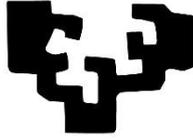


eman ta zabal zazu



Universidad  
del País Vasco

Euskal Herriko  
Unibertsitatea

LETREN  
FAKULTATEA  
FACULTAD  
DE LETRAS

# Pronunciation in EMI: the impact of instruction on the comprehensibility and foreign accent of a lecturer

---

Aritz Arroyo Astobiza

Department of English and German Philology

and Translation and Interpretation

Supervised by: Esther Gomez Lacabex

English Studies Degree

Course: 2022-2023

## **Abstract**

The increasingly fast spread of English Medium Instruction (EMI) in tertiary education has become notorious over the last decades. Nevertheless, doubts and concerns on lecturers' proficiency level and L2 pronunciation have also arisen with this rapid expansion. Arguments of insufficient support to boost the communication skills which these practitioners need in the classroom have been made. The present study aimed at exploring whether EMI lecturers' classroom speech can benefit from specific linguistic support. It inspected the effects of a customized pronunciation session for an EMI lecturer, whose classroom pronunciation was recorded before and after the custom session. The potential intervention effects were tested for pronunciation, via two groups of judges who listened and rated 30 excerpts using Likert scales for comprehensibility and foreign accent measures. The two groups chosen differed in English nativeness, one being English native speakers living in the United Kingdom and the other group being Spanish undergraduate English Studies students. The results of this case study revealed that both groups found the post-test easier to understand (increased comprehensibility), however, the lecturer's foreign accent was not judged to be reduced after the pronunciation session. These results seem to suggest that supporting actions can help these professionals in the plurilingual context they are working, in a communicative speech dimension such as pronunciation. Interesting results emerged from the comparison of the judgements given by the two groups of listeners. While both groups aligned in the identification of the post-test as more comprehensible, the non-native listeners tended to notice more comprehensibility and lower accentedness than the English native speakers, supporting the L1 intelligibility benefit, which indicates that comprehensibility among speakers who share a first language is higher. Finally, it was also found that the native speakers were able to make more distinct assessments for comprehensibility and foreign accent. This could be indicative of the fact that they may be attending to different features for each construct as previous literature has indicated.

## **Keywords**

Pronunciation, EMI, comprehensibility, foreign accent.

## Table of Contents

Abstract.....	2
Keywords.....	2
Table of Contents .....	3
1. Introduction.....	4
2. Background.....	5
2.1 Pronunciation.....	6
2.2 Lecturers' pronunciation in EMI. ....	9
3. The study.....	11
3.1. Research Questions .....	11
3.2. Instruments .....	11
3.3 Participants .....	13
3.4. Procedure.....	14
3.5. Pronunciation session.....	14
4. Results.....	15
4.1. Intra-analysis .....	15
4.2 Inter-task analysis .....	17
5. Discussion .....	17
6. Conclusions.....	19
Acknowledgements .....	20
References.....	21
Appendix 1.....	26

## 1. Introduction

The use of English as a means of instruction in tertiary education, frequently referred as EMI, has become progressively popular over the last decades (Coleman, 2006; Wilkinson & Zegers, 2008). One of the many reasons behind this fast expansion is “the need to prepare students for the global employment market” (Briggs et al., 2018, p. 675). During the last decades, EMI programmes have become increasingly popular as they combine the development of knowledge which university degrees offer as well as the learning and practice of a foreign language (FL), English being the most frequent one. Nevertheless, its rapid introduction has provoked mixed reactions. Some claim that this new teaching methodology “is being introduced without thorough stakeholder discussion at the institutional level and therefore without clear policies or expectations of teacher language proficiency levels...or teacher expertise” (Briggs et al., 2018, p. 691). Moreover, Dearden (2014) carried out an investigation at the Oxford University Department of Education (OUDE) among the British Council staff, who judged the rapid spread of EMI in 55 countries and the current state of this methodology in their universities. 51% of these 55 countries indicated that EMI was “controversial in public opinion” and only 38% was in favour of it.

Studies on the impact of EMI and Context and Language Integrated Learning (CLIL) have been intensively carried out in Europe in the last 15 years (Dimova et al., 2015; Lasagabaster & Doiz, 2021; Lasagabaster, 2022; Pérez-Cañado 2012). These studies have reported speech distress (Dimova, 2017) of a feeling of insecurity regarding communication skills (Doiz et al., 2013) on the part of lecturers. They have also studied students’ beliefs and perspectives regarding the difficulties in classroom communication (Hendriks et al., 2018; Gallardo del Puerto et al., 2015) or students’ satisfaction with the EMI programme (Macaro & Akincioglu, 2018; Toledo et al., 2012). Indeed, it is a reality that most EMI lecturers in Europe are non-native speakers (Inbar-Lourie & Donitsa-Schidt, 2020). In addition, pronunciation is a frequent concern in EMI (Gómez-Lacabex & Gallardo-del-Puerto, 2023; Henderson, 2019; Hendricks et al., 2018) and, despite the fact that there are programmes intended to support EMI lecturers for the communicative needs of their EMI courses (Lasagabaster & Sierra 2009), these have been described as insufficient (Briggs et al., 2018).

Framed within a research project which intends to explore interaction in EMI in the form of collaboration between the language and the content teacher, the present study

explored the effects of a customized session on pronunciation for a non-native EMI lecturer. It analysed such potential effects in two pronunciation descriptors: comprehensibility and foreign accent, which were judged by two different groups of listeners: a group of English native listeners, and a group of non-native listeners who were English Studies university students with some metaphonetic and pronunciation background.

This work presents a literature review section in which I will review some research on EMI lecturers' communicative skills, especially those studies which have analysed pronunciation. This first section also includes some general descriptions of how pronunciation has been conceptualised in the field of second language acquisition (SLA) and brief descriptions of the concepts of comprehensibility and foreign accent.. In a second part of the piece, the purpose of the study, methodological detail and a statistical analysis of the pronunciation descriptors by the two groups will be presented. Finally, the discussion and conclusions sections will try to consider the results obtained in the light of how pronunciation may be addressed in international teaching contexts and how comprehensibility and foreign accent may be interpreted in these contexts, as well as a consideration of the judgement differences between the two groups of listeners selected.

## **2. Background**

According to Macaro, EMI refers to “the use of the English language to teach academic subjects (other than English itself) in countries or jurisdictions in which the majority of the population’s first language is not English” (2018, p. 1). EMI has become a global phenomenon that has rapidly spread all over the world. It is currently being executed in both secondary and tertiary education, and it has received considerable attention both in the research and practice arenas over the last decades. However, the rather rapid introduction of EMI has also been seen as a controversial topic. Sahan et al. (2021) found that the amount of teacher-students interaction becomes reduced in EMI classrooms, given the added difficulty of communicating in another language. Lasagabaster (2022) or Briggs et al. (2018) have pointed out that lecturers often claim not to be fully prepared to teach their subjects in another language.

However, Breeze and Roothoof’s (2021) study has shown that teacher collaboration and involvement is crucial in these immersions for achieving the best

possible experience. The Spanish lecturers involved in the EMI programmes which they surveyed were keen on participating in these new teaching methodologies and were eager to try and improve students' immersion and learning through these contexts. Interestingly, one of the actions that these lecturers activated was full immersion, rejecting the L1 use in all contact situations with the students during lectures, office hours, exams and even emails.

The recent acceleration of social mobility and its consequential rise of linguistic and cultural contact has had a socio-political and educational impact reflected in the notion of plurilingualism (Picardo, 2018). As the concept of being able to communicate interpersonally and interculturally in different languages becomes a learning competence itself (Council of Europe, 2020), educational policies have rushed to integrate it in their programmes. The Spanish Ministry of Education (Spanish Ministry of Education, 2015) expected that, by 2020, a 33% of degree programmes would be taught in English, which has not been accomplished (Lasagabaster, 2021). Lasagabaster (2021) has looked at the situation of EMI in Spain and the effect of what he referred to as the “Englishization” of content teaching. As he stated, “unlike countries in Central and Northern Europe, Spain is not renowned for the foreign language learning abilities of its inhabitants” (2021, p. 77). Spanish being one of the most spoken languages in the world next to Chinese and English is one of the reasons mentioned for Spanish students' lower levels of proficiency in second languages. Compared to other countries in the EU, in Spain there is still a lack of English proficiency among students, teachers and administration personnel. A further reason has been recently highlighted by Breeze and Roothoof (2021): They indicated that some lecturers feel pressure when teaching in English since they were expected to do so efficiently but with limited prior guidance or support. A further factor that contributes to the low rate of the introduction of EMI programmes is the insufficient English proficiency among tertiary students. The development of EMI programs might become challenging when students struggle to comprehend the content in English and require translations to their native language or ask questions directly in their mother tongue.

## 2.1 Pronunciation

Pronunciation has evolved to be understood as a fundamental linguistic component in the interpretation of meaning (Munro and Derwing, 1995; Morley, 1991; Dalton & Seidhoffer, 1994). It has been conceptualized into three distinct but related constructs:

comprehensibility, intelligibility and foreign accent. The first one, comprehensibility, refers to the judgement of listeners on how easy or difficult it is to understand an utterance (Derwing and Munro, 1997). The second construct, intelligibility, indicates the actual communicability success, that is, whether meaning was achieved (Derwing and Munro, 1997). Intelligibility measures word and utterance recognition and is associated with how much of the utterances do the listeners correctly understand. Finally pronunciation may be interpreted in terms of accentedness, which is usually described as speech deviating from a native variety of the target language (Huensch & Nagle, 2021).

Research has provided evidence for the fact that these three constructs do not necessarily correlate (Huensch & Nagle, 2021; Isaacs & Trofimovich, 2012). Intelligibility and comprehensibility tend to be more correlated, although intelligible speech can be poorly comprehended when listeners exhibit difficulties understanding the message, for example. Accentedness relates less straightforwardly with intelligibility and with comprehensibility. Research has indicated that perfectly intelligible and comprehensible speech can be judged to have a strong foreign accent (Munro & Derwing, 1995). Interestingly, foreign accent can also influence listeners' perception of other aspects of linguistic competence. For example, more accented speech tends to be perceived as less grammatical (Ruivivar & Collins, 2019). The following section describes the two pronunciation descriptors used in the present study to measure the EMI lecturer's pronunciation: comprehensibility and foreign accent.

### *2.1.1. Comprehensibility*

As speech can be interpreted in terms of the easiness or difficulty in perceiving meaning on the part of a listener, several studies have found that listeners usually attend to various linguistic aspects such as fluency, lexical richness, or grammar accuracy along with some phonological ones such as word stress (Isaacs & Trofimovich, 2012; Crowther, Trofimovich, Isaacs, & Saito, 2015a; Crowther et al., 2015b) to interpret listener comprehensibility.

Recently, Suzuki and Kormos (2019) have conducted a study to examine the closer link between comprehensibility and fluency. In this study, 40 Japanese speakers' English was evaluated by native and non-native judges. The first were found to be harsher assessors for fluency. In this study, comprehensibility was best predicted by speech

fluency, or the speech at which the speaker is able to articulate, rather than breakdown fluency, or the frequency of pauses.

Two further studies on comprehensibility conducted by Crowther et al. (2015a & 2015b) examined the degree of impact of speaking task and L1 background on comprehensibility. In the first study (Crowther et al. 2015a), this group of researchers found that for the assessment of comprehensibility of less cognitively demanding speaking tasks mainly phonological categories were attended to. However, when the speaking task became more cognitively demanding (introduced unfamiliarity and required reasoning), comprehensibility assessment depended not only on phonological descriptors but also discourse, grammar and lexical aspects. These authors have also explored the influence of the L1 in the assessment of comprehensibility (Crowther et al. 2015b). They explored speech of Chinese, Romance, Hindi and Farsi speakers by 10 English native listeners. The results in this study indicated that the listeners attended to different language aspects for each speaker group: segmental errors led comprehensibility assessment of the Chinese speaker group and lexical and grammar aspects were errors associated with the identification of comprehensibility on the case of the Farsi group. No specific language aspect was associated with comprehensibility in the case of the Hindi group.

All in all, it seems that L2 speech comprehensibility is sensitive to many and varied aspects such as linguistic ones (phonological, grammatical or lexical) but also procedural such as task types or the language background of the L2 speaker.

### *2.1.2. Foreign accent (FA)*

Foreign accented speech has been found to provoke negative evaluations or stereotypical impressions on listeners (Thomson & Isaacs, 2022). It has been found to be the pronunciation construct which most closely relates to phonological information such as rhythm or syllable structure accuracy (Isaacs & Trofimovich, 2012) when assessed, that is, we tend to mainly attend to phonological information when we identify foreign accent. These phonological deviations of L2 accented speech are frequently explained by the influence of the speakers first language's phonological system, which tends to permeate the new L2 one in aspects in which the two systems present similar phonological features (Flege & Bohn, 2021).

The study of foreign accent perception and its phonetic cues is vibrant with recent work such as that of Pérez-Ramón, Cooke and García Lecumberri (2022), who explored whether foreign accent can be attributed to mere segmental deviations. Its potential intelligibility loss as FA has been frequently assessed holistically, that is, considering other possible alternations in the speech chain, as it is the case of the present work, in which more than one factor are likely to merge.

However, already in 2008, Munro explained how “accent-free” pronunciation is not a compulsory or mandatory goal for neither L2 students nor teachers, as long as a comprehensible communication is achieved. Indeed, Levis’s (2020) recent claim for the need to adopt an intelligibility principle and abandon a native-ness principle in foreign language teaching and learning has renewed this view. However, we still need to identify those factors which need to be targeted towards making L2 speech intelligible and comprehensible.

## 2.2 Lecturers’ pronunciation in EMI.

Many lecturers have agreed to take on the endeavour of providing a high-level education for home students, prepare students for a global marketplace or improve home students’ English (Briggs et al., 2018). They believe that EMI is beneficial for students and are ready to collaborate and contribute to these programmes (Breeze & Roothoof, 2021). Research is now inspecting the impact of such practice on its participants: students and teachers. A frequent concern is the increase in the cognitive load that learning in the FL brings (Pagèze & Lasagabaster, 2017), which may pose difficulties in the development of knowledge on the part of the students. As for the teachers, it has been shown that not exhibiting the required English proficiency can distress academics (Dimova, 2017). When it comes to pronunciation, lecturers frequently report that they cannot produce certain words (Doiz et al., 2013) and that they are worried about their “poor” pronunciation skills (Clark, 2018). Also, their poor pronunciation has been mentioned as the reason why students can slow down comprehension during lectures (Valcke & Pavón, 2016). Hendricks et al. (2018) conducted a research where Dutch and German lecturers were judged by Dutch and German students on their degree of accentedness in English. For this, they employed an online questionnaire that involved Likert scales evaluating several aspects of the speech such as: actual comprehension, perceived intelligibility and strength

of foreign accent. In this study, those EMI teachers with a heavier accent were evaluated less positively by their students.

However, authors such as Henderson (2019) remind us of the dual nature of communication, in which the listener must also develop a comprehensibility role as the responsibility for the improvement of communication falls on both speakers and listeners. As she states: “spoken interaction involves speakers and listeners, both of whom can adapt their attitudes and behaviours” (2019, p. 11). She suggests that specific phonetic interventions such as High Variability Phonetic Training (HVPT), for example, can help listeners/students’ adaptation to foreign accented speech. Based on the confirmed hypothesis which states that exposure to phonetic variability of vowel and consonant contrasts boosts perception and production of non-native sounds (Henderson, 2019), recent authors such as Barriuso and Hayes-Herb (2018) have already stated that HVPT is now ready to be exploited pedagogically. This line of research is promising, as it develops the need for listeners to develop comprehensibility skills and not rely so much on the speaker.

Some research has been conducted on supporting EMI lecturer pronunciation. Valcke and Pavón (2016) examined the effects of a pronunciation course which consisted of four pronunciation sessions that were provided over the course of a month which focused on the need to work on suprasegmental aspects of English intonation, rhythm and stress. Some lecturer’s pronunciations were assessed by EMI students from Spain and Belgium, who found the pronunciation of these lecturers to have improved after the sessions in terms of intelligibility and comprehensibility. Some students claimed that they had “really noticed improvements. Speech is more fluid and easier to understand” (2016, p. 336).

Another study by Gómez-Lacabex and Gallardo-del-Puerto (2021) examined EMI teacher’s views on pronunciation in a pre-post study of a single lecturer’s intelligibility after a pronunciation awareness session. Their results showed that most teachers found English to be a difficult language to learn and teach due to several reasons: most of them claimed that English has a lot of new and difficult sounds; they also stated that they had never received any kind of feedback or evaluation on their pronunciation. Interestingly, the participants did not seem to worry about their degree of accentedness when interacting with native speakers. The second part of the study involved a pre-post study examining the degree of intelligibility in a particular teacher action this lecturer conducted every year

in one of his lectures: he read aloud some lines in San Bartolomé de las Casas's *A Short Account of the Destruction of the Indies* on the destruction of the Native Americans by European colonists. The pronunciation experts prepared a customized pronunciation session in which the aforementioned passage was marked with pauses, lexical stress and linking, which were shown to the lecturer, who practiced the read aloud text following the pronunciation notations in the session. Results showed an improvement in the comprehensibility and intelligibility of the speaker's speech during and after the pronunciation session.

In line of the last studies reported, the present study examined the development of an EMI lecturer's pronunciation skills over a year, having participated in a pronunciation session in which personalized, specific feedback was provided. For this, the degree of his speech's comprehensibility and foreign accent was measured by two groups: native and non-native speakers. The following section will deepen into the methodology of the investigation and the procedure followed.

### **3. The study**

#### **3.1. Research Questions**

In order to analyse the pronunciation of the Spanish EMI lecturer before and after a pronunciation session by two different listener groups, who assessed excerpts extracted from his classroom speech, the research questions were entertained:

- RQ1: Is the lecturer's pronunciation more comprehensible and less accented after the pronunciation training session?
- RQ2: Do native judges and non-native judges identify foreign accent and comprehensibility differently?

#### **3.2. Instruments**

This study contributes to a research funded project by the Spanish Ministry of Economy and Competitiveness which aimed at exploring interaction in the EMI classroom as well as the collaboration between language and content. Willing to participate in the project, several EMI lecturers admitted observation in their classroom, collaborated in the creation of supporting materials and took part in seminars in which

they received insights and comments on pronunciation. In 2017, several of the lectures by one of the teachers were observed and recorded. This lecturer later decided to participate in a pronunciation session which was custom-designed and delivered in a one-to-one session after the year course finished, in June. The lecturer agreed to record a session with the same content as the previous one in the following academic year. The recording devices used were an Olympus Digital Voice Recorder VN-713PC and a Sony Digital Videocamera Handycam FDR-AX33.

Both lesson recordings (before and after the pronunciation session) were explored for excerpt identification. Around 30-second-long audio tracks were selected since this length provides enough time for the listener to analyse the lecturer's pronunciation, and, at the same time, it is not too long to distract the listener (Suzuki et al., 2021). The length varied from 30 to 45 seconds because natural stops in the participant's speech were used as speech boundaries.

An online survey was created in the platform *Google Forms*, which contained 66 questions. Questions 1-4 (Q1 – Q4) were the same for all respondents and these collected personal information such as: their current place of residence, their English level, how many languages they spoke and whether they were language professionals or not. Q5 was exclusive to the group of non-native experts, which asked about stays abroad in an English-speaking country. Q6 asked the English native speakers about their profession with the intention of discarding participants with jobs related to language teaching.

In a second section, the listeners were instructed to judge a series of audio-tracks for comprehensibility and foreign accent, which presented tracks from pre- and post-sessions randomized in two times. First, the participants had to rate the native-like or foreign-like accent of the speaker in each audio track using a 9-point Likert scale with the anchors 1 (*native-like*) and 9 (*very accented*). This section contained 30 questions (Q7 – Q36) with 30 short audio tracks (between 30 and 45 seconds each.)

In the third section of the survey, listeners listened to the same 30 audio-tracks, but in this case, they had to rank them in a 9-point Likert scale regarding comprehensibility, with the anchors 1 (*impossible to understand*) and 9 (*extremely easy to understand*). Responses were collected and displayed in an *Excel Sheet* and analysed using Statistical Package for Social Sciences (SPSS).

### 3.3 Participants

The EMI lecturer was a male participant in charge of the subject “History of Economics” as part of the Degree in History at the University of the Basque Country (UPV - EHU). He was one of the academics who agreed to take part on the collaboration project which also involved exploring communication during lectures. The lecturer was in his 50 and described that he learnt English around 20 years ago attending a course at the British Council. After that, he reported that his English learning experience mainly happened via exposure (mainly reading materials of his area of expertise, watching TV and using the internet) along with a 6 month stay at a British University, which, he stated, helped him significantly. He had never taken a phonetics course and, in order to become a part of the EMI programme, he had taken a one-week English course offered by his institution six years before this intervention took place. The first minutes of the pronunciation session were devoted to some self-pronunciation reflection. The lecturer indicated that he was only moderately confident with phonetic aspects of his English pronunciation such as vowels, consonants, stress or intonation. In some further Likert-like agreement statements, he agreed that he could recognise different accents of English and strongly agreed to wishing to improve his pronunciation towards a native-like accent and acknowledging that pronunciation is very important for successful communication.

The two listener groups that participated in the study are described as follows. On the one hand, the 13 non-native listeners were English Studies students in their third and fourth years of the degree at the University of the Basque Country. These students’ age range between 20 and 24 years old. They had previously taken specific English Phonetics or English Phonology courses and parted with at least a C1 proficiency level of English. On the other hand, the survey was sent to a group of native speakers (15) via relatives and via an international mobile-app designed for communication and language learning, called *Tandem*. The native participants’ age ranges between 20 and 40 years old and all of them lived in the United Kingdom. Most of them spoke a second language, mainly Spanish, German and French, and one participant spoke Arabic. The jobs mentioned were, accounting, nursing or university degree students..

### 3.4. Procedure

In order to create the speech excerpt to be analysed, all recorded lectures in 2017 were inspected to identify which session included similar content material as the session recorded for post-test analysis. Next, utterances from both stages were selected. One of the difficulties encountered during this process was that the recording devices used in 2017 and 2018 were not the same, resulting in a slightly different audio output. With the purpose of masking this effect, the audio tracks were edited, and some settings were adjusted, such as the pitch, the background noise and the volume. Moreover, listeners were informed that some of the audios could sound clearer given the constantly changing distance between the lecturer and the recording device, as he moved around the room during lectures.

Sharing the survey and reaching participants willing to collaborate was the next challenge. Roughly 180 students from third and fourth year of the English Studies degree were contacted via email and *WhatsApp*, 14 completed the survey, one of which had to be excluded as mentioned before. On the other hand, 3 of the natives were contacted through *WhatsApp*, and the rest through the app *Tandem*. There, users that qualified for the research were contacted and sent the link to the survey.

The survey opened on February 15<sup>th</sup> and closed on March 31<sup>st</sup> and collected a total of 32 responses. It was decided to eliminate 3 of them since they were native Spanish that were currently living in the UK. Moreover, another response was also excluded from the research since the non-native listener was not enrolled in any English-related degree.

After collecting all the data, the results were transferred to SPSS for analysis. A Kolmogorov-Smirnov test was applied to evaluate the distribution of the sample. Analyses concluded it was not normal, hence, non-parametric tests were applied. U-Mann Whitney tests were employed for the comparison of the means previously calculated.

### 3.5. Pronunciation session

The EMI lecturer agreed to attend a pronunciation session in June 2017, after the observations and course had finished. The session discussed and practiced some of the issues previously noticed about his pronunciation during some of his lectures that year, which had been observed after his consent. Three main pronunciation issues were

identified to target in the session: misplacement of lexical stress (*Chinese* \*/'tʃaɪnɪs/, *Japan* \*/'dʒapən/, *consequence* \*/kən'sɪkwəns/), lack of vowel reduction (*arrival* \*/a'raɪvəl) and orthographic transparency (*adoption* \*/a'dɒpʃən/, *island* \*/'aɪslənd/). It started with some reflections about his own pronunciation and his attitudes towards pronunciation (see section 3.3). In a second part, the session focused on lexical stress. It provided information about English stress being free and mobile, and guidance to identify stress notations in resources such as on-line dictionaries. It then involved some practice with immediate feedback in 6 activities in which he had to say the word with the correct stressed syllable (i.e.: *Japan* /dʒə'pæn/, *turbine* /'tɜːbɪn/, *textile* /'tekstaɪl/), affixation (*stabilize* /'steɪbəlaɪz/, *colonial* /kə'ləʊniəl/) and shifts (*industry* /'ɪndəstri/ → *industrial* /ɪn'dʌstriəl/). In a third part, incongruent spelling-pronunciation and vowel reduction features were also addressed with practice with immediate feedback, which included 14 and 12 items for each aspect. Immediate feedback was provided by the language professional supervising the session. The session concluded with some general guidelines for common sounds and spelling associations in English, and another activity in which phonetic symbols were presented in association with vowel sounds.

#### **4. Results**

The results are presented according to the two research questions. This section will first present an intra-analysis of pre- and post-test results (section 4.1) to answer RQ1. Section 4.2 will display group inter-task analyses considering differences between comprehensibility and foreign accent for each listeners group to answer RQ2.

##### 4.1. Intra-analysis

After confirming that the data did not follow a normal distribution using the Kolmogorov-Smirnov test, the participants' responses were analysed using a non-parametrical test. The results in Table 1 show the average means and standard deviations of both groups for foreign accent and comprehensibility. Averaged means of both the native and non-native groups revealed the lecturer's speech to be easier to understand in the post-test ( $z = -3.37$ ;  $p < .001$ ). However, foreign accent data did not reveal significant differences ( $z = 1.36$ ;  $p > .05$ ).

**Table 1** Mean, standard deviations (SD) and gain scores for Foreign Accent and Comprehensibility averaged for the two listener groups

	Pre-Test	SD	Post-Test	SD	Gain
Foreign Accent	7.39	0.90	7.55	0.78	0.15
Comprehensibility	6.51	0.98	7.01	0.98	0.50

First, Table 2 shows responses of both groups separately for Foreign Accent. We can see that non-native listeners judged the lecturer’s speech more accented in the post-test. These results were statistically significant ( $z = -3.21$ ;  $p < .05$ ). Natives’ results, on the other hand, judged the lecturer’s speech less accented which was also statistically significant ( $z = -2.99$ ;  $p < .05$ ).

**Table 2** Mean, standard deviation (SD) and gain scores for Foreign Accent for the native and non-native judges.

		Non-native		Native	
		mean	SD	mean	SD
FA	Pre-Test	6.86	1.09	7.85	1.09
	Post-Test	7.43	1.09	7.65	0.66
	Gain	0.57		-0.20	

Table 3 displays Comprehensibility results. It can be observed that non-natives found the speech particularly easier to understand than the native listeners in both testing phases, giving higher means in both pre- and post-tests. Overall, we see comprehensibility being judged higher by both groups, as non-native judges significantly interpreted post-test speech more comprehensible ( $z = -2.53$ ;  $p < .05$ ). Likewise, natives judged the speech as more comprehensible in post-test, which was also statistically significant ( $z = -2.48$ ;  $p < .05$ ).

**Table 3** Mean, standard deviation (SD) and gain scores for Comprehensibility for the native and non-native judges

		Non-native		Native	
		mean	SD	mean	SD
Comprehensibility	Pre-Test	7.12	1.09	5.98	0.44
	Post-Test	7.91	0.66	6.24	0.29
	Gain	0.78		0.26	

#### 4.2 Inter-task analysis

Finally, we compared differences between the two pronunciation measures for each listener group. As can be seen in Table 4, the native listeners used the Likert scales differently for each pronunciation measure, resulting in significant differences both in pre-test ( $z = -3.36$ ;  $p < .001$ ) and post-test times ( $z = -3.38$ ;  $p < .001$ ). These differences did not emerge for the non-native group listeners neither in the pre-test ( $z = -1.33$ ;  $p > .05$ ) nor the post-test times ( $z = -1.36$ ;  $p > 0.5$ ).

**Table 4** Means for FA vs. Comprehensibility, in both pre-test and post-test, for natives and non-natives

	Pre-Test		Post-Test	
	FA	Comprehensibility	FA	Comprehensibility
Native	7.85	5.98	7.65	6.24
Non-native	6.86	7.12	7.43	7.91

## 5. Discussion

The main objective of the present study was to explore whether a pronunciation intervention in the form of a tailored instruction session could impact the EMI lecturer's classroom pronunciation in terms of comprehensibility and accentedness. The results in the present analysis indicate that the lecturer's comprehensibility improved, justified by two different groups of evaluators, but not his foreign accent.

This data favours the undertaking of supportive action for lecturers willing to participate in EMI programmes, who wish to boost their communicative skills (Lasagabaster & Sierra, 2009; Gómez-Lacabex & Gallardo-del-Puerto, 2023). We shall consider several factors which may have contributed to the positive outcome in the comprehensibility of this speaker. First, his willingness to improve the targeted language aspect and to participate in the research project on the part of the lecturer, along with his high motivation, may have uplifted his interest and desire to actually improve his pronunciation (Briggs et al., 2018; Valcke & Pavón, 2016). Second, the tailored nature of the pronunciation session analysed should also be considered, given that it targeted specific language aspects which only the speaker had problems with. It also helped him direct attention to his own mistakes, as developing such attention and experiencing corrective feedback have also been shown to produce positive pronunciation outcomes (Dlaska & Krekeler, 2013; Saito & Lyster, 2012). In addition, the present study provides evidence for the fact that we may expect long-term effects on comprehensibility, given that the post-instruction recording was collected eight months after the intervention, showing that comprehensibility gains can be expected in longer periods. It provides further evidence for these tailored courses as in Gómez-Lacabex and Gallardo-del-Puerto (2023), who also analysed a tailored pronunciation intervention on an EMI lecturer's intelligibility, but their results were limited to a two-day post-instruction effect.

The foreign accent analysis showed inconclusive results. While non-native listener evaluated the speech as more accented in the post-test, natives judged it as more native-like. Hence, when grouped together, there was no significant change in the perception of foreign accent. While it could be considered that a longer pronunciation instruction period may eventually produce stronger changes in accentedness, the present data provide evidence for the fact that comprehensibility does not necessarily develop along with accentedness, that is, these two constructs did not correlate as the literature has suggested (see section 2.1). This issue has been examined and debated in many other research (Henderson, 2019; Hendriks et al., 2018) in which researchers defend the independency of each construct.

In a second research question possible differences between native and non-native listeners in the identification of foreign accent and comprehensibility were explored. If we first look at comprehensibility, the non-native group evaluated the lecturer's speech as more comprehensible than the non-native group in both pre and post-tests. This data

goes in line with previous research which claims that listeners who share the language of the speaker will find the speech easier to understand them, also known as the interlanguage speech intelligibility benefit (ISIB) (Bent & Bradlow, 2003). The results also align with Gómez-Lacabex and Gallardo-del-Puerto's study (2021) in which they also measured L2 speech comprehensibility of Spanish students speaking English by listeners with different L1s. In this study, Spanish L1 listeners found the task easier to understand than those whose L1 were English or Polish. Finally, the data in the present study also proved that the native listeners were able to perform more distinct judgements for each of the constructs observed. It might be that, as the literature suggests, they are able to attend to some cues for comprehensibility assessment such as fluency, grammar (along with phonological detail) and that they may be only using phonological information when it comes to foreign accent assessment (Isaacs & Trofimovich, 2012; Crowther, Trofimovich, Isaacs, & Saito, 2015a; Crowther et al., 2015b).

I would like to mention some challenges and limitations which were faced while conducting this study. First, finding participants to take part in the research was a daunting task. Furthermore, once these were contacted, the long duration of the *google forms* (around 30 to 40 minutes) pulled some participants back. A higher number of participants could have allowed for a different kind of approach to the questionnaire, had we made it shorter. Furthermore, given that L1 background has been found to be an intervening factor in the assessment of comprehensibility, counting on EMI lecturers from other European universities would have allowed further research questions such as whether the L1s of speakers affected comprehensibility and perception of accentedness, or even if prior experience with EMI contexts had any effect on their judgement.

Finally, an acoustic analysis of the lecturer's speech in the post-test might have been interesting to carry out to verify how the phonetic detail of his speech may have shifted from the previous time, and to check whether the targeted phonetic elements in the tailored session were indeed modified.

## **6. Conclusions**

The aim of this study was to explore the effects that a pronunciation-awareness session would have on a lecturer's speech, and whether native and non-native listeners judged it differently. Regarding the first research question, the data presented above has

provided evidence in favour of more comprehensible L2 speech, but not of decreased foreign accent. It was observed that the non-native listener group (Spanish) tended to judge the lecturer's speech (Spanish) more comprehensible and less accented than the native groups, providing further evidence for a speech intelligibility benefit among speakers who share the same L1. The data also suggested that native listeners were able to indicate differences between the two constructs explored: comprehensibility and foreign accent, possibly indicating that they can attend to different cues for each one. Overall, the study suggests that L2 pronunciation can be modified towards becoming more comprehensible after specific pronunciation intervention. It has also suggested that pronunciation constructs such as comprehensibility and foreign accent do not correlate and that we can expect differences between native and non-native listeners when they are asked to assess pronunciation.

### **Acknowledgements**

I am grateful for the data which I was allowed to analyse for this contribution, and which was collected under the funding project PID2020-117882GB-I00 by the Spanish Ministry of Economy and Competitiveness – MINECO.

## References

- Albrechtsen, D., Henriksen, B., & Faerch, C. (1980). Native Speaker Reactions to Learners' spoken Interlanguage 1. *Language Learning*, 30(2), 365-396.
- Barriuso, T. A., & Hayes-Harb, R. (2018). High Variability Phonetic Training as a Bridge from Research to Practice. *CATESOL Journal*, 30(1), 177-194.
- Bent, T., & Bradlow, A. R. (2003). The interlanguage speech intelligibility benefit. *The Journal of the Acoustical Society of America*, 114(3), 1600-1610.
- Breeze, R., & Roothoof, H. (2021). Using the L1 in university-level EMI: attitudes among lecturers in Spain. *Language Awareness*, 30(2), 195-215.
- Briggs, J.G., Dearden, J. and Macaro, E. (2018) English medium instruction: Comparing teacher beliefs in secondary and tertiary education. *Studies in Second Language Learning and Teaching* 8 (3), 673-696,
- Clark, E. V. (2018). Conversation and language acquisition: A pragmatic approach. *Language Learning and Development*, 14(3), 170-185.
- Coleman, James A. (2006). English-medium teaching in European Higher Education. *Language Teaching*, 39(1), 1–14.
- Crowther, D., Trofimovich, P., Isaacs, T., & Saito, K. (2015a). Does a speaking task affect second language comprehensibility?. *The Modern Language Journal*, 99(1), 80-95.
- Crowther, D., Trofimovich, P., Saito, K., & Isaacs, T. (2015b). Second language comprehensibility revisited: Investigating the effects of learner background. *TESOL Quarterly*, 49(4), 814-837.
- Dalton, C., & Seidlhofer, B. (1994). *Pronunciation*. Oxford University Press.
- Dearden, J. (2014). *English as a medium of instruction-a growing global phenomenon*. British Council.
- Derwing, T. M., & Munro, M. J. (1997). Accent, intelligibility, and comprehensibility: Evidence from four L1s. *Studies in second language acquisition*, 19(1), 1-16.
- Derwing, T. M., Rossiter, M. J., Munro, M. J., & Thomson, R. I. (2004). Second language fluency: Judgments on different tasks. *Language Learning*, 54(4), 665 – 679.

- Dimova, S. (2017). Life after oral English certification: The consequences of the Test of Oral English Proficiency for Academic Staff for EMI lecturers. *English for Specific Purposes*, 46, 45-58.
- Dimova, S., Hultgren, A. K., & Jensen, C. (Eds.). (2015). *English-medium instruction in European higher education* (Vol. 4). Walter de Gruyter GmbH & Co KG.
- Dlaska, A., & Krekeler, C. (2013). The short-term effects of individual corrective feedback on L2 pronunciation. *System*, 41(1), 25-37.
- Doiz, A., Lasagabaster, D., & Sierra, J. (2013). Globalisation, internationalisation, multilingualism and linguistic strains in higher education. *Studies in higher education*, 38(9), 1407-1421.
- Flege, J. E., & Bohn, O. S. (2021). The revised speech learning model (SLM-r). *Second language speech learning: Theoretical and empirical progress*, 10(9781108886901.002).
- Gallardo-del-Puerto, F., García-Lecumberri, M.L. and Gómez-Lacabex, E. (2015) The assessment of foreign accent and its communicative effects by naïve native judges vs. experienced non-native judges. *International Journal of Applied Linguistics*, 25 (2). 202-224.
- Gómez-Lacabex, E. and Gallardo-del-Puerto, F. (2021) Pronunciation in EMI. A Preliminary Study of Spanish University Students' Intelligibility and Comprehensibility in D. Lasagabaster & A. Doiz (Eds.). *Language use in English-medium instruction at university: International perspectives on teacher practice*. Routledge. 126-144.
- Gómez-Lacabex, E. and Gallardo-del-Puerto, F. (2023) Pronunciation and Intelligibility in English-Medium Instruction (EMI): Lecturers' Views and Skills in V. Sardegna & A. Jarosz (Eds.) *English Pronunciation Teaching: Theory, Practice and Research Findings*, Multilingual Matters, 2023. 151-167.
- Henderson, A. (2019) Training for English-medium instruction in French higher education: Keeping pronunciation in focus. *Recherche et Pratiques Pédagogiques en Langues de Spécialité*. Cahiers de l'Aplut, 38 (2), 1–15.

- Hendricks, B., van Meurs, F. and Reimer, A.K. (2018) The evaluation of lecturers' nonnative-accented English: Dutch and German students' evaluations of different degrees of Dutch-accented and German-accented English of lecturers in higher education. *Journal of English for Academic Purposes* 34, 28-45.
- Huensch, A., & Nagle, C. (2021). The effect of speaker proficiency on intelligibility, comprehensibility, and accentedness in L2 Spanish: A conceptual replication and extension of Munro and Derwing (1995a). *Language Learning*, 71(3), 626-668.
- Inbar-Lourie, O. & Donitsa-Schmidt, S. (2020) EMI Lecturers in international universities: is a native/non-native English-speaking background relevant?, *International Journal of Bilingual Education and Bilingualism*, 23(3), 301-313.
- Isaacs, T., & Trofimovich, P. (2012). Deconstructing comprehensibility: Identifying the linguistic influences on listeners' L2 comprehensibility ratings. *Studies in Second Language Acquisition*, 34(3), 475-505.
- Lasagabaster, D. & Sierra, J. (2009) Language attitudes in CLIL and traditional EFL classes. *International CLIL Research Journal*, 1. 4-17.
- Lasagabaster, D. (2021) *EMI in Spain*. In Wilkinson, R. and Gabriels, R. (Eds.), *The Englishization of Higher Education in Europe*. (p. 77-95). Amsterdam: Amsterdam University Press.
- Lasagabaster, D. (2022). *English-Medium Instruction in Higher Education*. Cambridge University Press.
- Lasagabaster, D., & Doiz, A. (Eds.). (2021). *Language use in English-medium instruction at university: International perspectives on teacher practice*. Routledge.
- Levis, J. (2020). Revisiting the intelligibility and nativeness principles. *Journal of Second Language Pronunciation*, 6(3), 310-328.
- Macaro, E. (2018). *English medium instruction*. Oxford University Press.
- Macaro, E., & Akincioglu, M. (2018). Turkish university students' perceptions about English medium instruction: Exploring year group, gender and university type as variables. *Journal of Multilingual and Multicultural Development*, 39(3), 256-270.

- Morley, J. (1991). The pronunciation component in teaching English to speakers of other languages. *TESOL quarterly*, 25(3), 481-520.
- Munro, M. J. (2008). Foreign accent and speech intelligibility. *Phonology and second language acquisition*, 5, 193-218.
- Munro, M. J. and Derwing, T. M. (1995) Foreign Accent, Comprehensibility, and Intelligibility in the Speech of Second Language Learners. *Language Learning* 45(1), 73-97.
- Munro, M. J., and Derwing, T. M. (1999) Foreign accent, comprehensibility, and intelligibility in the speech of second language learners. *Language Learning*, 49(1), 285-310.
- Munro, M. J., Derwing, T. M., & Morton, S. L. (2006). The mutual intelligibility of L2 speech. *Studies in Second Language Acquisition*, 28(1), 111-131.
- Pagèze, J., & Lasagabaster, D. (2017). Teacher development for teaching and learning in English in a French higher education context. *L'analisi linguistica e letteraria*, 25(2 Supplement). 289-310.
- Pérez Ramón, R., Cooke, M., Garcia Lecumberri, M.L. (2022) Generating iso-accented stimuli for second language research: methodology and a dataset for Spanish-accented English. *Proc. Interspeech 2022*, 1846-1850.
- Pérez-Cañado, M. L. (2012). CLIL research in Europe: Past, present, and future. *International Journal of Bilingual Education and Bilingualism*, 15(3), 315-341.
- Picardo, E. (2018) Plurilingualism: Vision, Conceptualization, and Practices. In Trifonas, P, Aravossitas, T. (Eds). (pp. 207-226). Springer International Handbooks of Education. *Handbook of Research and Practice in Heritage Language Education*, 207, 225.
- Ruivivar, J., & Collins, L. (2019). Nonnative accent and the perceived grammaticality of spoken grammar forms. *Journal of Second Language Pronunciation*, 5(2), 269-293.

- Sahan, K., Rose, H., & Macaro, E. (2021). Models of EMI pedagogies: At the interface of language use and interaction. *System*, *101*, 102616.
- Saito, K., & Lyster, R. (2012). Effects of form-focused instruction and corrective feedback on L2 pronunciation development of /ɪ/ by Japanese learners of English. *Language Learning*, *62*(2), 595-633.
- Saito, K., Trofimovich, P., & Isaacs, T. (2017). Using listener judgments to investigate linguistic influences on L2 comprehensibility and accentedness: A validation and generalization study. *Applied Linguistics*, *38*(4), 439-462.
- Saito, K., Webb, S., Trofimovich, P., & Isaacs, T. (2016). Lexical correlates of comprehensibility versus accentedness in second language speech. *Bilingualism: Language and Cognition*, *19*(3), 597-609.
- Suzuki, S. and Kormos, J. (2019) *Linguistic Dimensions of Comprehensibility and Perceived Fluency: An Investigation of Complexity, Accuracy, and Fluency in Second Language Argumentative Speech*. Cambridge University Press 42, pg. 143-167.
- Suzuki, S., Kormos, J., & Uchihara, T. (2021). The relationship between utterance and perceived fluency: A meta-analysis of correlational studies. *The Modern Language Journal*, *105*(2), 435-463.
- Thomson, R. I., & Isaacs, T. (2022). Evaluations of Foreign Accented Speech: Subjective Bias or Speech Signal Characteristics?. In *Theoretical and Practical Developments in English Speech Assessment, Research, and Training: Studies in Honour of Ewa Waniek-Klimczak* (pp. 27-44). Cham: Springer International Publishing.
- Toledo, I., Rubio, F.D., & Hermosín, M. (2012). Creencias, rendimiento académico y actitudes de alumnos universitarios principiantes en un programa plurilingüe. *Porta Linguarum* *18*, 213-229.
- Valcke, J. and Pavón, V. (2016) A comparative study on the use of pronunciation strategies for highlighting information in university lectures. In R. Wilkinson and M. L. Walsh (Eds.) *Integrating Content and Language in Higher Education: From Theory to Practice*, 323–341.

Wilkinson, R., & Zegers, V. (2008). Realizing content and language integration in higher education. (1 ed.) Maastricht University.

**Appendix 1:** Questions in the *google forms* to gather personal information about the participants of the study

Q1 – Where do you live?

- Spain
- United Kingdom
- Ireland
- Other...

Q2 – Which is your English level?

- A1
- A2
- B1
- B2
- C1
- C2

Q3 – Do you speak other languages? (Mark all the options that apply to you)

- Spanish
- French
- German
- Basque
- Other...

Q4 – Are you a language professional? (EFL teacher, linguistics student, etc...)

- EFL teacher
- Linguistic student
- Other...

Q5 – If you are a student, have you ever stayed in an English-speaking country for a long period of time? (3 weeks at least). If so, please state the length of your stay.

- \_\_\_\_\_

Q6 – What is your current job? In case of working as a teacher, please specify which subject you teach. If you are a student, simply write “Student of x”.

- \_\_\_\_\_