LANGUAGE PROFICIENCY IN EMI PROGRAMS: ANALYSIS OF LEARNERS' PERCEPTIONS OF THEIR OWN AND THEIR TEACHERS' LINGUISTIC ABILITIES

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1. INTRODUCTION

Teaching university curricular subjects in a foreign language (L2) is not a new concept, beginning in the 1990s and multiplying since then (Ramos Garcia, 2013). The reasons for teaching tertiary subjects in an L2 are various, with micro (university) as well as macro (both national and international) level motivations (Macaro et al., 2018) that include the need to recruit international students or to promote internationalization "at home" efforts (Beelen & Jones, 2015; Martín-Gilete & Fielden-Burns, in press; Piquer-Píriz, in press). For the most part, these motivations may be traced to the rise of globalization, which can be viewed from different angles. On the one hand, universities have entered a more commercial sphere, with education being one more product on the global market in a search to bolster university enrollments (Gupta, 2015), where English is particularly important as status-enhancing (Pecorari, 2020). On the other hand, there has been a real effort, especially in the European Union, to globalize education as a tool for a more cohesive social and political body, where international mobility is encouraged (European Commission, 2017), and plurilingualism and intercultural competence are some of the tools for achieving it. University programs in an L2 may be traced to the Council of Europe's work on language development which has occurred over the past three decades. This in particular has occurred in Spain since 1996, when the British Council

and the Spanish government began their collaboration on Content and Language Integrated Learning (CLIL) programs. The overall enthusiasm for such programs has been mostly positive, in particular where participants see English as a Medium of Instruction (EMI) and CLIL programs as a way to improve their language skills overall. However, resistance has also been observed when such educational approaches are perceived as enforced, where teachers protest feeling forced to change the language of their instruction (Coughlan, 2012). In this respect, examining students' views both on their own linguistic proficiency for EMI programs as well as their views as to their teachers' language skills may shed light on the degree to which they feel their training needs are being met through their EMI programs and their teachers in them. Currently, little detail is available on the different skill areas within students' perceived self-proficiency or the proficiency of their teachers, including traditional skills, i.e., Reading, Writing, Speaking, and Listening, as well as more concrete skill areas, such as speaking for oral presentations or determined types of vocabulary (academic versus communicative vocabulary, among others).

We will continue as follows. Firstly, we will review some of the relevant literature on students' beliefs about their linguistic skills and those of their teachers. Then we will review the research questions at hand and the methodology undertaken to address them. Finally, we will present results and discuss these, finishing with a conclusion and suggestions for future research.

1.1. ENGLISH AS A MEDIUM OF INSTRUCTION (EMI)

In EMI programs, content is taught in English as a Foreign Language (EFL), where it is often assumed that little to no emphasis is placed on language learning explicitly. Macaro et al.'s (2018) definition of EMI is: "the use of the English language to teach academic subjects other than English itself in countries or jurisdictions where the first language of the majority of the population is not English" (p. 18). EMI in Higher Education (HE) as a clearly growing phenomenon is evidenced in the academic research following it, which experienced a "surge," according to a systematic review of academic research by Macaro et al. (2018)

from 2011-2015 in Europe, in particular, with studies in Spain dominating. One of the troubling results of some of these studies points are the deep concerns heard from students and teachers equally about language proficiency, often in terms of proficiency not being adequate to the task of studying or teaching content in EFL (Dang et al., 2021; Doiz et al., 2019; Nieto-Moreno et al., 2021), which has led to further discussions on the need for "bench-marking" (Jiang et al., 2019) to assure quality in EMI and CLIL programs. Pérez-Cañado (2020) recently made a call to "CLIL-ize" EMI programs because a linguistic focus is missing in instruction, where EMI professors largely ignore their dual role as content and language teachers, to the detriment of the linguistic progress of their students. This concern seems to be the conduit for examining the larger question of the best way to achieve quality in such programs: if proficiency is not sufficient, or language concerns are ignored, content acquisition may be negatively impacted. For example, Soruç et al. (2021) list numerous studies concerning linguistic challenges across all skills in a variety of L2 environments and spanning multiple continents. Aizawa et al. (2020) investigate this as well through a 4-type categorization that includes language-related challenges as one of the most important problems in EMI programs in tertiary education.

Beliefs concerning language proficiency seem to arise when students and teachers discuss the weaknesses of their EMI programs (Macaro et al., 2017). Lasagabaster and Sierra (2011) point to teachers' perceptions of student language proficiency as an excluding factor for participation in content in L2 programs. Students' views of their own linguistic abilities have been linked to L2 anxiety, in particular speaking skills (Hengasdeekul et al., 2014 in Macaro et al. 2017; Piquer-Píriz & Castellano-Risco, 2021). What is more, student perceptions of their teachers' language proficiency are interesting, where, in some studies, students' opinions of their instructors' language proficiency are more pessimistic than their instructors' (Bolton & Kuteeva, 2012).

1.2. PERCEPTIONS AND BELIEFS IN EMI STUDENTS

Because the reasoning for undertaking EMI programs at the tertiary level varies, including motivations that are both extrinsic (for higher

status or prestige, to improve job viability, etc.) as well as intrinsic (to master a foreign language or get to know its culture, etc.), so do the studies which examine them. In general, research has looked into linguistic skills in one of two ways: to determine performance, i.e, what language skills might be changed or affected because of participation in an EMI program, and to determine student motivation and perception (what language skills students feel are important, existent or improving through their program, i.e., students' beliefs concerning language skills. On the latter, which is the focus of this paper, gauging students' perceptions of their programs lends insight into what is most present for them, a sort of pulse-taking of participants in real-time, which is missing in research, in particular, in pre-service teachers, the population of this study. Pre-service teachers are essential when considering the future of bilingual[47] classrooms (Banegas & Beamud, 2020) as they represent the generation who will be teaching there, and their views onto language skills in an EMI context may instruct where future training should take place. Moreover, an area in need of continuing research for pre-service teachers is on how they perceive their programs (Martí & Portolés, 2019). This is particularly important when considering the weight of the future work of these pre-service teachers as bilingual programs continue to grow and expand into HE.

1.3. STUDENTS' PERCEPTIONS: PREVIOUS RESEARCH ON STUDENTS' PERCEPTIONS OF LANGUAGE SKILLS

Previous research has approached students' perceptions of language skills in a variety of ways. In a study with another cohort of EMI pre-service teachers (n = 63) in the same bilingual primary education degree program as the present study, results showed that students felt that Speaking was their weakest skill and one that most needed to be reinforced (Delicado et al., 2022). The same students also indicated that they expected to advance a good deal in their linguistic proficiency because of their enrolment in the program. The majority indicated that they held

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[47] The use of the term bilingual here makes no reference to any determined level of proficiency, rather it is used synonymously with CLIL and EMI approaches to describe classes where content is taught in an L2.

B1-B2 levels of certified English, and they expected to finish their degree with a higher level: 46-48% expected to have acquired a CEFR B2 (High Intermediate) level while 28-34% expected to have acquired a level of CEFR C1 (Advanced) (Delicado et al., 2022). This group also rated bilingual teaching methodologies for their EMI classes lower than those used to teach the classes they had in their L1, Spanish, which the authors point to as an area for possible future improvement.

In another Spanish study, Madrid and Julius (2020), for example, issued an open-ended questionnaire to four bilingual groups in the primary school education degree with pre-service teachers (n = 216) from all four years of the degree at the University of Granada. Students had a B1 (45%) or B2 (24%) level, and where they indicated they had more difficulties in the EMI program was in Listening (in terms of being able to follow the class). Here 74-75% noted that they had difficulties, where most of the comments (37.72%) involved understanding listening in terms of understanding professors' explanations, in particular, in the first weeks of class. In terms of field-specific vocabulary, about 17% of these students commented on this being a frequent problem. Oral skills were also commented upon, concretely in the context of giving oral presentations in class or participating orally in class, where about 13% of the students viewed this as a challenge or difficulty. In a study of EMI students in Chinese universities, students perceived that "the intensive English listening and speaking instruction that the EMI students received in freshman year appeared to be more effective in improving their English proficiency than the EMI itself" (Lei & Hu, 2014, p. 122). In another study with 476 EMI students in six different Taiwanese universities (Yeh, 2014), students felt that EMI courses had a positive influence on their English language skills, especially on receptive skills, in this case, their Listening and Reading abilities in English. In a study of Japanese university EMI students, Speaking was the most difficult skill in their EMI classes (Aizawa et al., 2020), and in a related study (Rose et al., 2019), productive skills, in general, were seen as more challenging (Writing and Speaking) for EMI students taking classes in English. Also related to Speaking skills, some studies have pointed to students' perception that classroom interaction between teacher and students lowers

in EMI classes (Airey et al., 2017; Aguilar & Rodríguez, 2012; Ekoç, 2020), which seems particularly important to communicative abilities. Finally, Aguilar and Rodríguez (2012) found that EMI students felt they improved in their specialized vocabulary through their EMI classes, and in a study on Turkish university students, Soruç and Griffiths (2018) found that EMI students in interviews listed Listening to the instructor and Vocabulary as difficult areas of their EMI classes, a bit more than Speaking and Interacting with the teacher and with other classmates. Uchihara and Harada (2018) showed that Japanese university learners with larger aural vocabulary sizes felt more confident in their spoken language use, and those who rated themselves higher on their vocabulary knowledge were more likely to perceive themselves as proficient in productive language skills (Uchihara & Harada, 2018).

Different factors may impact students' impressions of their linguistic abilities and gains in an EMI program. For example, proficiency seems to impact how much students' see their EMI programs as beneficial to their progress in the language, where Barrios and López-Gutiérrez (2021) found that the higher the students' proficiency in English, the less satisfied they were with their program, indicating that stronger students might hold themselves to higher standards or be more self-critical. Interestingly, students' satisfaction with their EMI programs may also be related to how they view their teachers' linguistic skills, where one of the major sources of dissatisfaction with EMI and CLIL classes among students was their non-native lecturers' English proficiency in numerous studies (see Barrios et al., 2022, for a review of various academic levels, including the tertiary level). However little research looks at which of teachers' skills are seen as less proficient. In Soruç and Griffiths (2018), three EMI students mentioned that difficulties in "following some lecturers because their English is not good enough" was a problem, which might be understood as teachers' speaking proficiency, but which could also treat their abilities in grammar or vocabulary. Moreover, in 83% of the countries where EMI courses are taught, the lack of qualified teachers has been a principal complaint "with serious implications for teaching quality" (Dearden, 2015).

2. OBJECTIVES

In this paper, we describe a study on the analysis of students' perceptions of language skills for themselves as participants in an EMI program in HE, as well as their perceived needs for skills in the future and any differentiation between their perceptions of their skills and their teachers'. For this purpose, the following research questions (RQ) were formulated:

1. RQ1: In what areas do EMI students feel their linguistic skills are stronger/weaker in the program? Do their perceptions of their linguistic weaknesses coincide with what they feel they need to work on in the future?

2. RQ2: Do student weaknesses and future training needs coincide with the linguistic strengths they see in their teachers?

Results will shed light on how students see their progress and how well they feel their EMI programs are meeting their needs. The location of the study is of particular importance since Extremadura, the region where this study took place, is understudied in general, as one where innovation and internalization are catching up to other, more urban areas of Spain in general, and in particular, one of the regions in Spain where institutional internationalization has lagged (Corchuelo et al., 2015). Finally, the bilingual track undergraduate program these students are taking part in is one of its kind in Extremadura and a fairly new program, having been recently established (Delicado et al., 2022).

3. METHODOLOGY

The research design is based on previous research (Pérez-Cañado, 2020) using self-report, anonymous questionnaires to examine students' perceptions. These were issued in class by researchers, in students' native language (Spanish) and their participation was voluntary.

3.1. PARTICIPANTS

The study involved a total of 87 students, of whom a majority were women (n = 63) and minority men (n = 24). The average age of participants for both genders was between 18-21 years of age. Students were enrolled in the dual track undergraduate degree in Primary School Education in English and Spanish. They were in their third or fourth years of university study and had experience with a variety of content classes in English since 50% of their classes were taught in the language, including core classes.

In terms of students' English levels, they indicated that the majority had a B1-B2 level (see Figure 1), with about 12% having a pre-intermediate level (A2) and very few advanced levels (C2).

FIGURE 1: *Students' Accredited Levels of English*
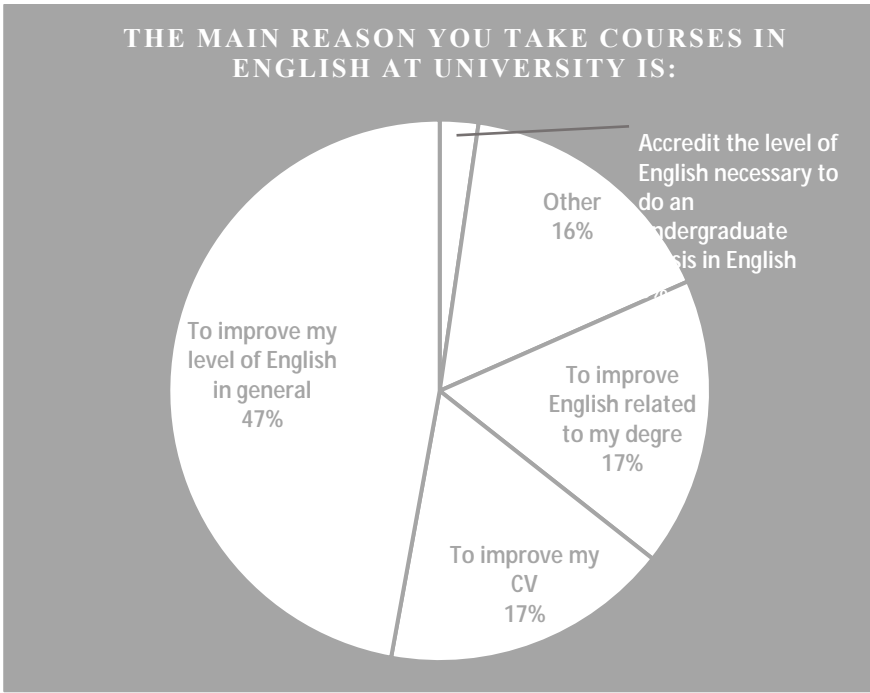*Students' Accredited Levels of English*
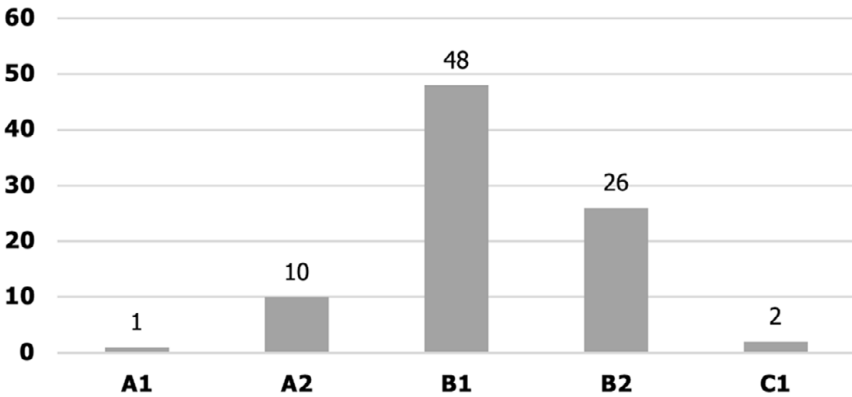
Source: Authors

In terms of the population, researchers also asked why students enrolled in the bilingual degree in order to understand their motivation toward it (see Figure 2). The most-chosen reason was related to language proficiency: *To improve my level of English in general* (at 47%), followed by *To improve my English related to my degree* and *To improve my CV*, at 17% each, and then *Other* at 16%, which is explored below.

THE MAIN REASON YOU TAKE COURSES IN
ENGLISH AT UNIVERSITY IS:

Other
16%

Accredit the level of
English necessary to
do an
undergraduate
thesis in English

To improve my
level of English
in general
47%

To improve
English related
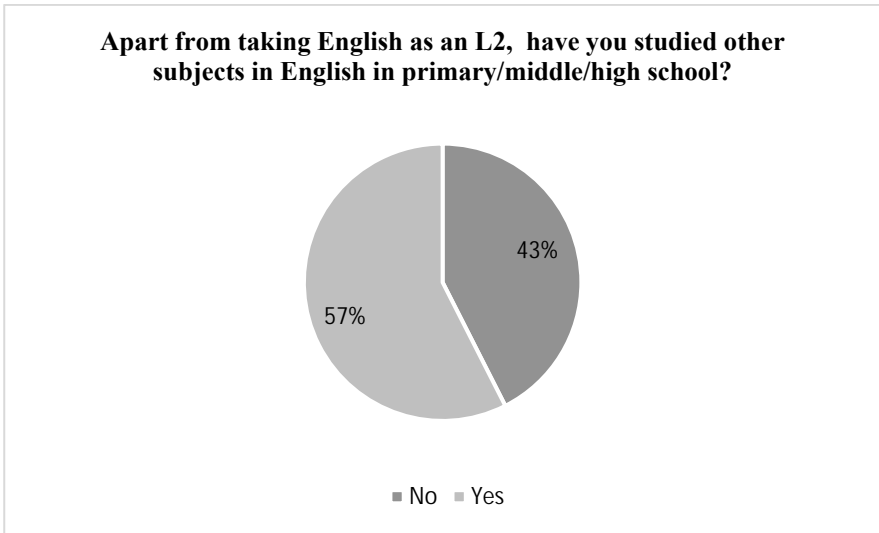to my degre
17%

To improve my
CV
17%

Source: Authors

In relation to the previous graph, we note that in the category "Other" students' principal/main reasons for enrolling in the bilingual program were the following ones, at 22% of each response:

– To be a bilingual teacher in the future and be able to work in public or private bilingual centers

– To expand knowledge in English

– To have a certified bilingual career

Apart from taking English as an L2, have you studied other subjects in English in primary/middle/high school?

43%

57%

■ No ■ Yes

Source: Authors

To sum up, we note that students were most familiar with bilingual programs, with over half having taken CLIL-type programs prior to their enrollment in the EMI undergraduate degree in Primary School Education, and most had an intermediate to upper intermediate level in English, with mainly linguistic motivations for enrolling in the program (to improve their English or to improve their English as related to their degree, to expand their English knowledge, to name a few).

3.2. INSTRUMENTS

The quantitative questionnaire used in the study was an adaptation of Pérez-Cañado (2020) with the addition of a section on students' motivation. It contained 45 items in total that looked at the following areas: perceived linguistic competence (themselves and their teachers), methodologies and materials, and assessment and future training and incentives. This instrument enquired about the four skills, both receptive (Listening and Reading) and productive (Writing and Speaking), as well as Vocabulary (both having knowledge of academic vocabulary for class, as well as having Communicative vocabulary that is updated). Another communicative dimension that is related to Speaking was the item

asking about students' knowledge of expressions to interact and communicate in the EMI classroom. All items asked about students' skills in the frame of being "sufficient" or "adequate" for their EMI classes, for example: *I have adequate knowledge of generic expressions in English for communication and interaction in the bilingual classroom*, or *My teacher(s) have adequate writing skills in English.* The instrument used a 4-point scale for agreement (Totally disagree to Totally agree), and also collected some limited qualitative data in write-in spaces where students were given the following written prompt: *If you have any other comments related to this section that you would like to include, please specify them here.* However, due to space limitations in this paper, we will only discuss quantitative data here.

3.3. ANALYSIS

Students' response data were analyzed using SPSS (Version 22.0) to compare group means per area and per item. Given that the samples are independent, a one-way analysis of variance (ANOVA), which is used to determine whether there are any statistically significant differences between the means of independent (unrelated) groups, was conducted. Because ANOVA can only tell if a difference exists, not where the differences are concretely, a post-hoc test was performed to determine which items were significantly different.

4. RESULTS AND DISCUSSION

Results will be described below in relation to each research question posed, and a discussion of their significance will follow.

4.1. RQ1: IN WHAT AREAS DO EMI STUDENTS FEEL THEIR LINGUISTIC SKILLS ARE STRONGER/WEAKER IN THE PROGRAMME?
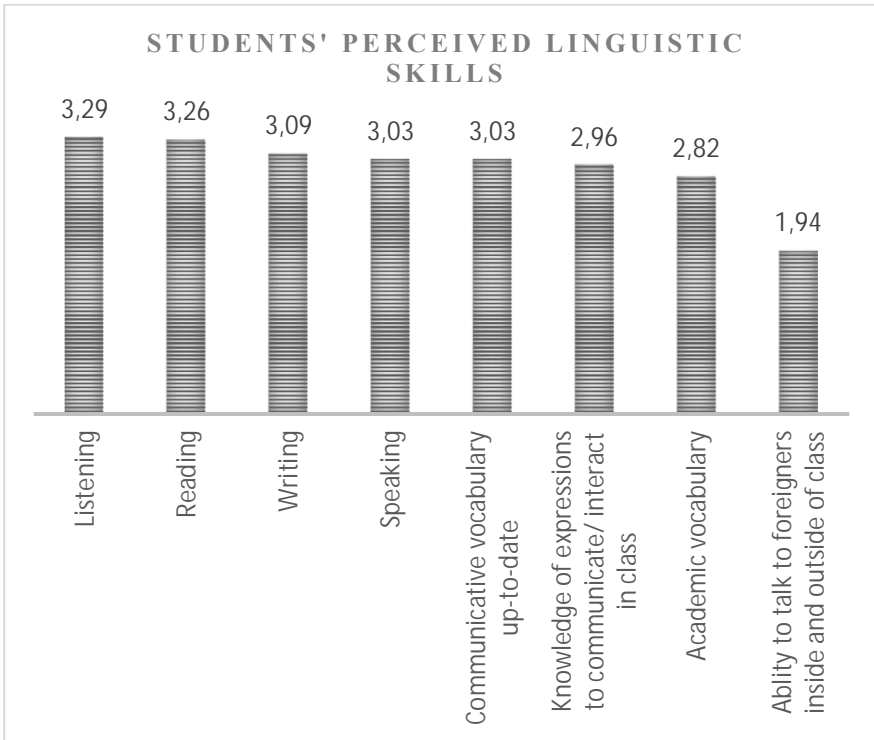
The data for items are listed from the highest marked items to the lowest (see Figure 4). In terms of where students felt their linguistic skills were stronger in the context of their EMI classes, we note firstly that students' perceptions were found to be overall quite positive, with most skills

being marked above a 3 on a 4-point scale, and only one item was marked below a 2, or as definitively negative. The highest-marked skill was Listening (3.29 on average, with 67 of the 87 responses being positive for a 77% positive rate), followed by Reading (3.26), and where the least positively perceived skill was Ability to talk to foreigners with an average of 1.94 (only 26 out of 87 students, or 30% of them marked this positively). Findings suggest that the two receptive skills, Reading and Listening, are skills that students feel stronger in, while the more productive oral skills (in general in Speaking, Knowledge of expressions for classroom interactions and Ability to speak in real-world communicative situations with foreigners, are perceived as weaker, alongside vocabulary of two types, Academic and Communicative.

It may be that students did not perceive their English skills as translating to another context or speaker or that they did not feel ready for this for some reason. However, the lowest marked item is interesting, given that this is just the goal of communicative language teaching, at the heart of current EMI and CLIL programs: to use English in authentic contexts. Relatedly, it is important that the two productive and oral skill areas: Speaking (3.0 average) and Expressions for communication/interaction in the bilingual class (2.96 average), are also on the lower end of the scores for students' perceptions of their skills. These two areas seem most important for communicatively using the L2 since they involve productive use of English, which implies that students feel less certain of themselves here. These findings echo some previous research on receptive skills being perceived more positively than productive ones in EMI programs in Taiwan (Yeh, 2014) and at Japanese universities (Aizawa et al., 2020; Rose et al., 2019). Unlike another Spanish context, the data here differ from previous research on Listening, where for example, Madrid and Julius (2020) observed that EMI students in Spain found Listening to be one of the most difficult areas, in particular, in terms of understanding their teachers' lectures in the L2 at the beginning of the course. Finally, students marked both types of Vocabulary lower than other skills, with an average of 2.82 and 3.03 respectively, which is similar to other studies in Turkey (Soruc & Griffiths, 2018). It is interesting that Academic vocabulary was marked a bit lower than Communicative

vocabulary being up to date. Previous studies did not investigate this difference; thus, the present study may shed light on the fact that different types of vocabulary, or different factors in vocabulary, like being up-to-date, may be important to consider in the future.

FIGURE 4: *Students' perceived linguistic skills*

STUDENTS' PERCEIVED LINGUISTIC SKILLS

3,29 — Listening
3,26 — Reading
3,09 — Writing
3,03 — Speaking
3,03 — Communicative vocabulary up-to-date
2,96 — Knowledge of expressions to communicate/ interact in class
2,82 — Academic vocabulary
1,94 — Ability to talk to foreigners inside and outside of class

Source: Authors

To investigate the importance of these responses statistically, we also examined which specific items were significant with an ANOVA test. In this sense, we found again that oral skills can be highlighted among students' answers (Table 1), with Speaking skills in general (Item 2, with an SD of 0.77), Item 6 on Expressions to communicate and interact (SD=0.75) and Communication inside and outside the classroom with foreigners (Item 20, with an SD of 1.10). This last item (no. 20) showed the greatest volatility among the students' responses and was the lowest rated item here. Consecutively, Item 2 on Speaking presented the second

highest volatility and Item 6, on Knowledge of expressions to communicate and interact in the bilingual classroom is the third most volatile response.

TABLE 1: *ANOVA test students' perceived linguistic skills*

Items	Count	Sum	Mean	Variance	SD*
2. I have an adequate capacity for oral expression in English (speaking).	87	264	3.03	0.59	0.77
6. I have adequate knowledge of generic expressions in English to communicate and interact in the bilingual classroom.	87	259	2.98	0.56	0.75
20. I communicate in English with foreign classmates inside and outside the classroom. * SD= Standard Deviation	87	169	1.94	1.22	1.10

Source: Authors

Moving on to the second part of RQ1, here students were asked how their self-perceived weaknesses corresponded, if at all, with their perceptions of what they needed to work on in the future, where the research question formulated was: *Do their perceptions of their linguistic weaknesses coincide with what they feel they need to work on in the future?* In Figure 2 in the previous section, we noted that students felt less positive about their oral skills and vocabulary, though only oral skills were statistically significant. We can see in Figure 5 that these weaknesses are also where they felt they need future training, so that they coincide, with Speaking (Oral production for class presentations) being marked highest as most in need of future work (2.99 average), followed by another speaking oriented item, Oral production to communicate/interact in class (2.86 average) and Vocabulary for their field (2.81 average). The items for their Ability to talk to foreigners and Communicative vocabulary were not included for future training needs and so do not appear here. The convergence of students' opinions on their linguistic weaknesses and their future training needs further underscores the perceived importance of oral production since they are marked as the two areas of most need, in order, Oral production for classroom presentations (2.99),

Oral production to communicate/interact in class (2.86) and Vocabulary for the field of education (2.83), followed by Writing, Reading and Listening, so that the skills in which they felt they needed the least future training are the more passive, receptive skills that they also felt the strongest in, as noted in the previous section.

FIGURE 5: *Students' perceptions of future training needs*
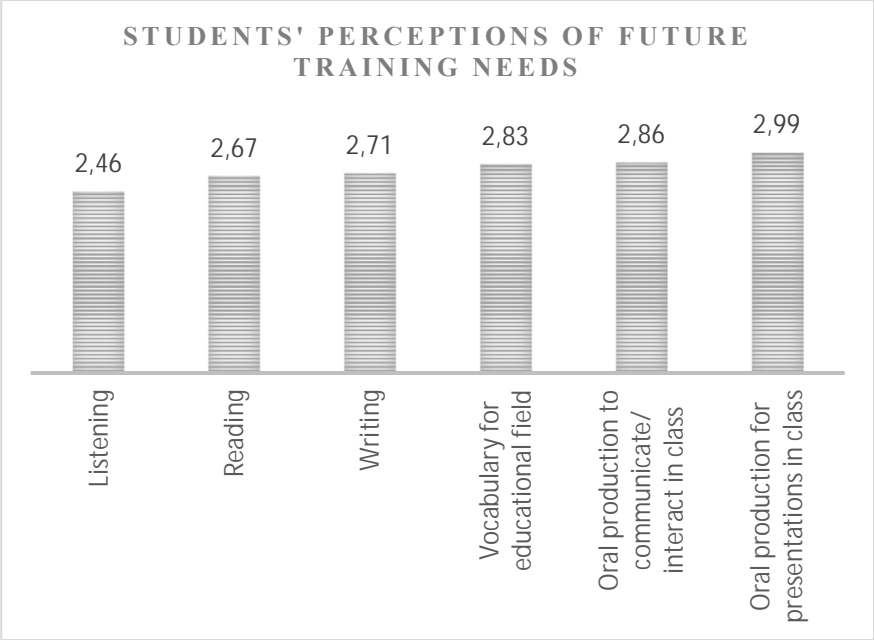

Source: Authors

So far, we have noted where EMI students see their linguistic strengths, weaknesses, and corresponding related training needs, through research question 1. We will now turn to research question 2.

4.2. RQ2: DO STUDENTS' WEAKNESSES AND FUTURE TRAINING NEEDS ALSO COINCIDE WITH THE LINGUISTIC STRENGTHS THEY SEE IN THEIR TEACHERS?

Past research shows that although EMI students are generally more satisfied with their programs than not (Barrios et al., 2022; Delicado et al., 2022), when asked about the source of their dissatisfaction they often

mention their teachers' low English proficiency (Barrios et al., 2022; Dearden, 2015), though little detail is available on which of the teachers' skills should be improved. Looking closer at how students perceive their teachers' skills investigates how well they feel their EMI program is meeting and will continue to meet their needs. Firstly, it is again important to note that, just as in the previous sections, overall, students' views are quite positive, here with all items being marked as either agree or strongly agree, above 3 on a 4-point scale. As shown in Figure 6, results indicate that students rate their teachers' Academic vocabulary highest (3.44), followed by receptive skills, Listening and Reading, while productive skills are scored lower, with Speaking marked as the lowest of all the perceived teachers' skills. Soruc and Griffiths (2018) note that three EMI students made comments that following lecturers was difficult "because their English is not good enough" which might be inferred to refer to teachers' speaking skills, but this is not clear, as mentioned earlier. In this sense, the data here sheds light on how students might order their teachers' linguistic strengths.

FIGURE 6: *Students' perceptions of teachers' skills*
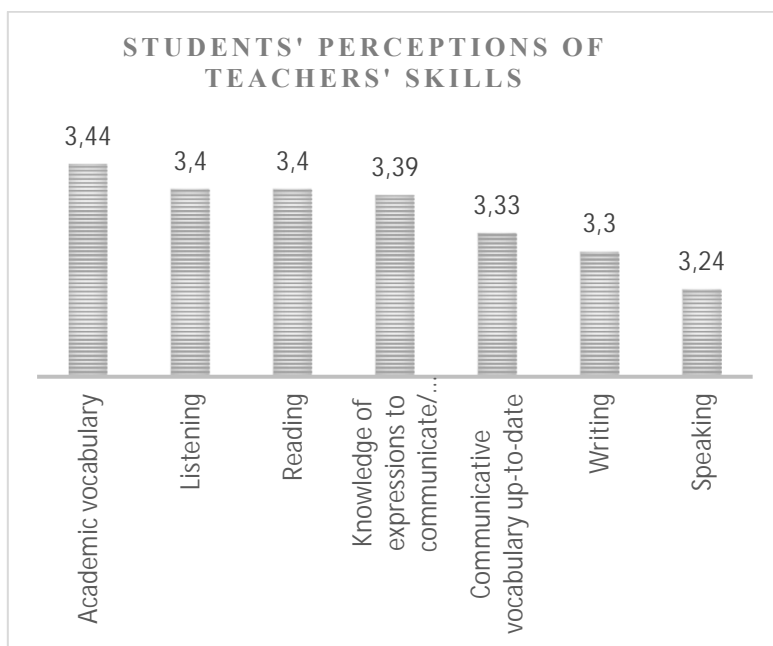
To investigate the importance of these responses statistically, we also examined which specific items were significant with an ANOVA test. No statistically significant results were found in these items (see Table 2), though the three lowest-marked items did show a bit more volatility: Speaking (Item 10, with a SD of 0.85), which was the most volatile item as well as lowest-marked item (highlighted in gray), followed by Communicative vocabulary being an up-to-date area (SD= 0.83) and Item 12 on Writing (SD = 0.76).

TABLE 2: ANOVA test students' perceptions of teachers' skills

Items	Count	Sum	Mean	Variance	SD*
10. My teacher(s) has(have) an adequate capacity for oral expression in English (speaking).	87	282	3.24	0.72	0.85
12. My teacher(s) have adequate writing skills in English.	87	287	3.30	0.58	0.76
15. My teacher(s) knowledge of communicative vocabulary for the bilingual classroom is up to date. * SD= Standard Deviation	87	290	3.33	0.69	0.83

Source: Authors

We can further examine this question however by comparing students' perceptions about their own linguistic skills with their teachers' directly in exploring the averages for each item (see Table 3). We found here that, overall, students view their teachers as being more linguistically proficient than themselves, where they scored their teachers higher than they scored themselves in every skill area. This may be seen positively overall in terms of indicating that they feel their teachers can contribute to their linguistic progress. We can also note that they scored teachers' receptive and productive skills similarly to their own for the most part, where both reading and listening were scored higher than speaking. Students rated their teachers as least proficient (3.24) in one of the very areas they see themselves as weak in, and also one of the top three areas (Speaking for presentations and in-class interaction/communication, firstly, followed by the need to work on vocabulary for their field) they needed the most training in for the future (Figure 5), which may have

implications for how well they feel their teachers can address these particular needs.

TABLE 3: *Comparison of students' self and teacher perceptions*

	Linguistic Proficiency				
	Students' self-perceptions		Students' perceptions of their teachers		
	Item	Mean	Item	Mean	
1	1. I have adequate listening comprehension skills in English.	3.29	9. My teacher(s) have adequate listening skills in English.	3.40	
2	2. I have an adequate capacity for oral expression in English (speaking).	3.03	10. My teacher(s) has(have) an adequate capacity for oral expression in English (speaking).	3.24	
3	3. I have adequate reading comprehension skills in English.	3.26	11. My teacher(s) have adequate reading comprehension skills in English.	3.40	
4	4. I have an adequate capacity for written expression in English (writing).	3.09	12. My teacher(s) have adequate writing skills in English.	3.30	
5	5. I have adequate knowledge of specific academic vocabulary in English.	2.82	13. My teacher(s) have adequate knowledge of specific academic vocabulary in English.	3.44	
6	6. I have adequate knowledge of generic expressions in English to communicate and interact in the bilingual classroom.	2.97	14. My teacher(s) have adequate knowledge of generic expressions in English to communicate and interact in the bilingual classroom.	3.39	
7	7. My knowledge of communicative vocabulary for the bilingual classroom is up to date.	3.03	15. My teacher(s) knowledge of communicative vocabulary for the bilingual classroom is up to date.	3.33	

Source: Authors

Although they gave higher marks to their teachers' skills and in general rated receptive skills higher than productive ones, there were notable differences we can point to when comparing these averages in Table 3. For example, Writing, a productive skill, which is ranked quite low for teachers, was in the top three of students' own linguistic strengths. In two items, 5 and 6, on Academic vocabulary and Knowledge of classroom expressions to communicate and interact, differences between

their perceptions of themselves and of their teachers seem most pro-
nounced (a 0.62 and 0.36 difference, respectively). Students perceived
their teachers as being most proficient in Academic vocabulary, and this
was the second-lowest marked area for their own strengths. In general,
vocabulary was an area they wanted to work on in the future, so this may
mean they feel academic vocabulary is a skill their EMI program can
help them with currently and is needed for their future. Their weakest
perceived area for current skills as well as the area they most wanted
future training in was the item for general Speaking, which was also the
weakest skill they marked for their teachers.

When looking at these averages statistically, there was an overall differ-
ence between the total means of the items when comparing students'
views about their own linguistic skills and those of their teachers. Ac-
cording to the results of the ANOVA (see Table 4) the alternative hy-
pothesis is accepted for the total average about the teachers and the stu-
dents themselves since the critical value of F is less than the value of F
calculated. This is a positive result: these students feel their teachers
have higher levels than themselves in these skill areas when taken as a
whole and therefore we may assume they feel that their teachers are able
to help them in their linguistic progress generally.

TABLE 4: Variance analysis of overall total means between perceptions of self and percep-
tions of teachers

Variance Analysis						
Origin of Variations	Sum of Squares	Degrees of Freedom	Mean Squares	F	Probabi-lity	Critical Va-lue for F
Items	0.095	6	0.016	1.01	0.4968	4.28
Groups: (Perceptions of selves and profes-sors)	0.279	1	0.279	17.6	0.0056	5.99
Error	0.094	6	0.016			
Total	0.468	13				

Source: Authors

Taking into account that there is a statistically significant difference, it is necessary to apply a post-hoc test (Tukey / Kramer test) to detect which items are showing these differences in their means. Results indicated that the differences are found in items 5 and 6, so that where students feel their teachers' linguistic skills most surpass their own is in Knowledge of classroom expressions to communicate and interact and in Academic vocabulary.

TABLE 4: Variance analysis (ANOVA) of two factors with a single sample per group perception of linguistic competence of teachers and themselves

Summary	Count	Sum	Mean	Variance	Standard deviation
Item 1	2	6.7011	3.3506	0.0054	0.0731
Item 2	2	6.2759	3.1379	0.0214	0.1463
Item 3	2	6.6667	3.3333	0.0095	0.0975
Item 4	2	6.3908	3.1954	0.0214	0.1463
Item 5	2	6.2644	3.1322	0.1856	0.4308
Item 6	2	6.3678	3.1839	0.0856	0.2926
Item 7	2	6.3678	3.1839	0.0447	0.2113
Students' perception of themselves	7	21.5287	3.0755	0.0267	0.1635
Students' perception of professors	7	23.5057	3.3580	0.0048	0.0694

Source: Author

In terms of Academic vocabulary, this pronounced difference bodes well for students' sense of success in their EMI programs, since they rate their teachers highest here and see it as a weakness of their own and a future training need. It may be that vocabulary for the field is particularly attached to students' perceptions of teacher expertise. In terms of Knowledge of expressions to communicate/interact, which –as we have said– is related to speaking, this skill was rated higher for teachers than for themselves and was also quite pronounced. The difference in responses here between scores on general Speaking and Knowledge of expressions to communicate/interact, which was rated higher (3.4), may be related to the fact that previous research has shown that students feel

interaction between teacher and students goes down in EMI classes (Airey et al., 2017; Aguilar & Rodríguez, 2012; Ekoç, 2020), where teachers' skills in interaction in class are less visible and thus rated lower than general speaking.

5. CONCLUSIONS AND FUTURE IMPLICATIONS

Although in general EMI students in this public Spanish university were quite positive about their EMI program overall, as has been noted here and in previous research (Delicado et al., 2022), some interesting differences were found in the data. Students see themselves and their teachers as having stronger receptive skills (Listening and Reading) than productive skills (Speaking). However, some nuances were visible in the results, such as the differentiation made between general Speaking skills and Knowledge of expressions to interact and communicate in the classroom or the difference between speaking with classmates and speaking with foreigners, which students scored as the lowest-marked skill on the survey. Additionally, different factors for vocabulary were considered here, having sufficient Academic vocabulary and Communicative vocabulary as being up-to-date, where Academic vocabulary was perceived as being a weakness for students, as well as a future training need, and an area where they felt their teachers were strongest. This may mean that students feel their teachers are meeting their needs in this area or that it is an expected result of an EMI program in general in an academic context such as this one. However, another area important to students for future training, oral production for class presentations and oral production to communicate in class as well as one of their weaker current skills was Speaking, which they scored as their teachers' weakest skill. Whether or not this perception is a reflection of reality in terms of the oral skills of EMI teachers, or simply a pervasive myth students' attached to non-native teachers remains to be seen. In particular, knowledge of language for classroom interaction, related to speaking, stood out here as an area that might need further research.

Not only should EMI programs weigh the need for greater quality control measures for linguistic proficiency, as other research has called for

(Pérez-Cañado, 2020; Jiang et al., 2019), but these measures should consider placing emphasis on perceived weaker skill areas, in particular productive (oral) skills and academic and field-related vocabulary, which stood out in this study. They may also want to consider the importance of transferable skills and how to create space in EMI programs for work that serves as a conduit for other real-world contexts, such as speaking with foreigners and classroom interaction.

Finally, another perspective on this need may be greater resource development, which we have addressed in our own context through the development of open-source models for EMI teachers to work on their students' academic English in six areas: outlines, concept maps, writing definitions, writing summaries, reporting data, presentations and writing abstracts (Piquer-Píriz et al., 2022). These modules were designed through the project *Diseño de entornos virtuales de aprendizaje colaborativo para la enseñanza integrada de contenidos y lenguas extranjeras (AICLE) en la Educación Superior adaptados a la Universidad de Extremadura – ICLUEx*, referenced below. They address many of the weaker areas students highlighted in this study, including academic vocabulary and speaking skills in an academic context, and preliminary pilot studies point to their initial effectiveness for improving EMI students' work in these areas. More studies of how these modules may be used, in particular for pre-service teachers, is currently on-going.

6. LIMITATIONS

These results were limited to a determined group of 87 participants and may not be generalizable to other groups or areas.

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