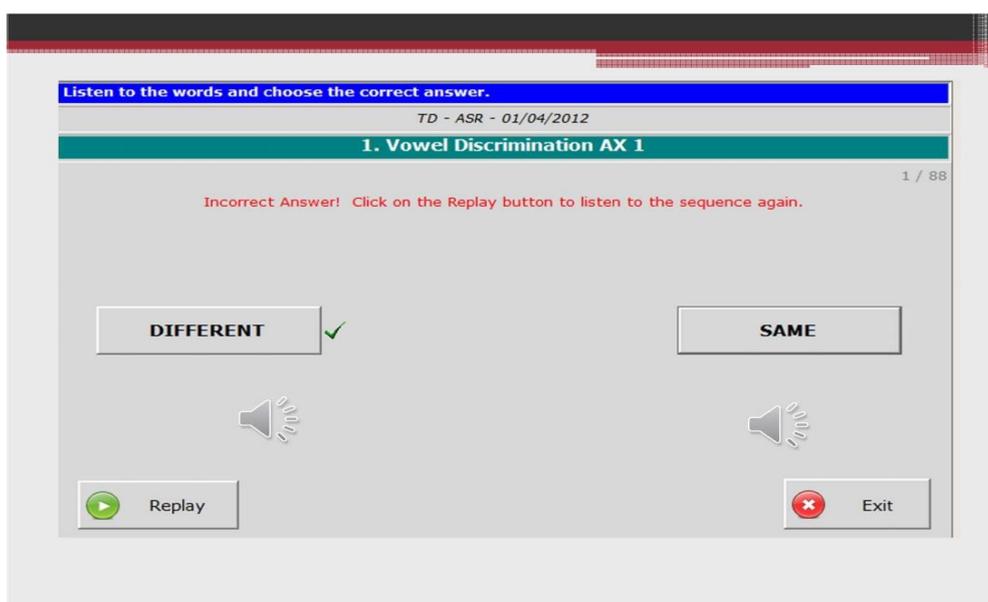
Figure 7. Example of a discrimination test taken from TP.
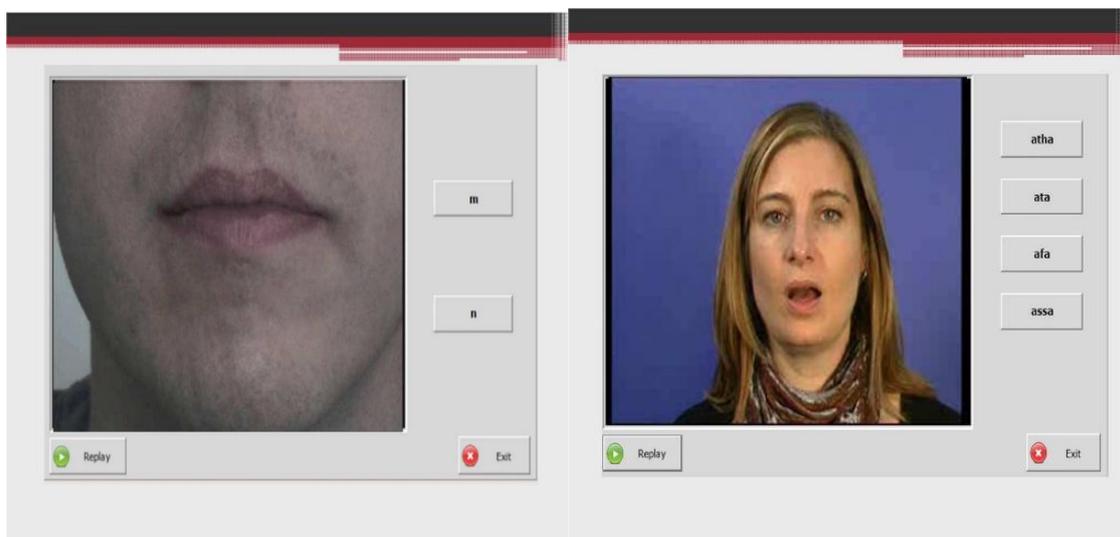
Figure 8. Examples of identification tests with different types of stimuli – visual versus audiovisual.

These two programs are aimed at training students' perceptive skills regarding aspects of segmental pronunciation. Therefore, their main drawback is that they do not allow learners to practise their intonation, rhythm or sentence stress patterns, whereas the two programs described above, *Talk to M*e and *Integral Inglés*, do. Finally, regarding availability, TYEP comes with a book which contains the exercises included in the program, whereas TP can be freely downloaded after one has registered on the corresponding website.[ii]

II.1.2. Programs and websites which convert a text into phonetic transcription

As explained above, other tools that students can use to improve their pronunciation are those which convert a text into phonetic transcription and vice versa. Some of these programs are *Photransedit*, *the Phonemic Chart Keyboard*, *Lingorado* and *IPA Online Keyboard*.

Photransedit is based on a group of applications. First, *text to phonetics*, which allows users to convert small texts into broad transcription using IPA symbols. As its name indicates, the *Phonetic Keyboard / Type IPA Phonetic Symbols* application can be used to type phonetic transcriptions. It is thus very useful for researchers, since it avoids

them having to insert symbols one by one in other programs such as Word, thereby also saving them a lot of time. Moreover, these transcriptions can be easily copied into other document formats such as Word files. Finally, the *transcription library* is a collection of texts that have already been transcribed, once again, allowing us to save time.[iii]
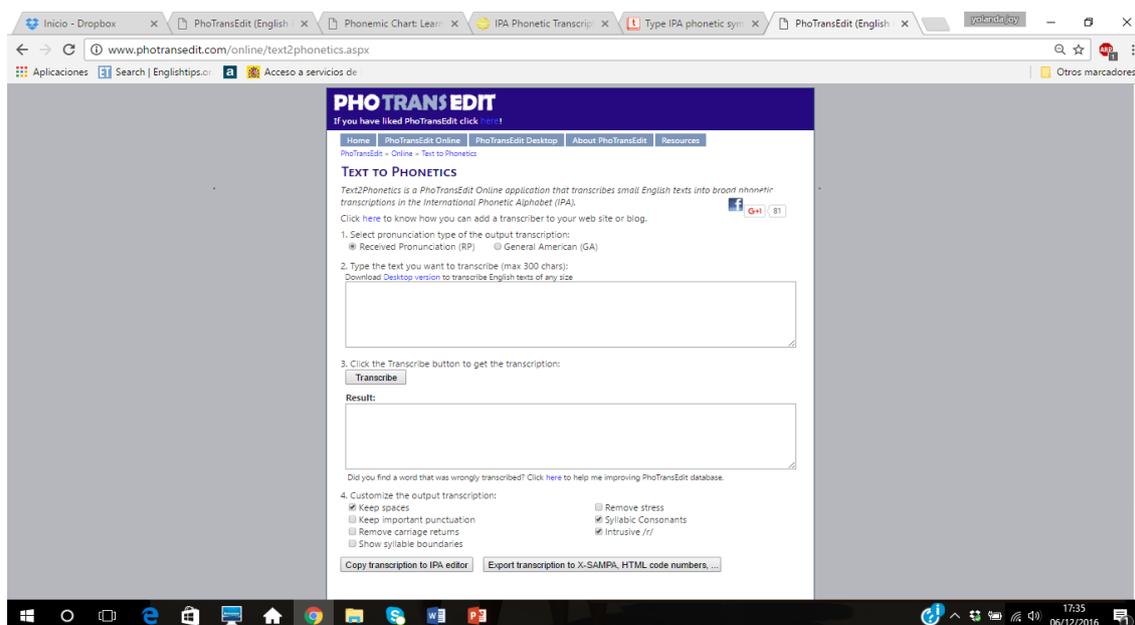
Figure 9. The *Text to Phonetics* app, which can be found on *Photransedit*.
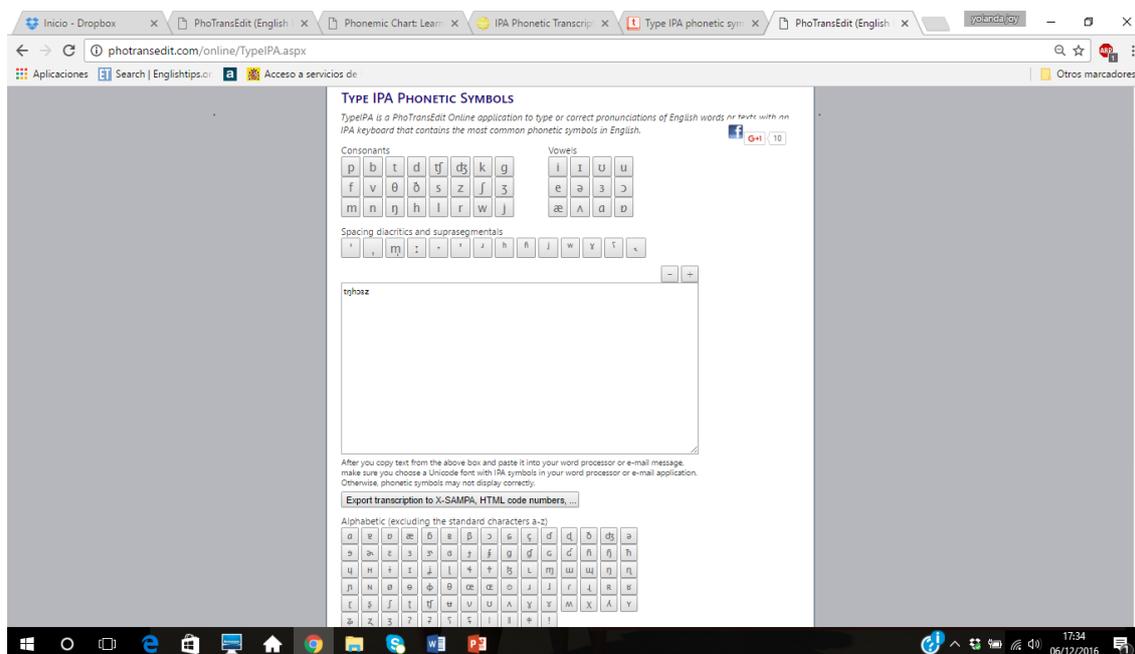
Figure 10. The *Phonetic Keyboard*, which can be found on the *Photransedit* website.

This program also offers the possibility of downloading a free desktop version of the *text to phonetics* program, which works without the need for an Internet connection. This desktop version basically offers the same functions as the online model, although it also gives us the opportunity to show or hide intrusive r's and/or syllabic consonants in the transcriptions or to remove stresses and length marks.
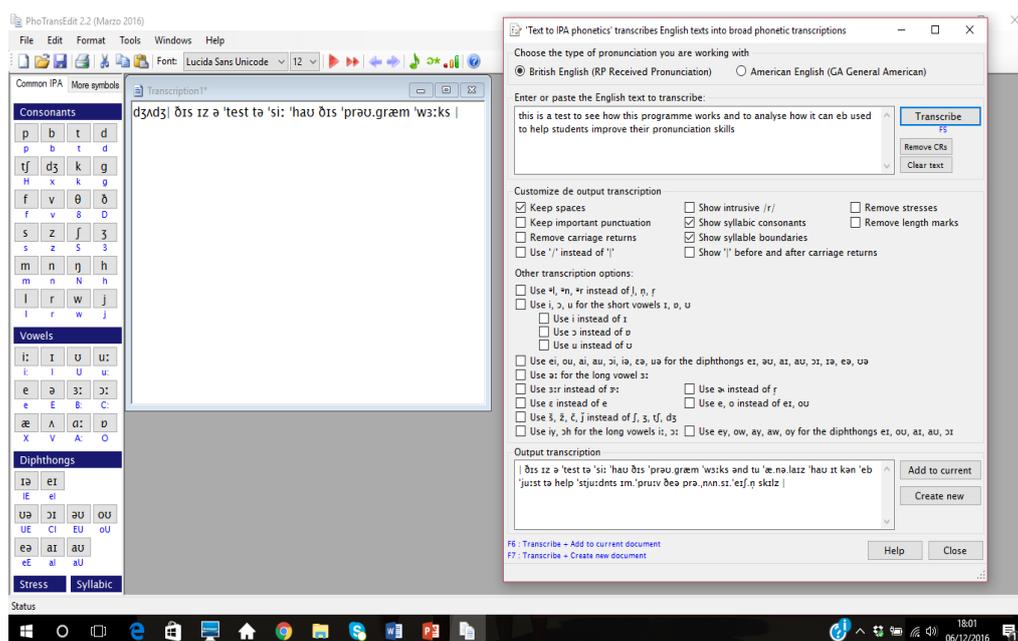
Figure 11. Desktop version of *Photransedit*.

Similarly to *Photransedit*, *Lingorado* also includes an online version as well as an app which can be downloaded from Google Play. An innovative feature of this program is that one can choose between three different ways of organising the information: a) by only showing the phonetic transcription; b) *side by side English text*, in which the transcription appears on the right and the orthographical text on the left; or, c) *line by line English text*, where the transcription appears above the orthographical text. Another interesting and unique function of this program is that it has integrated native speakers' voices that read out whatever written text one inserts. Moreover, it is possible to select whether we would like the transcriptions to show weak forms or not.
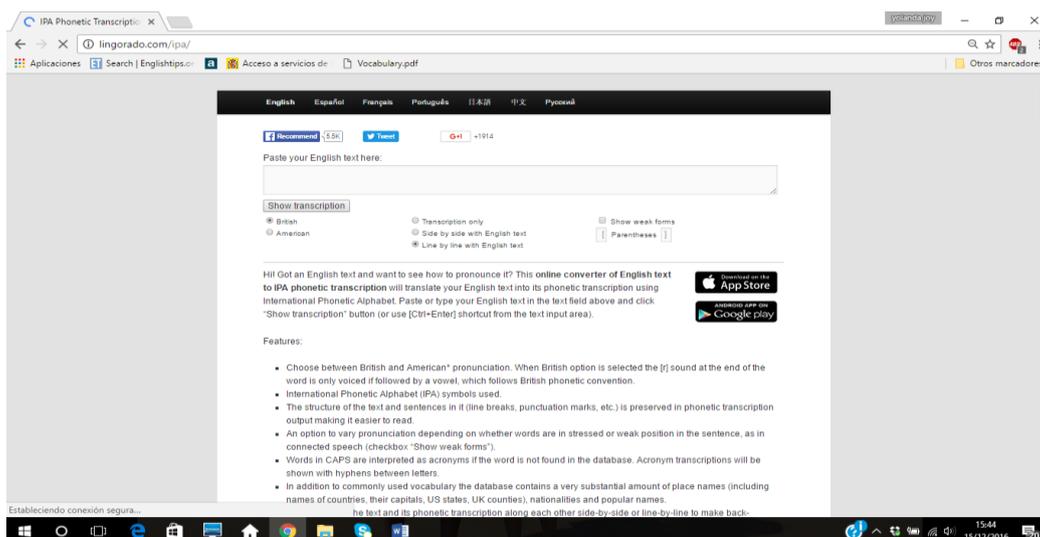
Figure 12. The main page of *Lingorado*.

The *Phonemic Chart Keyboard* and *Typeit* are two other programs which can be used to save time writing phonetic transcriptions.[iv]

The *Phonemic Chart Keyboard* allows users to show or hide hint words for each of the sounds so as to make it easier for them to identify each sound (for instance, *ship* for /ɪ/ and *sheep* for /iː/), as shown in Figure 13 below. An interesting feature is that both a British English and an American English variant can be selected.
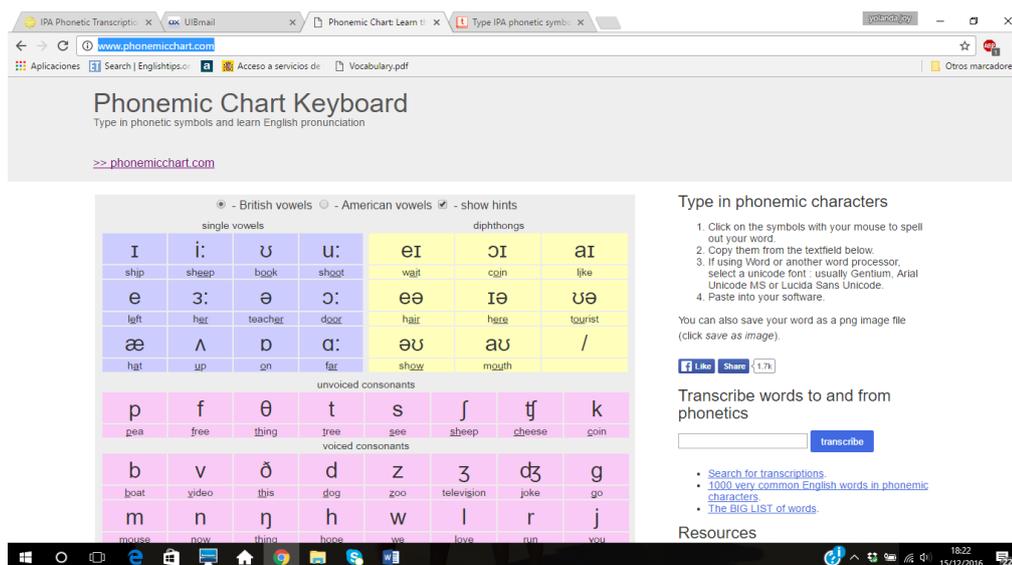
Figure 13. The main page of the *Phonemic Chart Keyboard*.

Typeit, on the other hand, works with IPA phonetic symbols and, if desired, users can download an upgraded version which can be viewed on any PC; this costs $12.50.
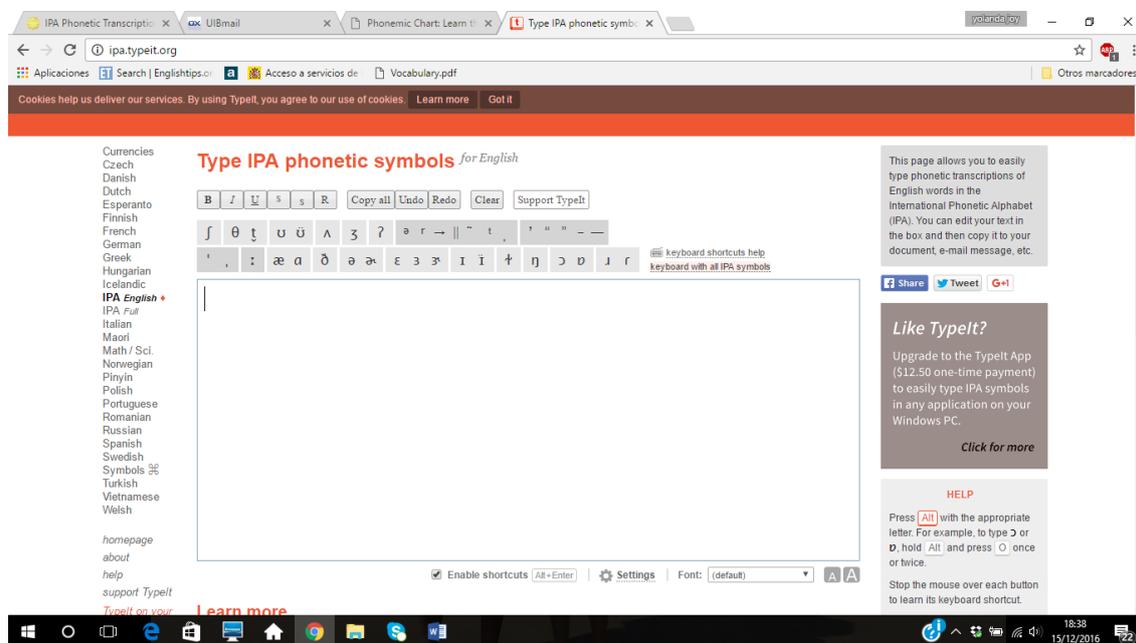
Figure 14. The main page of *Typeit*.

II.1.3. Recording programs

The last group of software that we can distinguish is, as mentioned above and following Walker's (2014) distinction, *recording programs*. According to Walker (2014), these programs can be divided into two main categories: a) programs that allow us to record ourselves and then edit the files, like *Audacity*, *WavePad* or *Recorder Pro*; and, b) speech recognition programs like *Dragon Dictation* or *Swype*.

Audacity, *WavePad* and *Recorder Pro* offer many possibilities with sound files, such as importing and exporting files, merging files, selecting only certain seconds or minutes of an audio file and discarding the rest, and so on. In broad terms, we can use these programs to edit our files by shortening or extending them or combining several files in one.[v] Although many things can be done with these programs, teachers should ask themselves whether their students will benefit from using programs like these. Perhaps they would be more useful for students studying phonetics at university level and not so helpful for primary or secondary students, for example.

Finally, speech recognition programs like *Dragon Dictation* and *Swype* could also be regarded as interesting and innovative technological tools for practising pronunciation although, as Walker (2014: 31) explains, there are also some disadvantages in using them:

> users need to be online to get this particular app to work, so that doesn't entirely satisfy 'the place' criterion. Nor are there any instructions (…). Another limiting factor is that the speech recognition software behind the app has problems dealing with connected speech and different speakers' accents (…)".[vi]

An innovative feature of *Swype* is that two languages can be used at once, that is, users can speak in two different languages and the program converts both into text.

II.2. Apps

Nowadays there are many apps for teaching pronunciation, most of which can be downloaded free of charge on our smartphones via Play Store. Some of these are *Clear Speech*, *Cool Speech*, *Sounds*, *English Pronunciation Trainer*, *Say It Out*, *New English File*, *Pronunciation Checker*, *Practice English Pronunciation* or *Learn English Pronunciation*.

Clear Speech was designed by Judy Gilbert for Cambridge University Press. Unfortunately, users have to pay to download this app, although it is not very expensive. It is addressed to intermediate students and it includes a series of games for them to practise both segmental and suprasegmental pronunciation. Another version of this app is also available for pre-intermediate level students. It is called *Clear Speech From the Start*.[vii]

Figure 15. Main page of the *Clear Speech* app.

Cool Speech was created by Richard Caudwell. The main skill emphasised in this app is listening, although there is also a section on pronunciation in which students can practise English vowels and consonants (see Figure 16 below).

Figure 16. Main page of the *Cool Speech* app.

As can be seen in Figure 16 above, this app includes a wide range of activities, from *dictations* to *hotspots*, the latter being sentences that are pronounced quite quickly, making them more difficult to understand. An advantage of the latter type of task is that

it allows learners to divide sentences into chunks and listen to particular words or even syllables or letters. Learners begin by doing some prototypical oral comprehension activities with multiple choice questions. However, if they click on the *Explore* button, they can then select complete sentences or small sections which they can afterwards hear in isolation, thus allowing them to focus also on connected speech processes (see Figure 17 below).
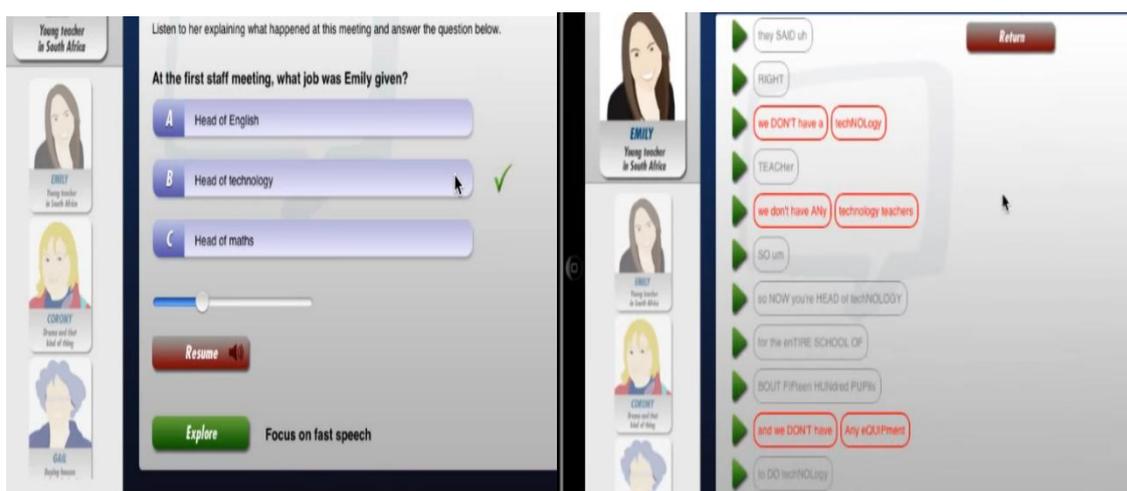
Figure 17. Hotspots activities within the *Cool Speech* app.

In the *consonants* and *vowels* sections, learners choose a particular sound and can then practise some sentences which contain this sound. Three speed options can be chosen: a) *original*; b) *careful* (that is, slower than the original); and, c) *fluent* (faster than the original). Students can also record themselves and later compare their version to the original one (see Figure 18).
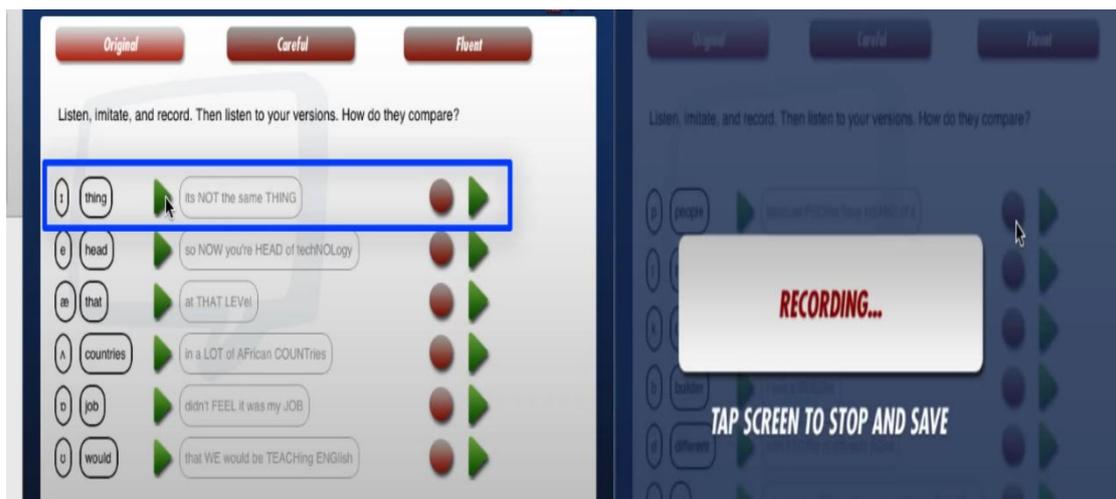
Figure 18. Recording process – Cool Speech app.

Another interesting app is *Sounds*, designed by Adrian Underhill for Macmillan. It revolves around the phonemic chart designed by Adrian Underhill himself.

Figure 19. Main page of the *Sounds* app.

Among other possibilities, it contains a list of words that are phonetically transcribed and, as with online dictionaries, students can listen to how a particular word is pronounced in both American and British English (see Figure 20).

Figure 20. Word list in the *Sounds* app.

This app also contains many activities for students to practise their reading, writing and listening skills concerning phonetic symbols and transcriptions. For instance, Figure 21 shows examples of tasks in which students have to transcribe words or to provide the orthographical form.

Figure 21. Some examples of activities in the *Sounds* app.

II.3. Blogs, tutorials and social networks

Nowadays many pronunciation experts (both teachers and/or researchers) have their own blog where they publish pronunciation tasks, give their opinions and review new materials published to teach pronunciation, offer theoretical explanations as to how to pronounce certain sounds and so on. Some professionals whose blogs are worth visiting are: John Wells, Adrian Underhill, Jane Setter, Mark Hancock and Anne MacDonald, Richard Caudwell, Alex Rotair, Marina Cantarrutti, Sidney Woods, John Maiden, Jack Windor Lewis or Thelma Marques.

Out of these, I would personally recommend Mark Hancock and Annie MacDonald's blog[viii] since it is full of engaging, creative and innovative material to teach EFL, including pronunciation. Particularly useful are their activities labelled as w*rong lyrics* in which they substitute the original lyrics of a song for other words that both native and non-native speakers may understand instead, due to processes like homophones, speed, connected speech processes or simply because the singers pronounce it differently because of their accent.

Another highly recommendable resource is Adrian Underhill's series of tutorials on Youtube in which he explains in a simple way different aspects of English pronunciation, from vowels and consonants to learning how to use the phonemic chart. Although these videos, which are part of the Macmillan ELT series, are mainly addressed to teachers to help them learn how to teach pronunciation, some of them may also be of interest to students in their learning of English sounds.

III.PILOT STUDY ON STUDENTS' FIRST CONTACT WITH USING NEW TECHNOLOGIES FOR LEARNING PRONUNCIATION. AN OPINION-BASED STUDYV. CONCLUSIONS

As mentioned in the introduction, to my knowledge, there are very few studies which review the technological resources currently available for teaching pronunciation and at the same time provide empirical data on students' opinions about using these materials to help them improve this important component of their spoken English. This preliminary study hence intends to fill this gap as it analyses the first impressions of ESP students studying a university degree in Tourism and Hospitality at the University of the

Balearic Islands regarding the usefulness and attractiveness of some of the resources for learning pronunciation described above. The research questions could thus be formulated as follows:

1. Do students think these tools are easy to use autonomously?
2. Do they like them? Do they find them motivating and engaging? Have they ever used them before?
3. Would they use them again outside the classroom?
4. Do they prefer using these tools to practise their pronunciation rather than doing the pronunciation tasks present in their classroom textbooks/teaching materials?

III.1. Methodology: participants and research instruments

Due to time restrictions and lack of availability, it was not possible to ask the students to try out the pronunciation programs mentioned above, but they were asked to look at and try out some of the apps, blogs and websites. In order to collect the data, three separate online surveys were created, one for each type of technological resource under analysis, namely: a) *apps*; b) *blogs*; and, c) *websites, tutorials and the use of social networks*.

A group of over 30 students volunteered to participate in this study although in the end not all of them filled in the questionnaires, probably due to the fact that in the last few weeks of the first term, they had to prepare several oral presentations, hand in projects and sit some exams in other subjects. For all these reasons the number of participants in the study was quite reduced (cf. Table 1 below). This means then that this survey should be considered only as preliminary and diagnostic and therefore the results obtained should be taken with care.

Table 1. Number of students who filled in each questionnaire.

Questionnaire focus	Number of participants
Mobile apps	13
Blogs	6
Websites,	10

tutorials and social networks	

Table 2 below shows the specific resources the participants were asked to review. In the case of mobile apps, they were given explicit instructions as to the type of tasks they could do to analyse them, whereas in the case of some of the blogs and websites they were simply asked to give their personal opinion in the surveys. Whenever possible, the ideas suggested were connected to topics they were studying in their ESP course so that they could continue to use these resources in the future if they wished to. For instance, for the *Say It Out* app, they were encouraged to pronounce some specific words as a preparation for the oral assessment activities of the course (an individual job interview role-play and a meeting simulation in groups). Thus, they were encouraged to pronounce words like *business, negotiate, job, candidate, employee, disagreement*, etc. and to check whether the program recognised such words according to how they verbalised them.

Table 2. Technological resources students were asked to consult.

Materials	Specific resources students were asked to try out
Mobile apps	*Say it out, Sounds, English File Pron Demo*
Blogs	Marina Cantarruti's Adrian Underhill's Mark Hancock and Annie MacDonald's Alex Rotari's Richard Caudwell's Michelle López and Carolyn Johnson's
Websites, tutorials and social networks	Mark Hancock's and Annie MacDonald's Wrong lyrics section Adrian Underhill's tutorials on Youtube Pronunciation builder and English pronunciation activities quizzes and games on Facebook

The vast majority of the questions included in the different surveys (which were delivered in Spanish) followed a Likert scale from 1 to 10 where 1 represented "I totally disagree" and 10 "I totally agree". Due to space limitations, I cannot include here all of the questions present in each survey. Nevertheless, Table 3 contains the items students were asked to reflect on after trying out some of the mobile apps and most of these questions were also included in the other two questionnaires.

Table 3. Items included in the survey to review mobile apps.

1. Which apps did you look at?
2. These apps are easy to use
3. I liked these apps
4. I had used apps like these before to improve my English pronunciation
5. I would use these apps again to improve my English pronunciation
6. These apps are good resources to practise English pronunciation
7. These apps are engaging tools
8. I would prefer to use these apps in class rather than doing the pronunciation activities present in textbooks
9. I am going to use these apps again

III.2. Data analysis

Since this study is only a first approach to a few ESP students' opinions on using technological materials to practise their pronunciation, statistical analyses have not been conducted.

Regarding the data analysis procedures, as mentioned above, the questions included in the survey followed a 1-10 Likert scale. Hence, although the data collected in this study are of a qualitative nature (since they analyse students' opinions), the results were treated in a more quantitative way in the sense that the main findings are expressed in percentages (see section III.3). More specifically, due to the preliminary nature of this study, students' numerical answers on the Likert scale were interpreted in the following three different ways:

- If they chose options 1-4 on the different scales, these results were regarded as negative, that is, they *disagree* with the statement.
- If they selected 5 or 6, their opinions were regarded as *neutral*; hence, they were considered to be neither in agreement nor in disagreement with the statement.
- Selecting options 7-10 on the different Likert scales was interpreted as a positive finding, i.e. students *agree* with the statement.

To exemplify, if learner X rated the item "These apps are easy to use" with a 2, it was interpreted that they disagreed with this statement, considering these resources to be difficult to use. If someone opted for a 5 or 6 on the Likert scale, they were considered as having a rather neutral position, in between agreeing and disagreeing. Finally, if a student marked a 9 on the Likert scale, it was interpreted that they agree with this statement and thus believe these applications are in fact easy to use.

III.3. General results

Table 4 shows the number of students who agreed, disagreed and those that maintained a neutral opinion on each of the questions asked in the three surveys administered. As mentioned above, percentages are also given and the most-voted options are highlighted to make interpretation easier.

Table 4. Main results displayed with total figures and percentages.

Questions asked / Surveys administered	Apps			Blogs			Websites, tutorials and social networks		
	1-4	5-6	7-10	1-4	5-6	7-10	1-4	5-6	7-10
They are easy to use	2 (15.3%)	1 (7.7%)	10 (76.9%)	1 (16.6%)	2 (33.3%)	3 (50%)	0 (0%)	1 (10%)	9 (90%)
I liked them	1 (7.7%)	4 (30.7%)	7 (53.8%)	1 (16.6%)	1 (16.6%)	4 (66.6%)	2 (20%)	1 (10%)	7 (70%)
I had used similar materials before	6 (46.1%)	2 (15.3%)	4 (30.7%)	4 (66.6%)	1 (16.6%)	1 (16.6%)	7 (70%)	0 (0%)	3 (30%))
I would use similar materials again	3 (23%)	2 (15.3%)	8 (61.5%)	2 (33.3%)	2 (33.3%)	2 (33.3%)	2 (20%)	1 (10%)	7 (70%)
I would use these specific materials again	4 (30.7%)	2 (15.3%)	7 (53.8%)	2 (33.3%)	2 (33.3%)	2 (33.3%)	2 (20%)	1 (10%)	7 (70%)
They are useful for learning English pronunciation	4 (30.7%)	1 (7.7%)	7 (53.8%)	2 (33.3%)	1 (16.6%)	3 (50%)	1 (10%)	2 (20%)	7 (70%)
They are fun/engaging tools	3 (23%)	3 (23%)	7 (53.8%)	2 (33.3%)	0 (0%)	4 (66.6%)	1 (10%)	4 (40%)	5 (50%)
I prefer them to textbook pronunciation activities	4 (30.7%)	2 (15.3%)	7 (53.8%)	-----	------	------	2 (20%)	2 (20%)	6 (60%)

On the whole, positive results were obtained in the sense that:

a) Most students found all three types of technological resources under analysis (apps, blogs and websites, tutorials and social networks) easy to use.

b) Between 50% and 70% of the participants in each survey stated that they liked using these tools.

c) The majority of these ESP students would use similar tools to these again to practise their English pronunciation, especially apps and websites, tutorials and social networks. Likewise, over 50% of them said they would use these specific mobile apps and websites again.

d) Approximately half of the volunteers considered these materials as both engaging and motivating/fun to use.

e) Finally, over half of them maintained they would prefer to use these tools to practise their pronunciation rather than the pronunciation tasks present in their textbooks.

Despite assessing these resources positively in many ways, according to their views, it seems that in the past they had not used these materials very much in the classroom. Likewise, they had not been encouraged to use them outside the educational setting, since most of the students disagreed with the statement "I had used similar materials before to practise my pronunciation" in all three surveys.

To sum up, then, from this preliminary study it can be gathered that these ESP students believe these materials are useful, engaging and easy to use. Furthermore, they would be keen to use them again, most likely on their own outside the classroom, due to the fact that, as was just mentioned, they stated they do not normally have the opportunity of using these pronunciation learning tools inside their language lessons.

IV. CONCLUSIONS, TEACHING IMPLICATIONS AND TOPICS FOR FUTURE RESEARCH

As explained at the beginning of this paper, pronunciation tends to be isolated and marginalised in language lessons. Moreover, the types of pronunciation tasks present in modern EFL textbooks, namely drills and discriminations, still resemble those of traditional approaches to the teaching of pronunciation. These tasks on some occasions fail to engage and motivate English learners and, thus, I believe a new approach to the teaching of pronunciation is needed. Such a proposal should motivate learners to improve their English pronunciation, not only inside the classroom but also give them

opportunities to autonomously continue practising both segmental and suprasegmental issues outside the classroom.

It is believed that the extensive list of programs, apps and websites reviewed in this study (as well as those that were only briefly mentioned due to space restrictions) can indeed fulfil the latter function, as most of them allow students to practise pronunciation where and when they like while having fun at the same time (according to the findings in the short empirical study).

Although the empirical study included in this paper can only be considered as preliminary due to the low number of subjects who analysed the different tools, it is believed that the results represent a fruitful first approach to students' views regarding the use of technological materials like apps and websites to help them learn pronunciation. Broadly speaking, the participants in the pilot study seemed to enjoy using these technological resources and they found them useful and engaging.

Two very interesting findings which can be extracted are: a) the fact that they stated they would prefer to use tools like these to practise pronunciation than to do the activities present in written materials, namely textbooks; and, b) they would like to use these tools or similar ones again when practising their English pronunciation. From the former, it could be inferred that overall students are not completely happy with the format of the pronunciation tasks included in their textbooks. This finding is important since it complements previous studies conducted on this issue, research which in fact verifies that many EFL Spanish students and teachers from Compulsory Secondary Education onwards believe the format of the pronunciation tasks present in written materials used in class is extremely repetitive and, consequently, they would like other types of activities to be present (Calvo 2016b). Teaching pronunciation with the use of some of the programs, apps and other technological resources described in this paper can indeed be a way of doing this.

The fact that most of these students said that they would like to continue using these tools (or similar ones) to improve their pronunciation is also an interesting finding, since it indicates that they are motivated to try out new resources and they appreciate innovation, creativity and variety in their pronunciation lessons. Nevertheless, as explained above, most of the participants surveyed claimed they had never been given

the chance to use technological resources like those outlined in this paper inside their language lessons to help them improve and practise their English pronunciation. A general idea that can therefore be extracted from this study is that it seems that students are willing to try out new ways of learning English pronunciation and, broadly speaking, ICTs seem to do the trick for them since they consider them engaging and motivating. It appears, however, that ESP teachers lack information regarding these tools since, according to the students, they have not been used in their language classes. A possible reason why teachers may not use these resources in class could be simply because they are not familiar with them. A first step in our country would therefore be to give EFL teachers training opportunities, such as courses or workshops, to learn how to teach pronunciation with new and engaging methods, including ICTs.

As can be seen in the descriptions included in this article, most of the technology-based resources currently available for teaching pronunciation are extremely easy to use. Nevertheless, it is important for teachers to choose appropriate materials according to their students' needs and, furthermore, the different tasks that students are asked to do with each resource should also be adapted to their specific needs (content, likes/dislikes, assessment). For instance, in section III.1, I mentioned that the ESP students who took part in the pilot study were asked to practise the pronunciation of words to prepare for their specific oral exams by using the *Say it Out* app.

Other activities and further research which can be done with these technology-based materials could be the following:

1) Using *Dragon Dictation*, we ask students to read out a text (either a random text or one taken from their textbook or other teaching materials). Since this type of program is supposed to transcribe in written form what one is saying, it would be interesting to see what would happen if the students:

   a) Pronounce some words incorrectly. For instance, a difficult word Spanish students tend to mispronounce is "comfortable". What would happen if they pronounce this word as /kɒmfɒrˈteɪbɒl/? Would the program indicate it has not understood that word or would it provide an alternative spelling?

b) Similarly, what would happen if we invent a nonsense word like /kə'strʌnsəbɒl/?

2) Getting students to write the lyrics of a song and then follow the murdered lyrics technique[viii] by explaining the reasons why they may have misunderstood the pronunciation of some words.

3) Designing specific tests for Spanish learners with the TP program and analysing whether students perform better with visual, audio or audiovisual stimuli.

4) Ask students to choose a pronunciation app and design similar activities for their classmates to complete.

5) If our students are creative enough, we could get them to design a collective pronunciation blog in which each of them would add comments, tasks, recordings, etc.

6) Trying out some of these materials with other students; the tasks in this case could perhaps be done inside the classroom so as to favour a higher proportion of participation among the students. Moreover, it would be interesting to test whether students' pronunciation improves by using these resources and, if so, with which ones.

All in all, then, it seems that ICTs are helpful and beneficial tools to teach pronunciation since they seem very likely to motivate and engage students, and the use of these interactive resources will allow us to introduce variety and creativity in the classroom. Moreover, they can promote learners' autonomy as they can use these tools when and where they like. We should nevertheless be selective and try out these resources first so as to check whether they are suitable for the specific needs of our students. Finally, although these technological resources have many benefits, they can also be combined with traditional textbook activities, that is, we can combine both ways of teaching pronunciation so as to add variety to our classes.

Notes

[i] **S**ee Tergujeff (2010, 2013) for results in Finland, Henderson and Jarosz, (2014) for research carried out in France and Poland, and Calvo (2016b) for some findings in Spain.
[ii] http://www.worken.com.br/tp_regfree.php?l=i
[iii] All of these sub-applications can be found online, directly on the website http://www.photransedit.com/.
[iv] Both are free of charge and can be accessed on the following websites: http://www.phonemicchart.com/, http://ipa.typeit.org/
[v] *Audacity* and *WavePad* can be freely downloaded and easily installed on our PC, whereas we have to pay $1.99 before downloading *Recorder Pro* from iTunes.
[vi] *Dragon Dictation* can be purchased on http://www.nuance.es/dragon/index.htm; different models are available (professional individual, professional group, premium or home). Unfortunately, it is quite expensive and its price ranges from 99 to 400 euros. A free trial of *Swype* can be obtained on Google Play (the full version only costs a few euros).
[vii] More information regarding these two apps can be found on the Cambridge English website, http://www.cambridgemobileapps.com/ipad.html
[viii] http://hancockmcdonald.com/

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