A study of English Pronunciation: The challenges faced by Spanish speaking language learners with particular focus on word final consonant clusters

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**Abstract:**  
This thesis is concerned with the pronunciation of word final consonant clusters. The study has two principal goals: firstly, to design a methodology, adaptable and applicable to 1st of ESO students and other ESO and Bachillerato years. Secondly, to test the methodology as a tool for improving perception and production of teenage EFL learners acquisition of word final clusters /st/ /ʃt/ /tʃt/. Twenty students from a 1st ESO class participated in the study. Pre and Post tests were designed and the results show a positive effect from employing the methodology between the students’ pre and post test scores.  
**Keywords:** Affricates, English teaching pronunciation, instruction, pronunciation error, word final consonant clusters

**Título:** Estudio de la Pronunciación Inglesa: Dificultades a las que tienen que enfrentarse los hablantes de español en la pronunciación inglesa y en particular cuando se trata de grupos consonánticos a final de palabra.  
**Resumen**  
Esta tesis se centra en la pronunciación de grupos consonánticos a final de palabra. El estudio tiene dos objetivos principales: Primero, diseñar una metodología que se pueda adaptar y aplicar tanto a estudiantes de 1º ESO como a otros cursos de ESO y Bachillerato. Segundo, aplicar el citado método como remedio para la mejora de la percepción y producción en la adquisición de grupos consonánticos africados a final de palabra /st/ /ʃt/ /tʃt/. 20 estudiantes de 1º ESO participaron en el estudio el cual mostró resultados óptimos tras la aplicación de la metodología diseñada para dicho estudio.  
**Palabras clave:** Africadas, enseñanza de la pronunciación en inglés, error en la pronunciación, grupos consonánticos al final de palabra, instrucción.

1. INTRODUCTION

1.1. Rationale behind the study

The present study shows the challenges faced by Spanish speaking language learners when dealing with the perception and production of some English consonant clusters and in particular word final clusters. It seeks to advance the improvement, perception and production of such clusters. The findings may ultimately have practical implications for language teaching and learning.

After having spent a few weeks observing ESO students during their English lessons in their classrooms it can be noticed that there is still a lack of awareness in their pronunciation skills and as a consequence various issues such as mother tongue interference, breakdown of intelligibility and both impeding and non impeding ingrained errors arise when dealing with pronunciation. There has been a considerable improvement in the way students learn English nowadays being as they actually use the language at all times during their lesson, which constitutes a marked improvement from the methodology employed in the 1980s and 1990s (Derwing & Munro, 2005). Fortunately, some improvements have been made in the way learners are being taught nowadays – the target language is almost used at all times during the 50

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51 ESO; Educación Secundaria Obligatoria / Secondary Compulsory Education.
minute lessons in school although considerable improvements still need to be made with regard to a fundamental element of learning a foreign language and that is pronunciation (Derwing & Munro, 2005).

More attention continues to be focused on grammar, structural and lexical aspects of the language whilst phonetics is studied as an afterthought. This could, in part, be due to the teachers’ own lack of awareness of pronunciation; they might not feel confident enough to approach the subject basing their lessons on material where there is not enough room for a focus on pronunciation (Derwing & Munro, 2005). Another reason might be due to the fact that the Secondary school curriculum itself places more emphasis on linguistics, syntax and discursive aspects of the language, rather than on the appropriate use and study of phonetics (Derwing & Munro, 2005).

The general aims of this thesis are to design and apply a methodology in order to improve the perception and production of English phonemes when teaching a foreign language in a 1st of ESO class as well as assessing the students’ performance when producing foreign sounds in a pre - test and a post - test to finally measure and contrast the overall results.

The Specific aim of this thesis is to develop and improve a very specific part of the subjects’ target language (English), when the following consonant clusters\(^{52}\): /st/ /ʃt/ /tʃt/ are found and produced in word final position.

2. THEORETICAL APPROACHES

When students are presented with phonemes that are not used in their own language, they typically show performance that is not as good as a native speaker of the language from which the phonemes were selected (Bradlow & Pisoni, 1997; Munro, Fledge, & Mackay, 1996; Schmidt, 1996; Rochet, 1995; Munro, 1993; Werker, 1989). From a Second Language Teaching (SLT) point of view, this issue has both practical and theoretical implications. In practice, the teacher can foresee the difficulties that learners may experience distinguishing and producing a specific phonetic contrast in the second language. Theoretically, the teacher can look for conditions that facilitate the development of the second language student’s ability to differentiate and produce the new phonetic categories (Perez, 2003).

2.1. Brief history of approaches and methods in language teaching

The term approach is used to refer to the theories about the nature of language and language learning which is the source of the way things are done in the classroom and provides the reasons for doing them (Harmer, 2001). An approach describes how language is used and how its constituent parts interlock – it offers a model of language competence. An approach describes how knowledge of the language is acquired and makes statements about the conditions which will promote successful language learning (Harmer, 2001). In addition, a method would be the practical realization of an approach.

Pronunciation is one of the language phenomena that distinguish native speakers from non-native speakers. However, it was for some time considered largely irrelevant in Second Language Teaching (SLT) since more emphasis was given to vocabulary and grammar (Nunan, 2000; Goodwin, 1996; Kelly, 1929). Interest in pronunciation has gradually increased and this can be seen through a review of the history of some approaches and methods in language teaching (Harmer, 2001).

2.1.1. Major trends in 20th Century English Teaching

During the 16\(^{th}\) century, French, Italian and English gained importance because of European political changes. Latin was gradually displaced and studies of grammars and rhetoric became models for foreign language study. In the 19\(^{th}\) century (1840) the Grammar Translation Method was born and the teaching of pronunciation was ignored (Richards & Rodgers, 1986). Reading and writing were given a crucial role without systematic attention to speaking or listening and linguists

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\(^{52}\) In linguistics, a consonant cluster (CC) is a group of two or more consonant sounds that come before (called an onset), after (called a coda) or between (called medial) vowels. Retrieved from:

https://www.thoughtco.com/what-is-consonant-cluster-cc-1689791

Lleó & Prinz (1996)
joined the debate at the end of the 19th century when attention was given to the naturalistic principles of language teaching (Richards & Rodgers, 1986).

During the twentieth century, a variety of approaches and methods have been proposed which can be seen to constitute the major trends in twentieth century English teaching. The direct method emphasizes direct associations made by students between objects and concepts and the corresponding words in the target language. Fundamentally the use of the native language is totally avoided and learners must use the target language at all times. This method stresses the contextualization of grammar and vocabulary is taught in an inductive way. In this method correct grammar and pronunciation are regarded as fundamental (Richards & Rodgers, 1986).

Another method can be seen in the oral approach and in terms of situational language teaching. This methodology stresses that teaching begins with the spoken language, with elements of language being introduced and practiced situationally. Again, grammar is considered crucial and forms are taught in a linear way with simple forms being taught before complex ones. This method considers that a sufficient lexicon and grammatical basis need to be established before reading and writing elements can be introduced (Richards & Rodgers, 1986).

A return speech-based instruction was proposed in the Audio lingual Method, with its emphasis on oral proficiency as a consequence the dismissal of the study of grammar and literature as principal elements of foreign language teaching. This method advocated the use of recognition and discrimination followed by imitation, repetition and memorisation, with extensive use of drills and pattern practice (Richards & Rodgers, 1986).

2.1.2. Current communicative approaches

A variety of communicative approaches are currently being proposed and employed. The communicative language teaching approach states that the goal of language teaching is primarily to develop “communicative competence”. In this way language is seeing as a system for the expression of meaning whose primary function is interaction and communication and the structure of language thereby reflects its functional and communicative uses (Richards & Rodgers, 1986).

The Natural approach employs a different methodology being based as it is on the observation of how teachers acquire both first and second languages in non formal settings. It is a method which, by its very nature, will reject the formal and grammatical organisation of language as a prerequisite to teaching (Richards & Rodgers, 1986). A shift of focus can be found in the cooperational language learning method, with its emphasis on making the maximum use of activities which involve pairs and small groups. This approach states that each learner is held accountable and is thereby motivated to increase the learning of others through formal and informal learning groups and in cooperative base groups lasting for at least a year (Richards & Rodgers, 1986).

A concerted effort to move away from a traditional linguistic or other type of syllabus can be found in the Context Based Instruction approach, in which teaching is instead organized around the content and information that students will acquire, and therefore, it is believed that no direct or explicit effort to teach the language itself separately from the content being taught is necessary (Richards & Rodgers, 1986).

Finally, mention must be given to the Task Based Language Teaching (TBLT) approach which holds that the task is the core unit of planning and instruction in all language teaching, with the understanding that a “task” is an activity or goal carried out using the target language. Tasks are considered to be activities whose primary focus is meaning and thus, generally bear a fair degree of resemblance to real life language use (Richards & Rodgers, 1986).

Regarding the differences between methods and approaches and their respective advantages and disadvantages, a method is understood to mean a “specific instructional” design based on a particular theory of language and of language learning (Richards & Rogers, 1986: 157). Methods, however, generally provide very little scope for interpretation. The Teacher’s role is to follow the method and apply it precisely according to the rules. However, this does offer some advantages over approaches which tend to be very general in nature, often offering no clear application of their assumptions in the classroom, leaving it to the individual teachers’ interpretation, skill, and expertise.

There is often no clear “right or wrong” way of teaching according to an approach. This can be frustrating and irritating for teachers, particularly those with little training or experience. Methods, however, solve many of the problems new teachers struggle with because basic decisions about how and what to teach have been made for them. Methods enthusiasts can also create their own community with a common purpose (Richards & Rodgers, 1996).
Finally, it should be stressed that learners naturally bring different styles and preferences to the learning process and should therefore be consulted when developing a teaching programme. In this way, teaching methods must be flexible and adaptive to the needs and interests of the learner (Richards & Rodgers, 1996).

2.2. The importance of teaching phonetics in the classroom and how it is taught to Spanish speakers

Most language teachers agree that intelligible pronunciation is vital to successful communication (Murphy, 1991). Similarly, most students see pronunciation as an important part of learning to speak, and therefore ask that more class time be devoted to pronunciation. Despite the recognized importance of this, teachers often remain uncertain about how to incorporate it into the curriculum. Given that most courses emphasize general communication over pronunciation (Murphy, 1991), teachers must seek creative ways to integrate pronunciation into speaking oriented classes in a manner clearly related to the oral communication goals of the course (John M & Grant, 2003).

Unfortunately a great number of teachers ignore pronunciation and how important for students it is in order not just to communicate but to be understood by other people. It is obvious that the main aim of learning a language is to be able to communicate and to be understood but sometimes that communication is not real, meaning the facility of an English teacher to comprehend non native spoken English is, by its very nature, far higher than is the norm. Another thing to mention is that Spanish students learn pronunciation with other students whose mother tongue is the same so therefore they will make the same phonological mistakes when they speak to their peers (John M & Grant, 2003).

A great number of teachers are not aware of how important teaching pronunciation is and as a consequence they put more emphasis on teaching other skills like grammar, listening or vocabulary (Harmer, 2001). The overwhelming majority of English language teachers help students become competent above all in listening and reading (Harmer, 2001). Secondly, teachers complain about the lack of time for practicing pronunciation in the classroom besides, they sometimes think that it might be boring for students. According to Harmer, “they feel they have too much to do already and pronunciation teaching will only make things worse” (Harmer, 2001: 183). Moreover, Harmer adds that “there are teachers who claim that students acquire quite good pronunciation in the course of their studies without specific pronunciation teaching” (Harmer, 2001: 183).

2.2.1. Why teach pronunciation?

Due to the lack of correspondence between spelling and pronunciation it can be a fundamental problem for students of English. Therefore, having some knowledge in Phonetics is considered to be essential and of great benefit for students not only in the production of different phonemes but it will also help them to be able to learn how to identify other phonological aspects such as the prosodic features, stressed syllables, intonation and rhythm. All this will contribute very positively to successful communication (Cenoz, 1993).

The main reasons why we should teach pronunciation in our lessons is firstly and as has been mentioned above not just to increase successful communication but through raising awareness of their potential to produce and imitate various phonemes, contribute to the development of their speaking and listening skills. They become more aware of different points of articulation totally different from their own language when trying to reproduce new sounds (Harmer, 2001).

Secondly, students should be able to use pronunciation which whilst obviously not of a native speaker level should nevertheless be intelligible to any native English speaker. Problems in understanding can have serious consequences, the most serious of which would obviously be a total breakdown in communication (Harmer, 2001). Thirdly, it also helps learners to distinguish the difference between written and spoken forms, recognizing different intonation and sound patterns which may be different from ones in their own language. And finally, students may be able to read phonetic transcriptions in dictionaries, thereby improving the capacity to produce sounds accurately without having heard the way such words are pronounced beforehand (Harmer, 2001).
2.2.2. How pronunciation is taught to Spanish speakers

The methods of teaching the skills of pronunciation fall into two groups: intuitive and analytical. The first group depends on unaided imitation of models; the second reinforces this natural ability by explaining to the pupil the phonetic basis of what they are to do (Kelly, 1929).

When teaching pronunciation and therefore the use of phonetic symbols care must be taken in trying not to always associate symbols with the same word, as for example in some phonetic charts the phoneme /e/ is always represented by the word “egg” and a picture of an egg may also be found. Whilst this is correct it must be remembered there are many other words containing the phoneme /e/. Symbols are obviously studied as part of the process of understanding how phonetics works but the most important aspect here to take into account is the sound (Kelly, 1929).

Pronunciation issues and differences in pronunciation will vary depending on nationality. Students of different languages have different sounds in their own languages so typically it is difficult for them or almost impossible to reproduce completely new sounds. For instance with Spanish speakers one of the most difficult sounds they might encounter is the production of word final clusters such as: watched, washed, rushed, danced, last as word final clusters are very rare or almost nonexistent in Spanish. In order to overcome such difficulties different methods and strategies for learning and improving pronunciation should be carried out in the classroom.

Creating awareness and concern for pronunciation. Building awareness and improving pronunciation is a difficult task but not impossible and it is the teacher’s job to do such a thing (Kenworthy, 1987). The process will be easier if the learner is aware of what they are doing and pronunciation will therefore be taught in a gradual way ordering the components from the easier to the most difficult, from basic to complex. English pronunciation has various components such as sounds and stress patterns where words can be pronounced in different ways and a variation in pitch which can be used to convey meaning. Therefore the learners will need to understand all these components gradually. In this way they will know what to pay attention to and can build upon this basic awareness and concern. By doing so they will recognize that poor and unintelligible pronunciation will lead them to frustration in communication for both themselves and the listener (Kenworthy, 1987).

Imitation and repetition, it was not until the twentieth century when teachers realised about the importance of these two aspects when teaching pronunciation so the imitative approach flourished in the face of competition from techniques based on phonetics and phonology (Kelly, 1929). There is a fundamental aspect to take into account here and that is listening before imitating. It is true that we learn by imitation and repetition and we should expose students to the target language at a very early stage in their lives but the most important thing when it comes to learning phonetics is to be aware of the way sounds are produced and then repetition will follow (Rochet, 1995).

In order to achieve an accurate and intelligible sound the teacher will have to demonstrate and assist the student with some guidance as some of the learners will be able to reproduce the same sound with no problem at all but some others will have some difficulties. The teacher does not have to be an expert phonetician just to have some knowledge and sensitivity of what is occurring when producing sounds so they will be able to assist and advise students (Kenworthy, 1987).

Giving models are considered to be important in order to focus the learner’s attention on new sounds. According to Underhill (1994), there are different ways of giving pronunciation models, the repeated model which is the traditional and probably most familiar one where the teacher drills on pronunciation either individually or as a whole group. The single model where the sound is presented just once and the teacher makes the most of it then after sometime the students are asked if they would want to try the model again. The third one would be the internal imaging model, students hear the sound just once then they process that sound internally in their mind’s ear in order to be able to say it out loud.

Finally, the non verbal model which is about evoking new sounds from the learners without giving a spoken one. A lot of different strategies such as miming, gesturing, using a sound from an already known word or a sound spoken by another learner incorrectly can be used. All forms of given models can be enriched by introducing a stronger visual element such as phonemic transcriptions and the use of phonemes (Underhill, 1994).

The uses of phonemes which imply a mental reality to which the spoken sound was meant to conform (Kelly, 1929). This is actually a very useful and helpful tool for learners as when they have finally learned and gained a certain grasp of the different phonemes then they will be able to read the and associate a sound to the equivalent phoneme and as a consequence, a quite accurate pronunciation will occur. Students will be able to read the phonetic symbols that are shown...
in dictionaries and therefore have the facility to attempt to produce the correct pronunciation without having heard the word before. Although sound images are not the same as visual images, the process of establishing categories is basically the same and each language has its own set of categories (Kenworthy, 1987). The role of the teacher here is vital as they will have to make sure that learners are hearing sounds according to the right category and they will have to help them to even create new ones.

The use of phonemic charts can provide a visual and compact reference for the learners but before doing so teachers will have to introduce the chart within their lessons gradually. During the first two or three sessions doing this, learners are beginning to discover what they need to pay attention to (Underhill, 1994). The next stage will be the integration of the chart which can be used as a tool for both the learners and the teacher for refining awareness of what is involved in making isolated sounds together to form words.

Among the other numerous classroom activities that have been proposed for the teaching of pronunciation are: contrasting two highly similar sounds (free / three), discriminating specific sounds from audio recordings, tongue twisters (as can be seen in the specific methodology employed in this thesis), pronunciation games such as bingo and the varied uses of other technological tools and the introduction of music in the classroom as a highly motivating aid to pronunciation. Apart from mentioning the importance of Phonetics as a regular basis in the classroom, “time spent discussing the issue of pronunciation in a general way can help to stimulate interest, increase motivation” as well as to “help prepare students by making them think about the task of making sounds before them” (Kenworthy, 1987: 54).

Kenworthy (1987) mentions some facts towards learner’s pronunciation in the following terms:

It is very difficult and almost impossible to change some facts towards learners’ pronunciation such as the age when they first start learning it which will have an impact on their pronunciation during all their lives but teachers can contribute to the concern and motivation for good pronunciation in the following ways:

(a) We can persuade learners of the importance of good pronunciation for ease of communication.

(b) We can continually emphasize that “a native-like” accent will not be imposed as a goal. Intelligibility and communicative efficiency are the only realistic goals. They can be achieved as much, if not more, by the way the teacher reacts and the stance he or she adopts as by merely making statements.

(c) We can demonstrate concern for learners’ pronunciation and their progress.

These three points are important aspects of the teacher’s role. The third is especially important. A teacher who clearly demonstrates concern for the pronunciation and speaking skills of learners will stand a good chance of instilling a similar concern in the learners themselves. A teacher who pays little or no attention to matters of pronunciation will probably induce a complacent attitude in learners” (Kenworthy, 1987: 57).

2.3. Contrastive features between English and Spanish consonant system. Phonetics and Phonology

This paper will now briefly analyse and outline the most important distinguishing and contrastive features that exist in both the English and Spanish consonant systems. Crystal (2003), describes phonetics and phonology in the following way “Pronunciation can always be studied from two different points of view: the phonetic and the phonological”. A suitable description of Phonetics would be the study of the way humans make, transmit, and receive speech sounds, divided into three main branches, summarised in the following way:

- **Articulatory phonetics** is the study of the way the vocal organs are used to produce speech sounds
- **Acoustic phonetics** is the study of the physical properties of speech sounds
- **Auditory phonetics** is the study of the way people perceive sounds

Phonology, on the other hand, is defined by Crystal (2003), as the study of the sound systems of languages, and of the general properties displayed by these systems. By contrast with phonetics, which studies all possible sounds that the human vocal apparatus can make, phonology studies only those contrasts in sound (the phonemes) which make differences of meaning within language (Crystal, 2003: 236).

When we listen carefully to the way people speak English, we will hear hundreds of slight differences in the way individuals pronounce particular sounds. For example, one person may pronounce /s/ in a noticeable “slushy” manner,
while another may pronounce it in a “lisping” manner. A phonetician would be interested in describing exactly what these differences of articulations are. A phonologist, however, would point out that both articulations are “types of /s/: /set/, no matter how the /s/ varies, continues to contrast with /bet/, /met/, and other words. There is just one basic unit, or phoneme, involved (Crystal, 2003: 236).

When we talk about the “sound system” of English, we are referring to the number of phonemes which are used in a language, and to how they are organized. To say there are 20 vowels in a particular accent means that there are 20 units which can differentiate word meanings: /e/ is different from /i:/, for example, because there are pairs of words (such as set and seat) which can be distinguished solely by replacing one of these vowels by the other. All the vowels and consonants belonging to the English sound system owe their existence to this principle (Crystal, 2003: 236).

2.3.1. Describing consonants in English

In English we find 21 consonant letters in the written alphabet (B, C, D, F, G, H, J, K, L, M, N, P, Q, R, S, T, V, W, X, Y, Z) and there are 24 consonant sounds in most English accents. According to Crystal (2003), all English consonants are made with an air-stream from the lungs moving outwards (unlike certain consonants in some other languages, which use other types of air-stream). To differentiate the 24 consonants from each other, phoneticians use a classification based on the place and manner of articulation, in addition to the criteria of whether they are voiced or voiceless.

Consonants can be classified from either a phonetic point of view where the point of articulation consists of the air passing through so you can actually hear the air producing a sound; or the closing movement is complete so a total blockage of the air is produced. In this closing movement different organs may be involved such as the lips, tongue or the throat (Crystal, 2003).

From a phonological point of view Crystal (2003) states that: “they are units of the sound system which typically occupy the edges of a syllable, as in dogs /dogs/ and glad /glæd/.” Some other times we find a group or sequence of consonants together with no vowels (clusters) as in “straw” /strːɔ/ or up to four consonants as in “glimpsed” /glimpst/ or thirteenth /θɜːˈtiːnθ / (Crystal, 2003: 242).

2.3.2. Types of consonants in English; Voiced or Unvoiced

We can distinguish between voiced (the vibration of the vocal cords is produced) and unvoiced consonants where there is not such vibration. If we take the pair sound /p/ and /b/ the position in the mouth is in the same place when they are produced. The only difference is /p/ is an unvoiced sound and /b/ is a voiced one. This feature of the consonants is not always absolute as there are different degrees of voicing. As for example the /z/ sound at the beginning of the word “zoo” is much more vibrant than the one at the end of “booz” where the sound /z/ is being devoiced so therefore the sound is not that vibrant (Crystal, 2003).

As we mentioned before the way we articulate consonant depends on the muscular effort and breath force to produce them so therefore voiced consonants can also be labelled as *fortis* or (“strong”) and voiceless consonants as *lenis* (“weak”). This distinction is especially useful when working with learners (Crystal 2003; Underhill 1994).

2.3.3. Place and manner of articulation

According to Crystal (2003), we need to know where in the vocal tract the sound is made and which vocal organs are involved. The important positions for English are the following:

- **Bilabial:** using both lips, as in /p/, /b/, /m/, /w/.
- **Labio-dental:** using the lower lip and the upper teeth, as in /f/, /v/.
- **Dental:** using the tongue tip between the teeth or close to the upper teeth, as in /θ/ and /ð/.
- **Alveolar:** using the blade of the tongue close to the alveolar ridge, as in /t/, /d/, /s/, /z/, /n/, /l/, and the first elements of /tʃ/ and /dʒ/.
- **Post-alveolar:** using the tongue tip close to just behind the alveolar ridge, as in /r/ (for some accents).
- **Retroflex:** using the tongue tip curled back to well behind the alveolar ridge, as in /r/ (for some accents).
• Palato-alveolar: using the blade (and sometimes the tip) of the tongue close to the alveolar ridge, with a simultaneous raising of the front of the tongue towards the roof of the mouth, as in /ʃ/ and /ʒ/, and the second elements in /tʃ/ and /dʒ/.
• Palatal: raising the front of the tongue close to the hard palate, as in /j/.
• Velar: raising the back of the tongue against the soft palate, as in /k/, /g/, /ŋ/.
• Glottal: using the space between the vocal cords to make audible friction, as in /h/, or a closure, as in the glottal stop (in some accents) (Crystal, 2003: 243).

We need to know how the sound is made, at the various locations in the vocal tract. Four phonetic possibilities are recognized.

Total Closure
• Plosive: a complete closure is made at some point in the vocal tract, with the soft plate raised; air pressure builds up behind the closure, which is then released explosively, as in /p/, /b/, /t/, /d/, /k/, /g/, the first elements of /tʃ/ and /dʒ/ and the glottal stop.
• Nasal: a complete closure is made at some point in the mouth, with the soft palate lowered, so that air escapes through the nose, as in /m/, /n/, /ŋ/.
• Affricate: a complete closure is made at some point in the mouth, with the soft palate raised; air pressure builds up behind the closure, which is then released relatively slowly (compared with the suddenness of a plosive release), as in /tʃ/ and /dʒ/ (Crystal, 2003: 243).

Intermitent Closure
• Roll or Trill: the tongue tip taps rapidly against the teeth ridge, as in the “trilled /r/” heard in some regional accents; a trill in which the back of the tongue taps against the uvula is also sometimes heard regionally and in some idiosyncratic “weak r” pronunciations.
• Flap: a single tap is made by the tongue tip against the alveolar ridge, as in some pronunciations of /r/ and /d/ (Crystal, 2003: 243).

Partial Closure
• Lateral: a partial closure is made by the blade of the tongue against the alveolar ridge, in such a way that the air stream is able to flow around the sides of the tongue, as in /l/ (Crystal, 2003: 243).

Narrowing
• Fricative: Two vocal organs come so close together that the movement of air between them can be heard, as in /tʃ/, /θ/, /β/, /s/, /zs/, /j/, /ʃ/, /ʒ/, /h/, and the second element in /tʃ/, /dʒ/. The consonants /s/, /z/, /ʃ/, /ʒ/ have a sharper sound than the others, because they are made with a narrower groove in the tongue, and are often grouped together as sibilants (Crystal, 2003: 243).

2.3.4. A comparison of the sound systems of English and Spanish

We will now briefly compare the most important distinguishing existing sounds in both systems, the English and Spanish.

<table>
<thead>
<tr>
<th></th>
<th>p</th>
<th>t</th>
<th>tʃ</th>
<th>k</th>
</tr>
</thead>
</table>

Picture 1. Spanish consonant sounds (Phonemes in parenthesis do not occur in all dialects).
Spanish and English consonant systems show many similarities but there are elements in both languages which are obviously different as in the case of the sounds /j/ or erre /-r/ in Spanish, which English lacks. Some other elements are common in both languages as in the case of the sound /m/, /n/ or /l/. English and Spanish share many of the same consonants and spell them similarly Swan & Smith (2001).

**Picture 2.** English consonant sounds.

<table>
<thead>
<tr>
<th>p</th>
<th>B</th>
<th>f</th>
<th>v</th>
<th>θ</th>
<th>δ</th>
<th>t</th>
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<td>j</td>
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<td>h</td>
</tr>
</tbody>
</table>

Red phonemes have equivalents or near equivalents in Spanish and are perceived and articulated without serious difficulty, though even here there are some complications. Red phonemes cause problems. As Swan & Smith (2001), point out some differences between Spanish and English can be established as follows:

1. Initial voiceless plosives (/p/, /t/, /k/) are not aspirated as in English so they often sound like /b/, /d/, /g/ to English ears.

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53 For a better view and comparison of both systems, see Appendix I.
2. Word-final voiced plosives are rare in Spanish; learners tend to use /t/ for final /d/, /k/ for final /g/ and /p/ for final /b/.

Other voiced word-final consonants also tend to be strongly devoiced, so “rish” or rich for ridge; /beɪθ/ for bathe, etc.

3. Spanish has the same three nasal phonemes as English, so for example /aiŋgoi/ is common for I’m going. In Spanish, /n/ or /ŋ/ tends to replace /m/ in final position, so for example “dream” or “dreang” for dream. Final /ŋ/ in Spanish is not always very distinct, and may be absorbed into nasalised vowel and/or pronounced more like /ŋ/ or /ŋ/. In Spanish, /k/ does not follow /ŋ/ at the end of a word, so sing is pronounced for both sing and sink.

4. Spanish speakers tend to give b, d and g their mother tongue values, which vary according to context. These are quite similar to English initially, but between vowels they are softer continuous sounds, not stops: /b/ is more like /v/, /d/ like /ð/, and /g/ not exactly like any English sound. This can make learner’s pronunciation of words like robin, habit, ladder, reading, bigger or again somewhat difficult for a native speaker to understand.

5. In Spanish, /z/ does not exist; learners use /s/ for /z/, so pence for both pence and pens, lacy for both lacy and lazy, etc. Moreover, the European Spanish pronunciation of /s/ often approaches /ʃ/, causing confusion between pairs like see and phase, etc.

6. Spanish, only have one sound in the area of /b/ and /v/ (pronounced intervocically as a bilabial fricative or continuant); hence confusion between pairs like bowls and vowels.

7. Of the English phonemes /ʃ/, /tʃ/, /ʒ/ and /dʒ/, European Spanish only has / tʃ/, with obvious consequences for learners. Confusion is common between words such as sheep, cheap, and jeep; pleasure may be pronounced as “pletcher”, “plesher”, or “plessar”, and so on.

8. Spanish /r/ is flapped and is normally pronounced in all positions; this carries over into English.

9. The nearest Spanish sound to English /h/ is a velar fricative like the ch in Scottish loch or German Bach (but written j or g). This often replaces English /h/.

10. Spanish speakers often pronounce English /j/ (as in yes) rather like /dʒ/, leading, with devoicing, to confusion between you, chew, Jew and year, cheer, jeer, etc.

11. Spanish speakers may pronounce /w/ rather like /b/ between vowels, e.g. /ariβalker/ for Harry Walker. Before a vowel, /w/ may be pronounced as /gw/ or /g/: /gwud/ or /gud/ for would (Swan & Smith, 2001: 90).

2.4. The problems of learning English consonant clusters for Spanish speakers

Different theories such as the Contrastive or Language Universals or Markedness Theory Herbert (1986), have been presented to explain why learners of a foreign language may present an impressive command of syntax and semantics or grammar whereas in some other areas like phonology are not that proficient. One very important aspect to mention here regarding a new and more recent theory that appeared in the 1990s known as Optimality Theory Prince & Smolensky (2017), is the notion of phonotactic constraints.

Different languages use different types of constraints; the ideal constraint would be (CV)\(^{54}\) with other combinations dispreferred being as they would be very complicated when dealing with pronunciation. To neutralize this and make the production of consonant clusters in this case simpler, the perfect solution would be formal instruction, providing learners with the perfect rule so that they will be able to produce an accurate pronunciation.

Some languages like Mandarin, Vietnamese or Cantonese do not allow more than one or even no consonant sequence whereas other languages such as German or English allow two, three, four or even more consonant sequences. These final clusters are of great importance in English due to the grammatical and lexical meaning they carry Jurado (2005). As for example in the third singular person; she eats or in the past form of regular verbs; washed, rushed, danced or in plural forms like in crisps, museums, scripts. Spanish students will have to work on the pronunciation of such word final clusters in order to achieve a higher level of English and be understood.

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\(^{54}\) Consonant and Vowel as in “to”, “shoe” O’Connor (1980).
As O’Connor (1980), has stated, the structure of the syllable in English is the following: (CCV)V(CCC), whereas in Spanish it is much more simple: (C)CV(C). Clusters tend to appear at the beginning, middle and end of the word in English whereas in Spanish they come at the beginning or in the middle of the word. (brote, ladrillo, tragar, atraz). In fact consonant clusters at the end of words in Spanish are very rare or almost nonexistent being reduced to neologisms or borrowings such as sandwich.

It can therefore be said that a number of facts regarding the phonotactic constraints of Spanish and English are relevant to the studies. Unlike English, there are no initial /s/- clusters in Spanish, though they occur word medi ally (Stockwell & Bowen, 1965). According to Harris (1969) and Cressey (1978), Spanish allows /sC/ clusters at the underlying level and then has a rule of [e] epenthesis before word-initial /s/- clusters. In contrast, Hooper (1976), as cited in Stockwell & Bowen (1965), posits the /e/ as part of underlying representations, not as inserted by rule. Of relevance also are the following: (a) like English, Spanish allows the following word-initial consonant clusters: /bl, dr, fl, kr/ (Stockwell & Bowen, 1965). (b) Spanish allows only the consonants /s, n, r, l, d/ word-finally Goldstein (2001) as cited in Stockwell & Bowen (1965), and English allows these as well. (c) As it has been mentioned above except for neologisms and borrowings there are no word-final consonant clusters in Spanish Cressy (1978). Stockwell & Bowen (1965). Furthermore Spanish has only tense vowels, specifically, /a, e, i, o, u/ (Stockwell & Bowen, 1965), and, unlike English, no aspirated voiceless stops (Macpherson, 1975), as cited in Altenberg (2005).

It is worth mentioning that the majority of the Spanish English learners watch dubbed films on television during their childhood and in many cases this trend continues into adulthood. This is considered to be one of the main reasons why Spanish learners of English show difficulties in perceiving and producing foreign sounds different from their native language (Cees, koolstra Allerd, & Peeters Herman, 1999). People, who hear little or no English during their early stages in life, will logically face more difficulties when it comes to learning, recognising and producing new sounds than people who have been exposed to the foreign language since childhood (Cees, koolstra Allerd, & Peeters Herman, 1999). Children’s learning of their native language through listening to television is in fact comparable with language learning through listening to other people talk in daily life, especially as dialogues on television programmes have been shown to be very similar to the way mothers speak to their own children (Rice, 1984, as cited in Altenberg, 2005: 62).

“European Spanish speakers, in particular, probably find English pronunciation harder than speakers of any other European language” (Coe, 1987, as cited in Swan & Smith, 2001: 87). Swan Perceiving and producing English consonant sounds is not as problematic for many Spanish learners as it comes to producing vowels due to the fact that both phonological systems share some of the sounds but sometimes combinations of sounds can be challenging, as consonant clusters are generally less frequent in Spanish than in English and some of them cannot be found in the Spanish consonant system so learners may face some difficulties when it comes to perceiving and producing English clusters. The following are some problematic areas: “esperes” for express, “istan” for instant; “brefas” for breakfast, “tes” for test and text; win for wind and win; when for both when and went; can for both can and can’t; cars for cars; cards and cards; kick for kicked; grab for grabbed; “fre fru sala” for fresh fruit salad.

- Problems with the sound /v/ and /b/ in words such as “very” and “berry” or “vowel” “and “revive”
- /d/ may be too close to /ð/ as in “then” so the word “day” may sound like “they”
- /w/ as in “wet”. Learners will either use the sound /b/ or they may insert a /g/ before the sound, so “went” may sound like “Gwent”.
- Difficulties in sufficiently distinguishing words such as see/she or sheep/sheep/cheap
- Failure to pronounce the end consonant accurately or strongly enough; e.g. cart for the English word card or brish for the English word bridge or thing for think
- The tendency to prefix words beginning with a consonant cluster on s- with an /e/sound; so, for example, “school” becomes eschool and “strip” becomes estrip. As /s/ plus another consonant never occurs at the beginning of a word in Spanish.
- Learners may insert a vowel before the /s/ as in “student, spectrum, small etc” so “small” sounds like “a-small”. The sequence /s/ plus a consonant does occur in Spanish across syllable boundaries.
• Final consonant clusters with /t/ and /d/ are problematic “test”, “instead”, “laughed”. Learners may delete the final /t/ or /d/ or insert a vowel between the two consonants, resulting in forms like “laugh-ed” or “laugh”. The swallowing of sounds in other consonant clusters; examples: “next” becomes nes and “instead” becomes instead.

• The combination /s/ plus consonant plus /s/ is a difficult one “nests”, “crisps”, “risks”. The usual escape route is to delete one of the two /s/’s.

• Final consonant clusters with /s/ are generally no problem for Spanish speakers “picks”, “bets” although they often delete the final /s/.

Spanish is a syllable-timed language, in other words, syllables tend to follow each other at regular intervals with an equal amount of time given for each syllable. This is in stark contrast to stress-timed languages, where stresses occur at regular intervals while the remaining unstressed syllables, no matter how numerous, have to fit in between the stresses, so as not to disrupt the regular stress beat (Roach, 1982). When Spanish speakers transfer the intonation patterns of their mother tongue into English, which is a stress-timed language, the result may sometimes be barely comprehensible to native English speakers. This is because the meaning or information usually conveyed in English by the combination of stress, pitch and rhythm in a sentence is flattened or evened out by the Spanish learner (Kenworthy, 1987; Underhill, 1994 and Coe, 1987, as cited in Swan & Smith, 2001).

In conclusion therefore, the importance of focussing on pronunciation in the classroom is evident due to several fundamental factors which highlight the inherent difficulties faced by Spanish speakers. Word final consonant clusters carry lexical and grammatical meaning yet are extremely rare in Spanish to the point of being reduced to neologisms, the phonotactic constraints of Spanish seriously impede accurate reproduction of these clusters, a lack of familiarity with English phonology is a serious issue through the prevalence of dubbing in the mass media and finally the fact that English, a stress timed language contrasts with Spanish, a syllable timed language, presents a further obstacle when addressing the issue of teaching English pronunciation. It seems evident that such fundamental difficulties require investigation in order to provide some solutions.

2.5. Literature review

Extensive research has been carried out over the past few decades regarding the issues that arise from teaching English pronunciation to Spanish speakers, proposed methodologies in order to facilitate the teaching of said pronunciation, as well as the fundamental differences that exist between Spanish and English phonologies that contribute to the inherent problems native Spanish speakers encounter when attempting to reproduce English phonemes in the first place. For the purposes of this paper, we will now carry out a brief review of some recent and ongoing research in these fields that are pertinent to the area of investigation of this thesis.

In a study done in Cordoba University by Jurado (2005), the focus is put on the evolution of interlanguage following the tradition of Contrastive Analysis, Language Universals and Markedness Differential Hypothesis. The aim of the study is to analyse the production of consonant clusters by Spanish learners of English comparing the performance of two groups of students; one group with no instruction given at all so they will have to learn the pronunciation of clusters via “natural acquisition” and other group which received formal instruction on the matter. The ages are quite similar ranging from 21 to 27.

They were presented with three different tasks; firstly they had to read words in isolation containing clusters. For the second task they had to read clusters at word boundaries and finally they had to read clusters in sentences in order to test them on their production of clusters. The results showed that both groups seemed to have problems with the same kinds of clusters. Although in some of the other tasks group two –the more advanced level one showed better results than group one. In task two the results were quite similar: 55% correct answers and 65% for the second group. The greater problem in both groups seems to be epenthesis, found in isolated words, sequences of words as well as in clusters in sentences. For the results in the final task, Jurado concluded that, whereas members in group 2 still had some problems (most of them coinciding with those of the members of group 1) they performed better on the whole. It seems that Spanish learners did not find any difficulties when the consonant clusters were similar in both languages (Contrastive Analysis). The predictions for Markedness Differential and Language Universals were also somehow correct. In some other cases they did well when they were supposed not to. Students who were instructed showed markedly better pronunciation that those who were not.
Different research carried out into the acquisition of consonant clusters shows that there is a tendency for word-final clusters to be acquired before and in a more accurate way than word-initial clusters when researching on five German speaking children, 12 Dutch speakers and 12 English speakers (Templin, 1957; Lleó & Prinz, 1996; Schiller & Levelt, 2000, as cited in Kirk & Dermuth, 2005). A discussion on how and when clusters in final position are acquired was carried out. This study evaluates possible structural, morphological, frequency-based, and articulatory explanations for this asymmetry using a picture identification task with 12 English speaking two year olds. The results show that word-final stop + /s/ clusters and nasal + /s/ clusters were produced much more accurately than word-initial /s/ + stop clusters and /s/ + nasal clusters. Neither structural nor frequency factors are able to account for these findings. Further analysis of longitudinal spontaneous production data from 2 children aged 1 and 6 provides little support for the role of morphology in explaining these results. It was argued that an articulatory account best explains the asymmetries in the production of word-initial and word-final clusters (Kirk & Demuth, 2005).

There are languages like Spanish along with some others such as Finnish that only permit word-initial clusters which might go some way to explaining why in Spanish initial-word clusters are produced more accurately than final ones. This is in contrast with the tendency of Germanic language speakers of acquiring word-final clusters in a more accurate way due to having simpler structures than before initial ones, (Lleó & Prinz, 1996). In English, factors such as the frequency with which different phonological structures are produced and morphemes carrying important morphological information (e.g. ducks) might explain the acquisition of final clusters in an earlier and more accurate way. Word frequency and Phonotactic frequency are other important factors in the production accuracy of clusters. Some sequences are easier to produce than others because of their phonetic context.

In a study carried out by Altenberg (2005), three experiments examine the acquisition of word-initial consonant clusters by adult second language learners. Native speakers of Spanish acquiring English participated in a metalinguistic judgment task, a perception task, and a production task. The judgment task indicates that beginner, intermediate and advanced second language learners have an accurate knowledge of English word-initial consonant clusters, with no evidence of transfer from Spanish. However, learners are not able to use that information as effectively as native speakers in perception and production. Transfer does not appear to play a role in learners’ perception, though it does in their production. The evidence also provides support for the role of universal developmental factors in second language perception. This study again points out different factors which may affect learners’ pronunciation such as second language phonotactic constrains and to what extent what parts from L1 are transferred into L2. A phenomenon which has long been observed is the epenthesis of a vowel before /s/ plus consonant onsets in English by native speakers of Spanish during production (Abrahamsson 1999 and Carlisle, 1988 as cited in Altenberg, 2005). Thus, Spanish speakers often pronounce, for example, school as [Eskul].

The studies described below examined the metalinguistic judgments, perception, and production of L2 /sC/ onsets by native speakers of Spanish. The central points addressing the following three experiments were: the knowledge of consonant clusters, how well Spanish speakers perceived and produced word-initial consonant clusters in their second language and if there was any evidence of transfer from the first language in adult learners judgements, perception or production of L2 word-initial clusters and also if there was any evidence of proposed universals in learners’ judgments, perception, or production of L2 word-initial consonant clusters.

Experiment 1; Metalinguistic judgement task. In this task, native and non native speakers of English rated the grammaticality of non words with different onsets as new words of English. Also non native speakers were asked to rate the grammaticality of non words as new words of Spanish. Experiment 2; Perception task. Native and non-native speakers listened to non words and wrote down their onsets. This was an opportunity to explore learners ‘accuracy as well as their specific misperceptions. Experiment 3; Production task functioned largely as a control task.

Addressing another area of interest, a study done by Lázaro (2010), details a specific methodological intervention in which 15 Spanish students of English were trained in the imitation of English recordings from films and TV series for 14 weeks. One initial and one final imitation were analysed, as well as a free speech delivered by every student at the end of the final week.

Before explaining the methodology and findings of the intervention, Lazarro outlines the current deficiencies in teaching pronunciation and the role and possible benefits of reading aloud and imitation in the classroom. The obvious paradox is emphasised between the undisputed acknowledgement that good pronunciation plays an essential role in the successful acquisition of a foreign language and the fact that a growing volume of empirical and pedagogical works on the subject
have made no significant difference in the classroom, where teaching pronunciation is either neglected or rejected entirely (Barrera Pardo, 2004; Brown, 1991; Samuda, 1993 and Walker, 1999, as cited in Lázaro, 2010).

Lázaro states that despite the enormous variety of methodologies and approaches to language teaching Richards & Rogers (1986), direct pronunciation teaching has only played a major role in the audio-lingual and direct methods. A milestone was marked as the importance of pronunciation was being acknowledged for the first time in foreign language methodologies. However, the rise of the communicative approach in the late 70s (Brumfit & Johnson, 1979; Widdowson, 1978, as cited in Lázaro, 2010) resulted in these methods being severely criticised for having ignored the communicative value of language. “The popularity of the communicative approach pushed pronunciation back to oblivion for the sake of communicative value”. (Lázaro, 2010:52).

Pronunciation was not ignored, but subordinated to general communicative skills. It was assumed students would simply ‘pick up’ pronunciation, but research shows that bad pronunciation is the principal reason for communication breakdown among EFL students (Celce-Murcia, 1996, as cited in Lázaro, 2010). Lázaro highlights the obvious paradox: intelligible communication is essential for oral communication (Jenkins, 2000, as cited in Lázaro, 2010) yet the communicative approach, whose main aim is successful communication, neglects to teach it.

The report mentions that pronunciation seems to be marginalised in EFL classrooms and that applied phonology is rarely taught at schools or universities. However, there are growing and ongoing efforts to put focus on the teaching of pronunciation (Gilbert, 2008, as cited in Lázaro, 2010), and achievements have been considerable, especially in ESL settings. However, achievements have not always filtered down to classroom teachers. As a result, while some teachers are successful in helping students with pronunciation, many lack confidence and training and therefore neglect this area (Derwing and Munro, 2005).

Lázaro makes it clear that with very few exceptions (Gibson, 2008 as cited in Lázaro, 2010) EFL teaching methodology does not recommend reading aloud. The general idea is that reading aloud does not focus on comprehension and therefore is not a valid technique for developing reading skills (Dwyer, 1983; Grabielatos, 2002, as cited in Lázaro, 2010). Students can read aloud correctly without understanding what they are reading (Wallace, 1992, as cited in Lázaro, 2010). However, it is made clear that for the purpose of her paper, reading aloud is not for the purpose of teaching reading but only for the purpose of teaching pronunciation. Very much along the lines of the direct method, students read texts aloud only after having listened to and imitated those texts as many times as necessary. The naturalness of the selected recordings is also emphasised, since they are excerpts from films and TV series. The obvious distinction is made from unnatural texts often used in traditional reading activities (Celce-Murcia, 1996, as cited in Lázaro, 2010).

It is Lazaro’s belief that reading aloud, as operationalised in her work, offers linguistic and motivational advantages. Specifically, it reinforces grapho-phonemic correspondences. Obviously, L1 language transfer is a factor in virtually every aspect of L2 learning (Gass & Selinker, 1983, as cited in Lázaro, 2010) but languages differ greatly in how phonological information in the writing system is represented. This is of great interest to Spanish speaking language learners. Reading aloud could also help in the acquisition of prosodic features (Beaken, 2009, as cited in Lázaro, 2010) and according to Gibson, 2008, as cited in Lázaro, 2010 could also help more anxious students feel more able to speak being as controlled (imitative) speech activities are seen as less distressing than free spontaneous speech.

Lázaro’s research focused on three questions. Would the students improve their pronunciation from the first to the second reading (14 weeks later), if pronunciation was improved when reading, would the students be able to transfer these improvements to their free speech and finally, would the students find the reading aloud activity useful as a tool for improving their pronunciation.

The participants were 20 year old Spanish university students enrolled on a phonology course at CEF B2 level. For 14 weeks, two hours a week were dedicated to listening to texts carefully and then imitating them. That is, they had to read the texts aloud imitating the original recordings. They trained on their own during the week and met the teacher once a week to read the texts aloud. Four independent native speakers of English evaluated the students’ recordings (which had all been recorded at home) in order to avoid the negative effects of anxiety.

In general, an improvement was seen between the first and second recordings of the text, although the improvement was sometimes very small and three participants obtained similar scores in both readings. Lázaro states that there seemed to be a tendency to improve but calls for caution and more research with longer periods of training and a larger number of participants.
The scores obtained by students in the free speech element of the research were sometimes lower (7), sometimes similar (4) and sometimes higher (4). The evaluators found a discrepancy between native like prosodic features and intelligibility and also that some students were not able to transfer suprasegmental features from the reading to their free speech.

Lázaro also explains that the lack of homogeneity in the ratings can also be explained by the differences between both tasks. Students chose the texts individually and some may have been more difficult than others, while the free speech would have had a more similar level of difficulty for each student. The readings were listened to by the evaluators with no visual support or contextualisation, whereas the topics of the speeches were chosen by the students themselves and solely based on oral language. The readings featured colloquial speech and finally, imitating involves specific, actor-like skills which some students might simply be lacking.

The report states that all the students felt very satisfied with the imitation practice. Looking at their scores, the results were also positive, but only moderately so: the students' pronunciation was only slightly better in the second reading and the speeches were more intelligible nut did not seem to have more English-like suprasegmental features. It is felt that the results are interesting enough to open up lines for future research to explore the preliminary impressions as well as investigating to what extent, as it has been claimed, this type of task helps learners to establish connections between written and oral English.

In summary, Lazaro draws the following positive conclusion from her research: the task raises students’ phonological awareness and their awareness of different English accents, it provides motivating samples of real English and it helps with listening comprehension. Furthermore, it is useful for autonomous learning and is a life-long learning tool.

While Lázaro focussed on a specific methodology in order to improve pronunciation and reduce L1 interference, the main focus of Brenda K Gorman and Ellen Stubbe Kester’s research, Gorman & Stubbe Kester (2017), is to analyse the phonological development of children who are bilingual in Spanish and English and also to analyse typical and atypical phonological patterns of Spanish speaking children learning English- the second part of their paper being more pertinent for the purposes of this thesis.

While much of Gorman and Kester’s research involves investigation into the speech patterns of bilingual Spanish/English speakers, they are also interested in English language acquisition by native Spanish speakers. This necessarily involves research into the differences between the Spanish and English phonological systems which are highly relevant to the topic of this thesis.

As is stated in the paper, while English and Spanish share a similar alphabet, the phonologies of the two languages are very different. These differences will naturally influence the speech of Spanish speaking children learning English and this influence can be thought of in terms of the Competition Model, first proposed by Bates and MacWhinney (1989), before English language learners have internalised the phonological system in English, they may transfer what they know about Spanish to English. As the authors point out, knowledge of the phonological differences between the two languages will enable the teacher to understand why some sounds in English are difficult for Spanish speaking language learners to perceive and produce. In this way, even a teacher who can speak no Spanish becomes familiar with and can to some extent predict normal speech patterns and problematic areas for language learners.

The authors investigate the differences in consonantal phonemes between the two languages and the difficulties that may arise when Spanish speakers attempt to produce language containing phonemes that have no equivalent in L1. While Spanish and English share several consonantal phonemes, especially stop sounds, nasals and fricatives, there are many other phonemes that do not exist in the other language and important differences in voicing, aspiration and place of articulation that will result in acoustic differences and difficulty of production despite having a shared consonantal phoneme.

2.6. Research questions and Hypothesis

Our research questions have been set out after having spent a period of time considering and evaluating this aspect of the language which is crucial to avoid a communication breakdown. Spanish speakers will receive instruction on the pronunciation of three different word final consonant clusters: /st/ /ʃt/ /tʃt/. The following is the first research question and its corresponding hypothesis of the two of them addressed in this thesis:
1) What main challenges will ESL Spanish speaking students encounter when pronouncing word final consonant clusters and why?

Following the reasoning that Contrastive Analysis would offer, Wardhaugh (1970), it can be inferred that speakers of a language such as Spanish, in which consonant sequences are simple, may have some problems when trying to produce English word final clusters, which can be complex. Students will have issues with those word final clusters ending in /st/ /ʃt̬/ /tʃt̬/ that cannot be found in their native language whereas they will have less difficulty in those which are shared by both languages such as initial ones. One thing they may do in order to overcome such difficulties is try to convert a more complicated syllable into an easier one as the Language Universals Hypothesis would predict. Chomsky (1975). In other words, students will try to transform difficult syllables like CVCCVC washed into CVCV wasid or into the most universal simple one: CV. Another thing they may do is cluster reduction (deletion of a consonant) instead of “last” they will pronounce “las” or “mis” for “missed” or epenthesis (the introduction of a vowel where there should not be one) “eschool” for school.

The following is the second research question and its corresponding hypothesis in this thesis:

2) Will students show an improved performance in the perception and production of such clusters during the post-test and after having applied the methodology?

Whilst it is true that every student is an individual case with differing needs and abilities and productive skills and as such defies generalisation, and important point to make here is that in general and hypothetically speaking, the more learners are exposed to the target language the fewer mistakes they will make, by default the more learners are instructed and the more they practice the fewer problems they will face when producing clusters. So in order to solve these pronunciation issues students will need to be made aware of such sounds presenting them in a fun and constructive way. Later on they will targeted through different ways such as playing tongue twister games, testing each other within their group, drilling exercise, matching activities etc.

3. METHODOLOGY

3.1. Introduction and Type of study

The methodology suggested in this thesis is aimed at solving potential and real pronunciation difficulties presented by 1st of ESO students in the classroom during their English lessons. An inductive approach will be taken when dealing with the method, working from the specific to the general, from the basic to the most complex. Students will acquire new knowledge which will be connected with that which already exists as Ausubel (1963), mentions in his theory of meaningful learning and they will learn through discovery as Bruner (1978), defends in his instructional scaffolding theory. Students will be the main focus of the instruction and learning context where they will play an active role in learning. Nevertheless, as Vygotsky (1978), defends in his theory, the instructor will collaborate to help facilitate meaning construction in students. The whole process of learning will become a reciprocal experience for the student and the teacher.

This is a case study applied 20 learners’ progress in acquiring L2 consonant English sounds. In particular the focus of the methodology will be concentrated on three main consonant clusters which should be acquired in different manners. In the sections that follow, the setting for the study as well as the participants and the criteria for subject selection will be described. Finally the methods, procedures and data collection used to conduct this study will be explained.

The method shown in this study is just one of the many that could have been proposed and ultimately proved to be successful, as will be analysed later. It was aimed to be student centred at all times to achieve the aims of the study for students to improve their phonological skills and raise awareness of this very specific area of language.

3.2. Variable

The variables presented in this study are two different ones; on the one hand we have the acquisition and production of these chosen word final consonant clusters; /st/, /ʃt̬/, /tʃt̬/, and on the other hand the teaching methodology proposed in the study for the acquisition of such phonemes. According to Norquist (2017), in Linguistics, a consonant cluster (CC) is a group of two or more consonant sounds that come before (onset), after (coda), or between (medial) vowels. This is also known simply as cluster. Consonant cluster simplification (or reduction) sometimes occurs when one consonant (or more)
in a sequence of adjacent consonants is elided or dropped. In everyday speech, for instance, the phrase “best boy” may be pronounced “bes’boy”, and “first time” may be pronounced “firs’time”.

In order to make sense of the method, procedure and tools for data collection we should describe what the nature and behaviour of these variables, in this case word final consonant clusters which are being investigated are. So once they have been identified we will be able to create the right tools and methodology to measure them. In our case the purpose of this study is specific and simple: to focus on the pronunciation and consonant quality of the final syllable of the lexis of the test script, thereby observing if the students are able to correctly produce the word final consonant clusters being studied. The test which will be used to measure these variables will be a pre-test consisting of a text written in English (see Appendix II) where the variables of the study and some other potential ones will appear in context. Students will be recorded in this pre-test so the researcher later on will analyse and measure the variables of the study using PRAAT among other tools.

3.3. Setting and Subject Selection

A very crucial factor here in the process of planning this investigation is the one related to the homogeneity of the group chosen for a motive. A fundamental aim was the personal linguistic background of the group would be as similar as possible. Therefore one of the most important keys for the experiment consisted of setting the boundaries of the subject’s profile. In this investigation related to the Phonological field where empirical data were obtained the learners were not related to or known by the researcher so the internal validity of the experiment would not be seriously affected. This type of research would give the opportunity of applying in a responsible way the conclusions and results to other subjects once it had been completed.

For the subject selection several factors were taking into account:

1) The subjects were all Spanish speakers learning English on the same course, in this case 1st of ESO, 2) The time spent learning English was similar in each of the members of the group, 3) they had similar teaching and learning backgrounds, all based on the Spanish Curriculum (Royal Decree, “Spanish Ministry of Education, Culture and Sport 1105/2014).

In this case the sampling for this study will be a non – probability convenience one which is a sampling technique where the samples are gathered in a process that does not give all the individuals in the population equal chances of being selected so in this case the individuals were chosen and selected in an intentional and direct way. The main criteria followed to choose this non-probability convenience sampling method was that with convenience sampling the samples are selected because they are very accessible to the researcher so the subjects were chosen in this way as they were very accessible and easy to recruit. Another reason was because it was considered the easiest way taking into account the limited time to carry out the experiment. This technique of non-probability convenience sampling was used in this initial study although it could be carried out later again in the future using a randomized, probability sampling.

3.4. Data collection

In order to carry out the present study, a test was designed. It consists of a written text which has been mentioned before (see Appendix II) where subjects will be presented with problematic consonant clusters. Not only final word clusters, which will be the subject of the study, also initial word clusters. The subjects are aware that they are being recorded but not fully aware of the fact that the language they produce will later be analyzed.

Depending on the type of research that is to be carried out several ways can be used to obtain data so this factor and the type of methodology or technique chosen will have an influence on the type and the quality of the data obtained. When data is collected there are always some advantages and disadvantages which will again influence the result of the study (Hernandez, Collado and Baptista, 2010).

Praat is a free computer software package for the scientific analysis of speech in phonetics. The program supports speech synthesis, including articulatory synthesis. Resource available in http://www.fon.hum.uva.nl/praat/download_win.html
In this experiment the type of technique used will be a combination of qualitative and quantitative and different types of material will be used in order to know the nature of the data. The aim of the pre-test will be to determine the subjects’ ability to produce such clusters when using a foreign language. In fact the text (see Appendix II) was designed to collect data which shows the subjects’ skills in producing these sounds.

In order to carry out this part of the research, five separate things will be taken into account for data collection.

1) The observation of the groups, 2) deciding which of the four potential groups will be submitted to research, 3) select and decide on the method / techniques that will be used making sure that they are adapted to the students’ skills, needs and deficiencies in order to obtain positive and optimal results, 4) how to apply such techniques and evaluate how they will work out during the data collection process, 5) how to register and measure all the data obtained.

During teaching practice, which consisted of 10 weeks in total, the researcher had the opportunity of first observing four different groups; 1º AB, 1ºBC, 2º, 4º of ESO in order to be able to target subjects as well as potentially problematic phonetic issues of interest to the researcher. This information would then be used to design and apply the most convenient and appropriate method to first collect data in a pre-test, where all students individually read a text out loud in which the variables of the study are presented (see Appendix II). Following this a method for instruction will be design in order to achieve the aim of the study, i.e. the improvement in pronunciation of the specific clusters chosen for the experiment. After this the subjects will be tested again in a post-test in order to ascertain if the aims of the study have been achieved.

Also during the observation period the researcher will be using a note book and voice recorder to record and take notes of all the potential phonetic features that will be submitted, analysed and investigated during the experiment. Furthermore a variety of activities such as a written text, tongue twisters, and the use of Praat, are some of the techniques employed throughout the experiment. These activities will be fully explained in detail later in this paper.

3.5. Participants

The present investigation was carried out by choosing 20 subjects in total for the study. All the participants were pupils at Asunción Cuestablanca School in Madrid. All were Spanish except one girl from Mexico so all were Spanish native speakers. Their ages were broadly similar, ranging from 12 to 13. There were 14 males and 6 females in the group (1º of ESO). The participants had been studying English in the same class for 7 months and all of them had studied English for at least three years. The students received an English lesson of 50 minutes four times a week, always taught by the same teacher. Some students had developed a level of communicative ability through participating orally within the speaking tasks proposed in their lessons, but they showed a noticeable lack of awareness of pronunciation due to the fact of only being taught the bare minimum regarding the issues surrounding English pronunciation.

3.6. Procedure and Materials

3.6.1. Testing instrument pre-test

As mentioned before, in order to carry out the present study, a small test consisting of about 12 sentences containing the three final clusters for the aim of the study was designed (see Appendix II) to first test and then analyse the subjects ‘ability to reproduce world final consonant clusters correctly. The subjects’ role consists of reading individually the presented text out loud while they are being recorded. Before they start reading the text the researcher simply asks them to read the text and informs them that there is not correct or incorrect way of doing so. Students are asked to read everything that is written down. The subjects know that they are being recorded but they do not know that the language they are producing will be analysed and compared in a post- test later on.

It should also be mentioned that despite the fact the researcher chose a quiet place, the school library, to carry out the pre – test, this first part of the experiment is developed in an unnatural, semi relaxed environment as students do not speak in a spontaneous way. They are simply required to read from a sheet of paper which has been placed in front of them and they are fully aware of the fact that they are. Taking all this into account, as well as the fact the subjects hardly know the researcher and the slight awkwardness of the situation, the levels of stress can be said to be medium to high for some, since they may feel uncomfortable with the situation.
3.6.2. The Instruction

During the second part of the experiment the researcher was left alone with the subjects in the classroom where they normally have their English lessons. It is interesting to mention here that for this particular reason the subjects seemed to be far more relaxed than before as they knew they would be spending some time with the researcher who they had already met, but in their own environment. They all seemed quite excited, engaged and keen on the tasks that were presented during this part of the experiment. The instruction lasted in total about 50 minutes which would fit within the time allocated for their normal English lesson and it was divided into three main different parts.

In the first part of the instruction the subjects were presented on the board with four different tongue twisters (see Appendix IV) which contained the specific word final consonant clusters of study. They had to first listen to the correct way of pronunciation for those twisters. It should be mentioned here that specific emphasis such as stress and intonation on the pronunciation of the key words containing such clusters was stressed here. After subjects had listened to the pronunciation of these sentences they repeated first out loud as a whole class three times after the teacher and then they continued practising with their partners testing each other. Following this the researcher asked them randomly to recite out loud.

During the second part of the instruction the subjects in 5 groups of 4 people each, were given the same text used in the pre-test part of the experiment but this time the text had been sectioned and cut up in different parts so each student would get a different part of the text. (See Appendix III), they had to unjumble it putting all the different parts together at the same time they were reading out loud their part of the text so they could work on their pronunciation and practice the different kinds of clusters in the study.

For the third and final part of the instruction the subjects were presented on the board with the three phonemes in the study: /st/ /ʃt/ /tʃt/ and a set of words containing the final consonant clusters pertinent for the study (see Appendix V). This time the subjects in pairs had to read the words and allocate them to the column where the phonemes representing those final clusters were.

At this stage of the experiment students seemed to be more aware of what was occurring since they became more engaged with the whole pronunciation process. Also the fact that they had used that text before contributed to this. The very fact that they asked if they would be recorded for a second time means it can be inferred that some degree of awareness had been raised within this particular students becoming more conscious of their pronunciation when speaking a foreign language.

3.6.3. Testing instrument post-test

For this final part of the experiment all 20 subjects who had been tested before were again tested with exactly the same test following exactly the same procedure. The subjects were individually taken out of the classroom and taken to the school library where they were presented with the old text. They were again individually recorded and asked to read out loud everything that was written down.

Subjects this time were more aware of both; the task they were about to do as well as their pronunciation. In the same way they seemed more relaxed, comfortable and in some cases slightly more confident.

4. RESULTS AND DISCUSSION

Once all the twenty subjects were recorded the consonant clusters they produced were analysed. As can be seen from the pre-test results, subjects demonstrated considerable difficulty in reproducing the target consonant clusters. Analysing the lexical items which contained the target clusters individually the results can be seen as follows. Only one of the 20 subjects was capable of accurately producing the target cluster in last and missed and none of the subjects were able to accurately reproduce the target cluster in danced. One subject was able to correctly reproduce the target cluster in washed and no subject was able to correctly reproduce the target cluster in rushed. Two subjects were able to accurately reproduce the target cluster in watched and none of the subjects were able to accurately reproduce the target cluster in reached. Subjects were assigned different marks from 0 to 5 in order to measure their performance in both parts of the experiment (See Appendix VI).
When reading 1 and reading 2 were compared after the experiment, the two evaluators (the researcher and an English native speaker) both agreed that most students performed considerably better at reading 2 in the post-test. The pre-test and post-test results are detailed in Appendix VI, but we should now mention some pertinent results and differences found when analysing the students' performance both pre and post-test. The students were evaluated on a scale from 0 to 5, with 5 being the highest level of performance in both readings. The improvement in reproducing the target clusters post-test is noticeable: 18 of the 20 students tested showed an improvement in performance, 12 of the students were evaluated with the minimum 0 pre-test whilst only 2 were awarded this evaluation post-test. As can be seen in the appendix, there was a marked variation in improvement, due it seems to factors including inherent ability to reproduce the target clusters as well as adaptability and receptiveness to the methodologies employed. It is worth stating that the most marked improvement was from a pre-test 0.5 to a maximum 5, post-test, whilst the smallest improvement, apart from 2 students who showed no improvement, was from 0 pre-test, to post-test 0.5. These findings can also be supported by the images shown for some of the results when using Praat (see Appendix VIII).

It seems obvious that the hypotheses proposed at the beginning of the study were fulfilled only in part. As Contrastive Analysis predicted, students did not find any problem when consonant clusters were similar to those in Spanish (in initial sequences, for instance) and, at the same time, many of the mistakes made by the students in final sequences (those which differ in native and target language) can be traced to language transfer. In other words, students try to apply native language rules to their interlanguage, to the second language that they are learning, and this leads to errors most of the times. The predictions of Markedness Differential Hypothesis were also somehow correct.

The hypothetical answer to the research question based on possible improvement of students' production of problematic consonant clusters was also demonstrated to be mainly correct. As predicted, students showed a marked variation in their productive abilities which can be seen in the enormous improvement of some subjects from pre to post-test results. The vast majority however showed a slight improvement in consonant cluster production which can be attributed to repetition, drilling and exposure to the target language as stated in the hypothetical answer to the initial research question 2 (see Appendix VII).

It would have been better for the results of the study if the subjects had recorded themselves at home due to different reasons such as to avoid the negative effects of anxiety Lázaro (2010). Imitation and reading aloud implies specific skills which are basically acting. This is something that some of the subjects tested possess and some others inherently do not. This to some extent may explain the seemingly anomalous improvement in some of the subjects.

5. CONCLUSIONS AND LIMITATIONS OF THE STUDY

In this part of the thesis the findings and possible implications of the results will be reviewed as well as some limitations of the study and ideas for further research will be proposed. In this study two fundamental research questions were proposed. Firstly, the potential difficulties that students of the English language would face when pronouncing word final consonant clusters, and secondly, if these students would improve their pronunciation when completing the post-test and after having been exposed to the methodology proposed in this thesis.

Our hypothetical responses to the above mentioned research questions were proved to be correct due to the fact that a sizeable majority of the subjects proved to have considerable difficulties when expose to the consonant clusters proposed in this thesis. These difficulties were able to be highlighted and worked upon by applying the methodology proposed in this thesis, both in the pre and the post-test. It can be concluded that after having been exposed to the methodology, the students were shown to have produced a noticeable improvement in the pronunciation of the target language.

It can be considered that the most positive result of the study is the successful application and outcome of the applied methodology. Some limitations in the study should be mentioned such as the small sample number and its corresponding problems of representation. Another limitation for the study would be the short time-span. The study could have been improved if more time would have been available as a more extensive methodology could have been designed and included.

The lack of a language laboratory affected the quality of pronunciation teaching during the instruction process, since individual instruction and monitoring was not able to be sufficiently given to facilitate the understanding and production of the studied phonemes. In order to solve the problem the subjects were individually recorded instead, to examine each
contribution at a later date. We propose that a modern laboratory could be built in the future in the computer room using a control software called *NetSupport School*

Regarding future lines of investigation, as Nunan (2000) and Hernandez et al. (2010) mention, the use of these methods together with the ones mentioned before such as questionnaires as well as the design of different tests where the subjects had been able to use the language in a more real and communicative context in order to collect data, could prove beneficial to such an investigation and therefore final word consonant cluster production.

It may be surmised that this thesis has highlighted two fundamental pedagogical implications. Firstly, that the teaching of English pronunciation is in urgent need of gaining more relevance and importance in the classroom being as its current reduced status is presenting serious issues in the development of communicative ability. Secondly, we believe that there is also an urgent need of further and detailed research in this area to confirm the conclusions reached in this thesis and to offer further solutions. If the status of English pronunciation is improved and academics continue to investigate and research this issue, we have reason to be optimistic.

**APPENDIX**

*Appendix I. Spanish and English consonantal phonemes.*

<table>
<thead>
<tr>
<th>Spanish</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voiceless</td>
<td>Voiceless</td>
</tr>
<tr>
<td>Stops</td>
<td>/p/ /t/ /k/</td>
</tr>
<tr>
<td>Nasals</td>
<td>/m/ /n/ /ŋ/</td>
</tr>
<tr>
<td>Fricatives</td>
<td>/s/ /tʃ/ /ʃ/</td>
</tr>
<tr>
<td>Affricates</td>
<td>/tʃ/</td>
</tr>
<tr>
<td>Liquids</td>
<td>/ɾ/</td>
</tr>
<tr>
<td>Tap/Trill</td>
<td>/ɾ/ /ɾɾ/</td>
</tr>
<tr>
<td>Glides</td>
<td>/w/ /j/</td>
</tr>
<tr>
<td>Glottal</td>
<td></td>
</tr>
</tbody>
</table>

*Appendix II. Text written to be used as data collection during pre and post-test.*

I’m going to tell you a little bit about what I did last Saturday. During the day, I did a lot of things; I went shopping, cleaned my house and washed my clothes. I was so busy, that I didn’t realise what the time was: I left home late and missed my train. I was very angry because I’d rushed to the train station to catch a train to see the football match. In the

NetSupport School allows creating a direct system for listening in a similar way as in a language laboratory, so the teacher would have an individual access to all the students who would also be able to actively participate at the same time they are been listened by their peers in real time.

Available at: http://www.tucows.com/preview/406775/NetSupport-School
end though, I had a great day: I phoned my friend John—we watched the match together at his house. My team won and we reached the final of the Champions League. I was so happy that I danced!

What a fantastic Saturday!

Appendix III. Text used to be unjumbled and read out loud during the first part of the instruction.

I’m going to tell you a little bit about what I did last Saturday. During the day, I did a lot of things; I went shopping, My team won and we reached the final of the Champions League. I was so happy that I danced!

What a fantastic Saturday!

In the end though, I had a great day: I phoned my friend John—we watched the match together at his house cleaned my house and washed my clothes. I was so busy, that I didn’t realise what the time was: I left home late and missed my train.

Appendix IV. Tongue twisters 58 to be practiced during the second part of the instruction.

- I wish I had washed my Irish wristwatch. Out in the pasture the nature watcher watched the catcher who washed his watch.
- She watched him as he reached the roof of the thatched house.
- A twister of twist once twisted a twist; a twist that he twisted was a three-twisted twist.
- Dust is a disk’s worst enemy.

Appendix V. Phonetic symbols, example words and set of words

to be allocated in the right column.

<table>
<thead>
<tr>
<th>/st/</th>
<th>/ʃt/</th>
<th>/tʃt/</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAST</td>
<td>RUSHED</td>
<td>WATCHED</td>
</tr>
</tbody>
</table>

- Searched; reached; first; test; alpinist; abolished; assist; matched; mixed; scientist; fished; washed.

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57 In this part of the instruction, students, twenty in total are divided into five groups of four students each. A person in each group gets one part of the jumbled text. There is a person in each group who gets two parts.

58 See created resource on this website: http://www.uebersetzung.at/twister/en.htm
Appendix VI. Pre-test and post-test results\textsuperscript{59}.

![Appendix VI. Pre-test and post-test results](image)

Appendix VII. Target consonant clusters accurately reproduced by students\textsuperscript{60}.

<table>
<thead>
<tr>
<th>Target cluster</th>
<th>Target cluster achieved pre-test</th>
<th>Target cluster achieved post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>last</td>
<td>9</td>
<td>2,19,6,1,5,14,17,13</td>
</tr>
<tr>
<td>missed</td>
<td>10</td>
<td>2,19,7,15,6,14</td>
</tr>
<tr>
<td>danced</td>
<td>-</td>
<td>2,19,15,6,10,14,13</td>
</tr>
<tr>
<td>washed</td>
<td>10</td>
<td>2,19,7,15,6,8,9,10,14</td>
</tr>
<tr>
<td>rushed</td>
<td>-</td>
<td>2,19,15,6,12,5,8,9,10,14</td>
</tr>
<tr>
<td>watched</td>
<td>10,14</td>
<td>2,19,6,1,5,10,14,14</td>
</tr>
<tr>
<td>reached</td>
<td>-</td>
<td>2,19,15,6,1,5,9,10,</td>
</tr>
</tbody>
</table>

\textsuperscript{59} For Pre and Post -test results audios, these Dropbox links have been created.

https://www.dropbox.com/home/PRE-TEST

https://www.dropbox.com/home/POST-TEST

\textsuperscript{60} A number instead of the subject’s given name was allocated to each of the twenty subjects undertaking the test for legal reasons of anonymity. The same number applies to both pre and post - test.
Appendix VIII. *Findings* of the investigation analysed using Praat

These pictures show part of the sound analysis done during the pre and post-test. In this case the performance of subject number six is shown in the graphs.
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