English for Specific Purposes 79 (2025) 137–151

Contents lists available at ScienceDirect

English for Specific Purposes

journal homepage: http://ees.elsevier.com/esp/default.asp

An examination of the use of spoken interactional metadiscourse markers in EMI lectures from different disciplines

David Lasagabaster*, Ada Bier

University of the Basque Country UPV/EHU, Spain

ARTICLE INFO

Article history:

Keywords:
Metadiscourse
Interaction
Interactional discourse markers
EMI
English-medium instruction
Discipline

ABSTRACT

The internationalisation process has encouraged the spread of English-medium instruction (EMI) in universities all over the world. Whereas the purported benefits of EMI are more often than not taken for granted, there are many issues related to what is actually happening in EMI classrooms that still need to be looked into. In this vein, the use of interactional metadiscourse markers when delivering content in the lingua franca and the potential impact of the disciplinary culture are two issues that have hitherto been largely overlooked. Since research studies indicate that teachers in the arts and social sciences tend to use a higher number of metadiscourse markers than those in the hard sciences, the impact of the discipline in classroom discourse deserves further attention. With a view to fill in this research gap, in this paper we analysed the 29,469 interactional metadiscourse markers found in 36 lectures of three different disciplines, namely economics, engineering and history. The overall distribution of interactional metadiscourse markers revealed that engagement markers happened to be the dominant category by an ample margin, followed by self-mentions, hedges, boosters and attitudes markers. In addition, statistically significant differences were found in the use of interactional markers across the three disciplines, a fact that should be considered in professional development courses. The pedagogical implications to be drawn from these findings and some future directions for research are also put forth.

1. Introduction

Universities all over the world have gone through intensive processes of internationalisation during the past three decades. Such internationalisation process more often than not entails Englishisation, that is, the use of English in university contexts in which the local language or languages were used before (Lanvers & Hultgren, 2018). In this global trend, English-medium instruction (EMI) has become one of the main courses of action undertaken by higher education institutions with a view to underpinning their internationalisation plans. The widespread use of English at tertiary level is determined by its function as the main academic lingua franca.

* Corresponding author. University of the Basque Country UPV/EHU, Faculty of Arts, Paseo de la Universidad, 5, 01006 Vitoria-Gasteiz (Álava/Araba), Spain.
E-mail address: david.lasagabaster@ehu.eus (D. Lasagabaster).

https://doi.org/10.1016/j.esp.2025.05.003

However, the implementation of EMI programmes and courses in universities has outpaced empirical research (Lasagabaster, 2022). In fact, many assumptions about the purported benefits of EMI are taken for granted and, more importantly, "go unchecked" (Hu & Duan, 2019, p. 317), one of them being that EMI has very little influence on the transmission of content learning. In fact, teachers tend to be very positive about EMI and name several reasons for their optimistic view, such as the use of specialised lexicon in English, a broader range of classroom materials in English, the use of authentic English in communicative situations, and last but not least, the positive influence on their universities' internationalisation process (Corrales, Rey, & Escamilla, 2016; Henriksen, Holmen, & Kling, 2019). On the other side of the coin, English proficiency often emerges as a stumbling block that may have a negative impact on EMI practitioners' teaching strategies. This belief is confirmed by different studies that have found that lectures are not dialogic and tend to rely on long monologues with little interaction (e.g., Lo & Macaro, 2011; Pérez-Llantada, 2006), and whenever dialogic teaching takes place, it is habitually limited to short exchanges of a few words or very short sentences (Hu & Duan, 2019). Therefore, teaching methodology has come under the spotlight, since there is a need to move from the mainly monologic and little interactive EMI classroom to a more student-centered approach (Rose, 2021). In this vein, the sociocultural approach to education has pushed researchers to delve into classroom talk, as learning is a social process whose basis lies in interacting with all the other people present in the EMI classroom. Moreover, studies have shown that when the content of EMI and L1 lectures has been matched, differences in the same teachers' rhetorical style have been found (Thøgersen & Airey, 2011; Zuaro, 2023), results which urge researchers to examine EMI teachers' metadiscourse in order to shed light on how the use of English as means on instruction affects the delivery of content.

Another important issue has to do with the fact that EMI teachers also present themselves as practitioners who just happen to teach some of their academic subjects in English (Block, 2021). Importantly, they align themselves with their respective academic disciplines and their group membership is closely linked to disciplinary identity. As Hyland (2012, p. 25) puts it, "It is in disciplines, rather than particular physical sites, that the important interactions in a professional's life occur, bringing academics, texts and practices together into a common rhetorical locale." Since EMI content teachers usually position themselves as discipline-bound practitioners, to the extent that they express a steadfast loyalty to the notion of academic discipline (Block, 2021), we intend to analyse whether their disciplinary culture affects their metadiscourse, as posited by authors such as Bondi and Nocella (2024). In the EMI context metadiscourse can be defined as "the linguistic resources that EMI teachers use to organize their discourse and express their viewpoint or attitude towards the content or material while endeavouring to engage students" (Doiz & Lasagabaster, 2022, p. 2). This is a key issue because the literature points out that EMI students tend to find lectures very demanding due to the combined effect of complex content learning and its transmission in a second/foreign language. In fact, in a study carried out in four different European contexts (Austria, Finland, Spain and the UK), Dafouz, Hüttner, and Smit (2016) found out that the language related difficulties undergone by students stem from both general proficiency and subject specific language, which is why the teaching practices and teaching strategies implemented by EMI teachers become extremely important.

This is the reason why we decided to focus on interactional metadiscourse markers, since they encompass the expression of personal relations and attitudes, that is, how EMI teachers communicate affect to engage with students (Hyland, 2018). This will allow us to focus on the way EMI teachers use language not only to negotiate relationships but also to scaffold interaction, how they comment on and evaluate the content of the subject matter taught in their classrooms, and how they express their views, attitudes and judgements.

The objective of this study is therefore to investigate whether the disciplinary background of EMI teachers affects classroom discourse, and in particular, whether it influences teachers' use of interactional discourse markers.

2. Literature review

2.1. Metadiscourse in academic contexts

Metadiscourse refers to the linguistic elements used by speakers or writers to organise their discourse, engage with the audience, and convey their attitudes toward both the content and the interlocutors (Hyland, 2018; Hyland & Tse, 2004).

Two main models are typically found in the study of metadiscourse, i.e., interactive and reflexive (Ädel & Mauranen, 2010). The *interactive* model—or *integrative* approach—adopts a broad view of metadiscourse as a tool for interaction between the writer/speaker and reader/listener. It is associated with a *thin* approach to data, which is quantitative and relies on predefined lists of metadiscourse markers, allowing large-scale data statistical analysis, also across genres. The *reflexive* model—or *non-integrative* approach—uses a narrower definition, focusing on the reflexive or metalinguistic function of language. It aligns with the *thick* approach, which is qualitative and examines metadiscourse in context, carefully considering its discourse function. Historically, the study of metadiscourse began with the *thin* approach (see Prommas, 2020, for a detailed historical overview of the various metadiscourse taxonomies), and the most recent and prominent representative of this tradition is Hyland (2005, 2018). The *thick* approach, instead, represents a later development, and its most important representatives are Mauranen (1993, 2010) and Ädel (2006, 2010).

Not all metadiscourse studies adopt a pure line in applying one of the two approaches; some studies combine the two (Ädel & Mauranen, 2010: p. 4). Indeed, both traditions have important strengths. While the reflexive model (as exemplified by Ädel's taxonomy, 2010) provides deep insights into how metadiscourse operates in context and is generally employed in smaller-scale qualitative studies, the interactive model (as exemplified by Hyland's taxonomy 2005) is very efficient in

identifying markers and is commonly used in quantitative studies statistically analysing larger corpora for metadiscourse distribution. Moreover, Hyland's taxonomy is a more encompassing model, focusing on how text producers engage with *both* their texts and audiences (Herriman, 2022). It is important to note that, although Hyland's model is mainly focused on written academic discourse, it has also been successfully applied to spoken academic discourse (Doiz & Lasagabaster, 2022; Dafouz & Núñez Perucha, 2010; Lee & Subtirelu, 2015; Wu & Yang, 2022).

In the present contribution, the *thin* approach was followed. Specifically, Hyland's (2005, 2018) interpersonal model of metadiscourse was adopted because its comprehensive framework would facilitate inferential statistical analyses, enabling the generalisation of findings and providing a robust foundation for future comparative research with studies adopting the same model.

At university, the academics' use of metadiscourse is "as important as the information they present" (Hyland & Tse, 2004, p. 174), as it encompasses the means that they use to enhance communication, support their stance and build rapport with their interlocutors. Transcending its initial limitation to linguistic resources for organising discourse, metadiscourse now encompasses two main purposes, as noted by Lee and Subtirelu (2015); it helps structure the discourse and promotes interaction between the writer or speaker and the audience (Thompson, 2001). Hyland's (2005, 2018) framework divides metadiscourse into two main categories: interactive and interactional markers. Interactive markers help organise the discourse and include markers such as Transition markers (e.g., *but*, *thus*, *and*), Frame markers (e.g., *first*, *second*, *third*, *to conclude*), and Code glosses (e.g., *namely*, *in other words*). In contrast, interactional markers reflect the speaker's stance and how (s)he engages the audience through Attitude markers (e.g., *important*, *surprisingly*), Boosters (e.g., *actually*, *certainly*), Engagement markers (e.g., *remember*, *let's*), Self-mentions (e.g., *I*, *me*, *my*), and Hedges (e.g., *almost*, *maybe*).

Academic disciplines can differ in their use of metadiscourse since language practices are closely associated with the discourse norms and literacy of each field. Studies (Hyland & Tse, 2004; Hyland & Jiang, 2018; Hyland, Wang, & Jiang, 2022) indicate that academics in the more discursive and interpretive fields of the arts and social sciences often employ more metadiscourse markers than those in the hard sciences. This is likely due to the necessity for these scholars to exert greater effort in crafting a persuasive voice and constructing robust arguments. These variations in metadiscourse use reflect differing approaches to argumentation and core disciplinary values regarding knowledge and its representation (Hyland et al., 2022). In addition to the contrasting approaches to argumentation, disciplinary differences in metadiscourse also suggest evolving patterns in academic writing over time. Hyland and Jiang (2018) investigated changes in the use of metadiscourse markers in academic articles over 50 years, spanning four disciplines. They found a notable increase in the use of interactive features across all fields, while interactional types showed a significant decline, especially in soft knowledge disciplines. In contrast, a rise in interactional features was observed in the sciences.

While extensive research has been carried out on written metadiscourse (Hyland, 2018), Mauranen (2010) highlights the significance of spoken metadiscourse, emphasising that real-time interactions differ from written discourse, where authors have the opportunity to carefully consider both content and phrasing. While research on metadiscourse has primarily centred on the analysis of research articles, news articles, business genres and editorials (e.g., Cao & Hu, 2014; Hyland & Jiang, 2024; McGrath & Kuteeva, 2012; Mu, Zhang, Ehrich, & Hong, 2015; Wei & Duan, 2020; Zarei & Mansoori, 2011), classroom interactions remain underexplored, and the systematic examination of teachers' use of metadiscourse is still lacking (Tang, 2017; Wu & Yang, 2022). As Hyland and Jiang (2024, p. 419) acknowledge, metadiscourse has helped to understand "how interaction works in written and (occasionally) spoken discourse", and we would like to emphasise their use of the adverb between brackets.

Therefore, there are three main features of the present study that need to be underscored. First, we intend to focus on classroom oral interaction rather than the written mode. Second, interactive metadiscourse markers have drawn more attention among researchers than interactional metadiscourse markers, a gap we seek to bridge by exploring the latter. Although interactional markers have recently gained increasing interest among researchers, most studies have investigated how academic writers address their imagined readers while composing their texts (Hyland & Jiang, 2024; Qiu, Wang, Dartey, & Kim, 2024). And third, we intend to examine whether the use of interactional markers is influenced by the disciplinary culture of EMI teachers.

2.2. Interaction in EMI classes

University lectures usually present challenging content, a complexity that is heightened when teaching is offered in a language other than the students' and/or teachers' L1. This is especially evident in English as a Lingua Franca (ELF) environments such as EMI, where English serves as the medium of instruction, posing significant obstacles for both teachers and students, especially when students have limited chances to seek clarification or verify their understanding. ELF environments are inherently demanding for all participants, and without opportunities for meaning negotiation, the likelihood of communication breakdowns increases (Björkman, 2011). The use of metadiscourse resources is vital in university lectures, where complex contents are dealt with in real time (Ädel, 2010; Mauranen, 2010). In these contexts, students must confront demanding subject content as well as language obstacles, necessitating additional language support. Therefore, the ways in which EMI teachers use spoken metadiscourse is an area that deserves deeper exploration (Doiz & Lasagabaster, 2022), because in order to communicate clearly and effectively, EMI teachers need to exert greater efforts to negotiate topics, indicate local organisation and use metadiscourse judiciously (Bondi & Nocella, 2024; Wu, Mauranen, & Lei, 2020).

Björkman (2011, 2013) explored the communicative challenges in ELF classrooms, where English is adopted as the academic lingua franca. She analysed the pragmatic strategies employed by lecturers to overcome language barriers, support students' understanding, and enhance effective communication. These strategies closely mirror the interactional metadiscourse markers as described by Hyland (2005, 2018); lecturers frequently use markers such as *you see* and *let's* to encourage student understanding and engagement, thus contributing to communicative success. Björkman's findings showed that, in spite of variations from standard morphosyntax, the systematic use of pragmatic strategies enhances communication, prevents breakdowns, and improves the clarity and comprehensibility of academic discourse (Mauranen, 2006, 2007; Mauranen & Ranta, 2009).

Bier (2020) replicated Björkman's study in an academic context in Italy, comparing the results with those from Sweden. It was found that comparable strategies were used in both contexts, such as frequent use of questions, rhetorical questions, and audience involvement through the use of *you* and references to common ground using *we*. These strategies emphasise the significance of acknowledging the audience as active participants in the co-construction of meaning. These results corroborated Björkman's (2011) conclusions, indicating that the pragmatic strategies observed in the Swedish context were not in any way *sui generis* (Björkman, 2011, p. 961), but rather point to wider patterns in academic communication, where speakers aim at effectively conveying their message.

Using Hyland's (2005) taxonomy of interactive metadiscourse to analyse spoken language, Doiz and Lasagabaster (2022) compared the use of interactive metadiscourse markers by EMI lecturers in Spain and China (Zhang & Lo, 2021). Their findings showed a similar trend in both contexts, with Transition markers being the most frequently used, while Frame markers, Reminders, and Code glosses appeared significantly less often. Interestingly, beyond Transition markers, there were notable differences in the linguistic forms of certain metadiscourse markers between the two cultures, suggesting that cultural background influences the use of spoken metadiscourse. The researchers emphasise that this type of discourse analysis offers valuable insights into academic spoken discourse, and can assist teachers in supporting students to develop discipline-specific speaking practices (Hyland, 2010, 2018). This is especially relevant in EMI settings, where students' comprehension might be challenged by the use of a foreign language as the medium of instruction, as well as by teachers' potential difficulties in using the language effectively due to limited language proficiency.

In a subsequent study, Lasagabaster and Doiz (2023) adopted Sánchez-García's (2020) question taxonomy to analyse lecturers' questioning practices in history, engineering, and economics lectures across various universities in Spain. It is interesting to note that questions, like engagement markers, explicitly address students to focus their attention or to include them as discourse participants. The study uncovered that questions were relatively infrequent in lectures across all disciplines, and no significant differences were identified between the subjects. Confirmation check questions were the most prevalent, followed by display, referential, and self-answered questions. The scarcity of teacher-led questions, combined with limited student participation, reduced opportunities for both language and content learning in EMI settings, emphasising the importance for EMI lecturers to reflect on their pedagogical practices to cultivate more interactive and effective classroom environments.

Building on previous research into spoken *interactive* metadiscourse markers (Doiz & Lasagabaster, 2022) and the types of questions asked during lectures (Lasagabaster & Doiz, 2023), the present study seeks to analyse lecturers' use of spoken *interactional* metadiscourse markers in the same lecture set, further contributing to the exploration of EMI classroom interaction. This investigation also draws on Hyland's (2005, 2018) metadiscourse framework, as it effectively focuses the scope of an otherwise broad and diverse field of research. The study thus addresses the following three research questions:

RQ1. Are there any general tendencies in the types of spoken interactional metadiscourse markers used by EMI teachers?

RQ2. Are there statistically significant differences between disciplines (i.e. history, engineering, and economics) as regards the number and the types of interactional metadiscourse markers used?

RQ3. Is the use of interactional metadiscourse markers influenced by teachers' idiosyncratic style?

3. Methods

This study forms part of a broader research project designed to examine teacher–student interactions within the context of an EMI university setting. The research was carried out across four public universities in Spain—referred to as UNI1, UNI2, UNI3, and UNI4—with a focus on understanding the dynamics of these interactions. In line with their internationalisation strategies, these institutions have incorporated the use of non-official languages, particularly English, in many undergraduate and graduate programs.

In this study, the focus is on EMI teachers' lectures, as understood in a traditional way as a rather extensive teacher monologue.

3.1. The participants in the study

To recruit participants, the researchers involved in the project contacted EMI lecturers from three different academic fields: humanities (i.e., history), social sciences (i.e., economics), and applied sciences (i.e., engineering) at the four universities. While acknowledging that employing broad disciplinary categories is a common research practice and that important

internal variability may exist within each discipline (e.g., approaches, teaching styles), this study focuses on comparisons *between* these broad categories rather than exploring internal variation.

After an initial screening process, 12 lecturers were selected, resulting in a dataset of 36 lectures, that is, 12 lectures per academic discipline. Lecturers were mainly male because they were the majority of teaching staff in the degrees under scrutiny. The criteria for selection were as follows: the chosen lecturers' classes had to be of similar duration to ensure comparability; they needed to be teacher-fronted and not focused on student presentations of their work or on watching extended videos (e.g., full movies or documentaries). Lecturers whose classes did not meet these criteria were excluded from the study. Table 1 provides detailed information on participant' affiliations, subjects taught, the number of lectures recorded per lecturer, student attendance figures, and the total word count spoken by lecturers during class sessions, excluding contributions from students. As for the low number of students in some classes, it is due to the fact that EMI is relatively new in these universities and it is still not very popular among students, who tend to be afraid of their linguistic limitations in EMI. These figures reflect the standard situation found in these institutions.

Table 1
The participants.

University	Lecturer	Subject	No. of lectures	No. of students in class	TOT No. of lecturer's words
UNI1	T1_H	America in the modern age	3	10	27,105
UNI1	T2_H	Early modern history I	3	8	21,027
UNI1	T3_H	World economic history	3	15	27,155
UNI1	T4_H	Contemporary history of the Basque Country	3	10	16,617
UNI2	T1_En	Electric engineering	4	40	18,532
UNI2	T2_En	Computer engineering	4	12	21,862
UNI4	T3_En	Industrial engineering	4	30–40	45,250
UNI3	T1_Ec	Econometrics	3	4	13,968
UNI3	T2_Ec	Economic analysis and financial system	2	4	12,567
UNI3	T3_Ec	Economic analysis and financial system	1	2	7,210
UNI1	T4_Ec	Economic history	3	25	15,309
UNI1	T5_Ec	Business economics: Organisation and management	3	35–40	25,152

To ensure confidentiality, lecturers were assigned a unique code each consisting of the letter "T" for teacher, a numeric identifier indicating their order within the same discipline, followed by a hyphen and an abbreviation for their field (e.g., "H" for history, "En" for engineering, and "Ec" for economics). For instance, "T3_En" represents the third engineering lecturer at UNI4 (see Table 1). With the exception of T1_Ec from UNI3, who is female, all participating lecturers are male. As for lecturers' L1, except for T4_Ec whose L1 is Basque, all others have Spanish as their L1. Moreover, since all of them were required by their university policy to have a certified C1 level to teach in English, their language background is rather homogeneous. T3_H and T2_En had a certified C2 level. Each lecture lasted 74 min on average, generating a corpus with 251,754 words spoken by lecturers and 11,814 words spoken by students.

3.2. Data collection and coding process

After obtaining, first, the ethical committee's approval to carry out the study, and, then, informed consent from both lecturers and students for the recording of classes, a total of 12 lectures per academic discipline were observed and video-recorded. The recordings were subsequently transcribed verbatim by a research assistant. Inaccuracies, ungrammaticalities and repeated words were kept as they were, without modification. The transcriptions were then examined for accuracy, with an emphasis on identifying any gaps in the interactions between lecturers and students that the research assistant may not have fully captured.

As previously explained, the list presented in Hyland (2018, pp. 268–272) was adopted as the main reference point to carry out the coding process. The coding procedure employed consisted of several steps. First, interactional metadiscourse markers were identified in the transcripts using NVivo 14 and classified into one of the five metadiscourse categories. Then, each occurrence was manually retrieved and checked to ensure it fulfilled a specific interactional function within its contextual usage. Since some items can function as markers in more than one category (e.g., Attitude and Engagement markers), each occurrence was examined in context to determine its appropriate classification and avoid overlap. The data was quantified by counting the number of tokens in each category, resulting in a total of 29,469 interactional metadiscourse markers across the 36 lectures. To ensure the reliability of the coding process, 10 % of the interactional metadiscourse markers corpus was re-coded by a research assistant. The results of the inter-rater agreement analysis were highly positive (Kappa = 0.96), indicating almost perfect agreement between the raters. The patterns and trends observed are presented in the Results section below.

3.3. Data analysis procedures

To address our research questions, we calculated the frequencies of the various interactional metadiscourse items in our corpus. Both raw frequencies and normalised frequencies per 1,000 words were calculated. This normalisation technique,

widely recognised in academic research (Doiz & Lasagabaster, 2022; Lasagabaster & Doiz, 2023; Zhang & Lo, 2021), allows for comparisons while taking into account differences in word count between disciplines (as addressed in RQ2) and among individual lecturers (as explored in RQ3). To answer RQ3, both the normalised frequencies per 1,000 words and the frequencies per minute were calculated. While the former are valuable for comparing lectures of different lengths, they may not fully reflect the dynamics characteristic of real-time speech. Including frequencies per minute offers an additional perspective, providing insights into the density of markers in real-time interaction. By considering both metrics, a more comprehensive interpretation of the recorded frequencies is provided.

To respond to RQ2, instead, non-parametric Kruskal–Wallis tests were carried out; these tests were instrumental in examining the influence of discipline on the quantity and type of interactional metadiscourse markers used by lecturers. To detect the specific differences between the three disciplines in the various categories of markers, follow-up Mann–Whitney U tests were performed between pairs of disciplines. To control for Type 1 errors, a Bonferroni correction was applied to the alpha values, and a stricter level was adopted as the criterion for determining significance (i.e., $p = 0.025$). Effect sizes were calculated using the r value, which should be interpreted as follows: 0.1 small effect size, 0.3 medium effect size, 0.5 (or higher) large effect size (Cohen, 1988).

4. Results

4.1. RQ1: Are there any general tendencies in the types of spoken interactional metadiscourse markers used by EMI teachers?

Table 2 outlines the complete range of interactional metadiscourse markers used by participating lecturers, listed from the most frequent to the least. The right column indicates the total count of markers within each category, while the left column displays the proportion of markers, normalised per 1,000 lecturer words.

Table 2
Overall distribution of interactional metadiscourse markers.

	Total 251,754 lecturer words ‰	Total Markers
Engagement markers	**90.01**	**22,661**
Self mention	10.58	2,663
Hedges	7.11	1,791
Boosters	5.77	1,453
Attitude markers	3.58	901
TOTAL	117.05	29,469

The overall distribution of interactional metadiscourse markers reveals three distinct groups based on their respective frequencies: (1) well above 10 ‰, (2) approximately 10 ‰, and (3) below 10 ‰. A key observation from Table 2 is the dominance of Engagement markers (in bold), which occur at a rate of 90.01 instances per 1,000 words, indicating that lecturers primarily aimed to engage students. The second most frequent category consists of Self-mentions, appearing 10.58 times per 1,000 words. All other types of interactional metadiscourse markers fall into the third group. Among these, Hedges occur 7.11 times per 1,000 words, Boosters 5.77 times, and Attitude markers 3.58 times per 1,000 words.

In summary, the findings suggest a clear pattern in the use of spoken interactional metadiscourse markers by EMI lecturers, with Engagement markers standing out as the most dominant category by an ample margin.

4.2. RQ2: Are there statistically significant differences between disciplines (i.e. history, engineering, and economics) as regards the number and the types of interactional metadiscourse markers used?

Consistent with the findings of Doiz and Lasagabaster (2022) regarding *interactive* metadiscourse markers, EMI lecturers exhibited a similar overall pattern in their use of *interactional* metadiscourse markers, regardless of discipline. Engagement markers were the most frequent interactional metadiscourse markers in all three disciplines (Table 3). Then, the second most frequent were Self-mentions in the case of engineering and economics, and Boosters in history.[1] The least frequent were Attitude markers in all three disciplines, in line with what was found in the overall distribution (Table 2).

[1] In Tables 3 and 5–7, figures highlighted in bold correspond to the most frequent markers within the discipline; those in italics, instead, correspond to the second most frequent.

Table 3
Comparison of interactional metadiscourse markers by discipline.

	History		Engineering		Economics	
	Total 91,904 words ‰	Total Markers	Total 85,644 words ‰	Total Markers	Total 74,206 words ‰	Total Markers
Engagement markers	**58.37**	**5,364**	**106.16**	**9,092**	**110.57**	**8,205**
Self mention	6.44	592	*12.15*	*1,041*	*13.88*	*1,030*
Boosters	*7.82*	*719*	4.43	379	4.78	355
Hedges	7.67	705	4.60	394	9.33	692
Attitude markers	5.51	506	1.69	145	3.37	250
TOTAL	85.81	7,886	129.03	11,051	141.93	10,532

A closer analysis of Table 3 reveals a marked disparity in the frequency of interactional metadiscourse markers per 1,000 words across disciplines. With regards to the most frequently used, for example, economics and engineering exhibit significantly higher rates (110.57 ‰ and 106.16 ‰, respectively) of use of Engagement markers compared to history, which shows a much lower rate of 58.37 ‰. These results align with the findings of Lasagabaster and Doiz (2023), where economics also ranked highest in terms of the number of questions posed by teachers. Since questions fall under the category of Engagement markers according to Hyland's taxonomy, this may help explain why economics lecturers exhibit the highest frequency of Engagement markers.

Kruskal–Wallis tests revealed statistically significant differences across the lessons of the three disciplines in all five categories and in the overall numbers of markers: Attitude markers ($H(2, 36) = 13.06$, $p = 0.00$), Boosters ($H(2, 36) = 7.30$, $p = 0.03$), Engagement markers ($H(2, 36) = 11.54$, $p = 0.00$), Hedges ($H(2, 36) = 10.97$, $p = 0.00$), Self mention ($H(2, 36) = 8.71$, $p = 0.01$), and overall ($H(2, 36) = 9.73$, $p = 0.01$).

As for Attitude markers, a significant difference was found between history lecturers on the one side and engineering lecturers on the other, with the former using significantly more markers than the latter ($Z = -3.41$, $p < 0.001$, $r = 0.7$, large effect). A similar situation was found for Boosters, with history lectures employing these markers more frequently than both engineering lecturers ($Z = -2.25$, $p = 0.024$, $r = 0.46$, medium-to-large effect) and economics lecturers ($Z = -2.31$, $p = 0.021$, $r = 0.47$, medium-to-large effect). The opposite was detected in the case of Engagement markers, with engineering ($Z = -2.43$, $p = 0.015$, $r = 0.50$, large effect) and economics lecturers ($Z = -3.23$, $p = 0.001$, $r = 0.66$, large effect) using significantly more markers than their colleagues of history. As for Hedges, engineering lecturers were found to use significantly less markers than their history ($Z = -2.19$, $p = 0.028$, $r = 0.45$, medium-to-large effect) and economics counterparts ($Z = -3.23$, $p = 0.001$, $r = 0.66$, large effect). Although the p-value obtained in the test comparing engineering and history lecturers was slightly above the adopted significance threshold ($p = 0.028 > p = 0.025$), we decided to retain the result due to the rather strong effect size observed. Finally, with regards to both Self mentions ($Z = -2.77$, $p = 0.006$, $r = 0.57$, large effect) and overall, that is, the total number of markers without distinguishing between categories ($Z = -3.12$, $p = 0.002$, $r = 0.64$, large effect), economics lecturers were found to use significantly more markers than history lecturers.

In analysing the most frequent Engagement markers used by lecturers across the three disciplines, the markers *we* (inclusive) and *you* emerged as the most commonly employed (see Appendix I for the details). The marker *we* appeared 24.34 times per 1,000 words in engineering, 17.51 times in economics, and 5.52 times in history. In contrast, *you* occurred 20.40 times per 1,000 words in economics, 19.25 times in engineering, and 12.87 times in history. The third most frequent markers were *remember* in history, with 2.09 occurrences per 1,000 words, and *have to* in engineering and economics, with 2.74 and 2.67 occurrences, respectively. These findings underscore the importance of Engagement markers in spoken academic discourse, where lecturers use *we* and *you* to foster a more inclusive and engaged environment, as exemplified in Extracts 1 and 2.[2]

Extract 1 (T3_En, use of inclusive *we*).

T: let's write the equation that **we** must set in order to solve for those coefficients because the problem with the other once **we** know about these four numbers okay?
S: P one xxx
T: B one the vector B one mean?
S: no no P one xxx
T: the matrix wait wait the matrix here there is only one matrix **we** don't need two **we** only need one
S: ah okay so eeh
T: **we** must verify # what? this is what **we** need to know what **we** are looking for # okay? # (name of student) what's up?
S: eeh
T: tell me the the conditions that **we** that **we** need to to fulfill there
S: xxx

[2] In all extracts, hashtags mean a short (#) or a longer pause (##) and "xxx" means that what had been said was not intelligible. "T:" and "S:" introduce teachers' and students' turns respectively.

Extract 2 (T3_H, use of *you*).

T: the first global era # aaaaaand ## before anything else ## let's present # some concepts # what do **you** mean ## or # how would **you** define # this idea of # globalisation? *a ver* what would **you** say? suppose **you** have to define globalisation # what would **you** say then ## in your view # what's globalisation? how would **you** define that? or what do **you** mean by globalisation? (name of student) xxx (name) # what do **you** mean by globalisation? according to **you** # what's globalisation? how would **you** define globalisation # xxx?
S: mm ## a process

These markers help to bridge the gap between teacher and students, encouraging active participation and knowledge co-construction. The frequent use of *we* points to a collaborative attitude to problem solving, whereas *you* addresses students directly, making them feel personally involved in the learning process.

The most frequent Self-mention marker across all three disciplines was *I* (Appendix I), occurring 11.24 times per 1,000 words in economics, 9.52 times in engineering, and 5.55 times in history. These findings echo those by Fortanet (2004), who also found that *I* was the most recurrent Self-mention marker in the oral corpus she analysed. The second and third most commonly used markers were *me*—appearing 1.83 times per 1,000 words in engineering, 1.12 times in economics, and 0.46 times in history—and *my*, with 1.36 occurrences per 1,000 words in economics, 0.70 in engineering, and 0.35 in history. The least frequently used were instead the exclusive *us* (no instances in history and economics, 0.01 times per 1,000 words in engineering) and *our* (no instances in history and economics, 0.05 times per 1,000 words in engineering). The differences in Self-mention markers use across disciplines may suggest different levels of personal involvement in academic spoken discourse. Economics, with the highest use of *I*, may involve more explicit self-positioning by lecturers, possibly to assert ownership of ideas or personal insights during discussions, or to give clear procedural instructions and managing expectations, as exemplified in Extract 3.

Extract 3 (T4_Ec, use of *I*).

T: so **I** will assess your works # you will assess your own work okay? and then at random **I** will assign you for those ones that participate in this task # if you don't participate in this task so you you will do nothing but if you have provided your own essay your own paper for task one then you will be assign so **I** will allocate you the paper of another person who has obviously participated in this task okay? you know this assignment is going to be anonymous well if eeh as **I** ask eeh your text is anonymous **I** tell you in the rules so your paper has to be anonymous you don't have to put your name in your document

Engineering's intermediate use of self-mentions may indicate a more balanced approach, in which teachers combine more personal input with objective explanations. In contrast, the limited use of these markers in history seems to reflect a more impersonal approach, in which lecturers prioritise impersonal recounting or collective interpretation above individual positioning.

Regarding Boosters (Appendix I), *actually* was the most frequently used marker in history, occurring 2.10 times per 1,000 words. It was also relatively common in engineering, with a frequency of 0.72 times per 1,000 words. The notably high frequency in history can largely be attributed to one lecturer, T1_H, who used it extensively (165 times across three lectures, or 1.76 times per 1,000 words), sometimes as a filler rather than a proper marker. However, as the distinction between its use as a marker and as a filler was subtle and difficult to discern, it was decided to maintain all instances of this marker in the analysis. In contrast, the most frequently employed Booster in economics was *obvious/obviously*, occurring 0.93 times per 1,000 words, while *know* was the most common in engineering, with 0.84 occurrences per 1,000 words. Another frequent Booster was *of course*, appearing 1.14 times per 1,000 words in history, 0.74 times in economics, and 0.67 times in engineering. Additionally, *really* was fairly common in both history (0.91 times per 1,000 words) and economics (0.65 times). **In contrast**, the least frequently used were *prove/proves/proved* (0.02 times per 1,000 words in history and 0.04 in economics, but 0.35 times in engineering) and *think/thinks/thought* (0.01 times per 1,000 words in engineering, but 0.28 times in economics and 0.18 in history). These variations reflect distinct communicative norms in academic speech. In history, the frequent use of *actually*—particularly by one teacher—indicates a conversational, less formal approach to reinforcing ideas and concepts, as shown in Extract 4.

Extract 4 (T1_H, use of *actually*).

T: xxx # well ## the inhabitants of the indies # the inhabitants of america # **actually** were not ## eeeeeeh # put into # into slavery they were **actually** accepted or granted the rights of being subjects # of the castilian crown # as the rest of the inhabitants # of the castilians territories # in europe

This differs from engineering, where the more frequent use of *know* and relative frequent use of *prove/proves/proved* may indicate a more declarative, fact-based communication style, focusing on certainty and demonstrability, which is consistent

with the discipline's emphasis on objective, empirical evidence, as exemplified in Extract 5.

Extract 5 (T1_En, use of *know*).

T: I mean because because we **know** I right? and we will have to know V right? so for sure we will have to get VI okay? but I think there's a nicest way to get the active power absorbed by the installation without passing first
S: xxx
T: okay we **know** that active power remember also to add active or reactive or apparent okay? not just power because right? there are three of them # okay we **know** this so if
S: xxx
T: if we get the active power here
S: xxx
T: that's it # as we **know** the active power absorbed by this complex impedance if we knew the active power absorbed by this complex impedance by applying the xxx theorem we could add them right?

In economics, instead, the prevalence of *obvious*/*obviously* suggests a rhetorical style aimed at framing arguments as self-evident, maybe to persuade the audience of the clarity of the principles dealt with.

Turning to Hedges (Appendix I), *maybe* emerged as the most commonly used marker across all three disciplines, occurring 2.40 times per 1,000 words in economics, 0.87 times in history, and 0.49 times in engineering. Modals such as *would* and *could* were also frequently employed. *Would* appeared 1.73 times per 1,000 words in engineering and 0.87 times in history, while *could* occurred 0.98 times in economics and 0.42 times in engineering. In economics, the second most frequently used marker was *quite*, with 1.47 occurrences per 1,000 words. In history, the second and third most common markers were *suppose*/*supposes*/*supposed* (0.83 times) and *probably* (0.66 times), respectively. Conversely, the least frequently used Hedges were *around* (no occurrences in engineering and economics, but 0.21 times per 1,000 words in history) and *suppose/supposes/supposed* (0.03 times per 1,000 words in economics and 0.08 times in engineering, but 0.83 in history). The examination of our findings reveals that hedging behaves differently depending on the discipline, reflecting varied levels of certainty and caution in academic speech. Because classroom spoken language often requires real-time negotiation of ideas, the relatively higher frequency of Hedges such as *maybe* is somehow expected; teachers may employ these markers to preserve flexibility and invite students' participation, especially in more discursive subjects like history and economics. This is nicely exemplified in Extract 6, where an economics teacher is modelling critical thinking and inquiry by expressing uncertainty and presenting different possible explanations.

Extract 6 (T1_Ec, use of *maybe*).

T: so we have a problem a really important problem we have only two significant variables education and union and # with the only exception of the last interaction term none of the time dummies are significant # what does it means? **maybe** that time is not an important variable? **maybe** that time don't affect the changes in wages? we don't know # **maybe** that we are estimating this model in a wrong way? **maybe**, yeah yeah because remember at the starting of the class I tell you that if the heterogeneity factor is correlated with explanatory variables **maybe** to choose ordinary lists squares is not a good idea so we have some problems here to discuss later

Conversely, the reduced frequency of such Hedges in engineering may be seen to reflect the field's more objective, fact-based discourse, relying less on ambiguous language.

With respect to Attitude markers (Appendix I), *important*/*importantly* was the most frequently used marker across all three disciplines, occurring 2.40 times per 1,000 words in history, 1.62 times in economics, and 0.88 times in engineering. *Even* ranked as the second most commonly employed marker in history, appearing 1.63 times per 1,000 words, and was the third most frequent in economics (0.28 times) and engineering (0.20 times). Finally, *interesting*/*interestingly* was a relatively frequent marker, appearing 0.49 times per 1,000 words in history, 0.47 times in economics, and 0.22 times in engineering. Instead, the least frequently used were *correctly* (no occurrences in history, but 0.09 times per 1,000 words in engineering and 0.04 times in economics) and *curious/curiously* (no instances in engineering, 0.01 times per 1,000 in economics, but 0.17 in history). These findings reveal once again that disciplinary variation is reflected in the use of markers in speech, consistent with each discipline's discourse practices and rhetorical style. For example, in history, where argumentation often involves interpretation, markers such as *important/importantly* may be used more frequently to signal key ideas in real-time. In fields like engineering, instead, where the focus is more on technical accuracy, such markers seem to be used more sparingly.

4.3. *RQ3: Is the use of interactional metadiscourse markers influenced by teachers' idiosyncratic style?*

Table 4 reveals that among history lecturers, T3_H uses the highest number of interactional metadiscourse markers, with a frequency of 11.50 markers per minute. In contrast, for engineering lecturers, T3_En stands out, employing the most markers at a rate of 14.90 per minute. Finally, in the economics group, T5_Ec demonstrates the most frequent use of interactional

markers, reaching a rate of 19.14 markers per minute, nearly double that of T3_H. Figures referring to these three lecturers are highlighted in bold in Table 4.

Table 4
Interactional metadiscourse markers used by lecturers per minute.

Lecturer	Subject	Total No. of interactional markers used	Overall duration of lectures (Total minutes)	Interactional markers per minute
T1_H	America in the modern age	1,859	283	6.57
T2_H	Early modern history I	1,930	274	7.07
T3_H	**World economic history**	**2,761**	**240**	**11.50**
T4_H	Contemporary history of the Basque Country	1,336	264	5.06
T1_En	Electric engineering	2,843	194	14.65
T2_En	Computer engineering	2,217	197	11.25
T3_En	**Industrial engineering**	**5,991**	**402**	**14.90**
T1_Ec	Econometrics	2,186	214	10.21
T2_Ec	Economic analysis and financial system	1,337	136	9.83
T3_Ec	Economic analysis and financial system	849	64	13.27
T4_Ec	Economic history	2,006	170	11.80
T5_Ec	**Business economics: Organisation and management**	**4,154**	**217**	**19.14**

An analysis of the interactional metadiscourse markers used by the four history lecturers (Table 5) reveals that, in line with the overall pattern identified in RQ1, Engagement markers were the most frequently employed marker type by all four teachers. Among them, T3_H utilised the highest number of interactional markers overall, with 2,761 instances, corresponding to 101.68 occurrences per 1,000 words. He also demonstrated the highest frequency of Hedges, with *would* being the most frequently used (70 occurrences, or 2.58 times per 1,000 words).

T2_H recorded the most frequent use of Engagement markers, with *you* and *we* (inclusive) being the most prevalent, occurring 5.18 and 4.76 times per 1,000 words, respectively. As previously noted, T1_H was the lecturer who employed the highest number of Boosters, with *actually* being the most commonly used (165 instances, or 6.09 times per 1,000 words). Lastly, T4_H exhibited the highest frequency of Self-mentions and Attitude markers, with *I* being the most commonly used Self mention (145 occurrences, or 8.73 times per 1,000 words) and *important/importantly* the most frequent Attitude marker (63 occurrences, or 3.79 times per 1,000 words).

Table 5
Comparison of interactional metadiscourse markers used by History lecturers.

	T1_H		T2_H		T3_H		T4_H	
	Total 27,105 words ‰	Total Markers	Total 21,027 words ‰	Total Markers	Total 27,155 words ‰	Total Markers	Total 16,617 words ‰	Total Markers
Engagement markers	**41.58**	**1,127**	**75.81**	**1,594**	**70.48**	**1,914**	**43.87**	**729**
Self mention	5.24	142	*4.85*	*102*	6.63	180	*10.11*	*168*
Boosters	*10.44*	*283*	4.23	89	7.33	199	8.91	148
Hedges	7.49	203	4.19	88	*9.83*	*267*	8.85	147
Attitude markers	3.84	104	2.71	57	7.40	201	8.67	144
TOTAL	68.59	1,859	91.79	1,930	101.68	2,761	80.40	1,336

Focusing on the markers used by the engineering lecturers, T3_En and T1_En were found to show comparable per-minute usage rates (14.90 and 14.65, respectively, see Table 4). These similarities in usage rates align with trends observed in the types of markers each lecturer employed. Looking at Table 6, it is clear that Engagement markers again emerged as the most dominant type. Notably, T1_En employed the highest frequency of interactional markers use overall, with 153.41 markers per 1,000 words. He also demonstrated the highest frequency of Engagement markers, with *we* (inclusive) being the most common, appearing 563 times, or 30.38 times per 1,000 words. Additionally, T1_En used Boosters most frequently, with *know* being the most employed one (33 occurrences, or 1.78 times per 1,000 words).

T2_En showed the most frequent use of Hedges, with *would* being the most prevalent, occurring 58 times, or 2.65 times per 1,000 words. Finally, T3_En registered the highest frequency of Self-mentions and Attitude markers, with *I* being the most frequently used Self mention (467 occurrences, or 10.32 times per 1,000 words), and *important/importantly* being the most frequent Attitude marker (51 occurrences, or 1.13 times per 1,000 words).

Table 6
Comparison of interactional metadiscourse markers used by Engineering lecturers.

	T1_En		T2_En		T3_En	
	Total 18,532 words ‰	Total Markers	Total 21,862 words ‰	Total Markers	Total 45,250 words ‰	Total Markers
Engagement markers	**129.07**	**2,392**	**80.14**	**1,752**	**109.35**	**4,948**
Self mention	*12.25*	*227*	*10.15*	*222*	*13.08*	*592*
Hedges	5.61	104	6.68	146	3.18	144
Boosters	5.40	100	3.16	69	4.64	210
Attitude markers	1.08	20	1.28	28	2.14	97
TOTAL	153.41	2,843	101.41	2,217	132.40	5,991

Consistent with the patterns observed among history and engineering lecturers, Engagement markers also emerged as the most frequently used type of interactional metadiscourse among economics lecturers (Table 7). Notably, T5_Ec recorded the highest overall number of interactional markers, with 4,154 occurrences, corresponding to 165.16 markers per 1,000 words. T5_Ec also exhibited the highest frequency of Engagement markers, with *we* (inclusive) being the most common, appearing 685 times, or 27.23 times per 1,000 words. This aligns with previous findings indicating that T5_Ec asked the highest number of student questions among economics lecturers (Lasagabaster & Doiz, 2023). Interestingly, T5_Ec also stood out due to the complete lack of student participation, as shown by the number of student words, which amounted to zero across all three lectures. It can therefore be hypothesised that the high frequency of interactional metadiscourse markers, particularly Engagement markers, may have been used to compensate for the absence of student participation. In any case, it should also be observed that T5_Ec had the largest student group (35–40), which is why students might be less willing to answer questions in front of a large audience.

Our findings showed that economics lecturers used more Engagement markers compared to history or engineering lecturers (Table 3). Given that three economics lecturers taught classes with fewer than 5 students (T1_Ec, T2_Ec, T3_Ec), and considering that previous research (e.g., Lee, 2009) has demonstrated the influence of class size on engagement strategies use, we wondered whether this influence could be detected in our findings too. A closer look at our results revealed that no such pattern could be found. In fact, the economics lecturer who used the most Engagement markers, T5_Ec (141.90 ‰), had the largest class size, with 35–40 students, while the next highest, T1_Ec (120.7 ‰), had only 4 students. The other two lecturers with small class sizes, T2_Ec (4 students) and T3_Ec (2 students), used far fewer Engagement markers (77.50 ‰ and 76.56 ‰, respectively), and the same did the lecturer with the second largest class, T4_Ec (25 students), who used relatively few markers (92.95 ‰). Based on this, the possibility that there is a direct (or indirect) relationship between number of students in class and Engagement marker use is not supported by our findings.

T4_Ec recorded the highest frequency of Self-mentions, with *I* being the most commonly used (302 occurrences, or 19.73 times per 1,000 words). T1_Ec, on the other hand, showed the most frequent use of Hedges, with *maybe* being the most prevalent (86 occurrences, or 6.16 times per 1,000 words), and Boosters, with *obvious*/*obviously* (22 occurrences, or 1.58 times per 1,000 words) and *really* (21 occurrences, or 1.50 times per 1,000 words) being the most common. Lastly, T3_Ec exhibited the highest frequency of Attitude markers, with *important*/*importantly* being the most frequently used (24 occurrences, or 3.33 times per 1,000 words).

Table 7
Comparison of interactional metadiscourse markers used by Economics lecturers.

	T1_Ec		T2_Ec		T3_Ec		T4_Ec		T5_Ec	
	Total 13,968 words ‰	Total Markers	Total 12,567 words ‰	Total Markers	Total 7,210 words ‰	Total Markers	Total 15,309 words ‰	Total Markers	Total 25,152 words ‰	Total Markers
Engagement markers	**120.7**	**1,687**	**77.50**	**974**	**76.56**	**552**	**92.95**	**1,423**	**141.90**	**3,569**
Self mention	*14.10*	*197*	8.91	112	*21.78*	*157*	*24.23*	*371*	7.67	193
Hedges	11.53	161	*10.58*	*133*	10.68	77	8.30	127	*7.71*	*194*
Boosters	5.80	81	4.85	61	3.47	25	4.38	67	4.81	121
Attitude markers	4.30	60	4.54	57	5.27	38	1.18	18	3.06	77
TOTAL	156.5	2,186	106.3	1,337	117.7	849	131.03	2,006	165.16	4,154

5. Discussion and conclusions

Metadiscourse is “a concept which has inspired a considerable amount of scholarship and continues to contribute enormously to how language works as (meta)communication” (Hyland & Jiang, 2024, p. 431). However, over the last four decades the focus has been placed mainly on written discourse, whereas the oral mode has been largely overlooked. This research gap is particularly striking in EMI literature, since teaching in EMI settings entails adaptations that impact the rhetorical tools chosen by teachers to deliver content (Zuaro, 2023). With this in mind, this article aimed at analysing whether

the disciplinary culture of a group of EMI teachers from different specialisations may give rise to different patterns of classroom oral interactional metadiscourse; that is, how their discipline may impact on how they endeavour to make their discourse engaging in order to involve students and open opportunities for them to participate in class.

The most significant findings of our study indicate that, first, Engagement markers are, by far, the most frequently employed interactional metadiscourse elements, regardless of discipline. Second, the discipline of EMI teachers does seem to impact their use of interactional metadiscourse.

The predominance of Engagement markers in our findings aligns with earlier studies (Björkman, 2011, 2013; Bier, 2020), which observed that the use of *you* and references to common ground through *we* are pragmatic strategies frequently employed by lecturers to engage students in the shared construction of meaning. Therefore, our results provide additional evidence in favour of Björkman's claims (2011) by showing that the strategies used in the Swedish context are not unique but rather mirror broader trends in academic communication.

Moreover, our analysis shows that economics and engineering register significantly higher rates of Engagement markers compared to history. These findings support the results of Lasagabaster and Doiz (2023), who also ranked economics highest in terms of number of teacher questions. Nevertheless, Lasagabaster and Doiz (2023) observed that questions were rather infrequent across disciplines and that no significant differences were found. This raises the issue of how those findings could be interpreted in light of the new results presented in this contribution. Specifically, this paper's results indicate that Engagement markers, *other than questions*, are the most frequently used. This suggests that EMI teachers may prefer indirect interaction methods, primarily engaging students via interactional markers instead of questions. This preference presents the question of whether it arises from the challenges of using a language of instruction that is neither the teachers' nor the students' L1 or is more closely related to disciplinary culture. It is hypothesised, however, that this tendency stems from a mixture of both factors, although further research is needed in this regard.

Furthermore, the fact that significant differences emerged in the use of engagement markers across disciplines, with engineering and economics lecturers employing significantly more such markers than their colleagues in history, differs somewhat from the claims put forth by Hyland et al. (2022). In their overview, these scholars maintain that academics in the more discursive fields of the arts and social sciences tend to use more metadiscourse markers in their written production than those in the hard sciences. Nevertheless, our findings are consistent with Hyland and Zou's (2021) study, where the use of metadiscourse markers in 3-Minute Thesis (3 MT) oral presentations aimed at engaging non-specialist audiences is examined. The authors revealed that hard science presentations employed significantly more engagement markers than those in the social sciences. Similarly, Qiu and Jiang (2021) reported comparable results in the same genre. These findings are surprising, given that prior research on written genres has consistently shown social scientists to use more metadiscourse markers (Hyland et al., 2022). Although the studies by Hyland and Zou (2021) and Qiu and Jiang (2021) analyse a specific form of spoken academic presentation, distinct from traditional university lectures, their results suggest that rhetorical patterns vary between spoken and written academic communication. Moreover, they echo our findings, which also seem to point to a divergence from earlier research on the use of metadiscourse, suggesting that while established assumptions about discipline-based distinctions could apply in *written* contexts, *spoken* practices may exhibit different patterns. To our knowledge, studies investigating interactional metadiscourse markers across disciplines in EMI university lectures are scarce, making direct comparisons with our results impossible and highlighting the need for further research. This gap in the literature is reflected in our study and, inevitably, limits its scope.

Specifically, this research suffers from limitations. The first is, as mentioned above, the inability to directly compare our findings with those of similar research, as, to the best of our knowledge, no previous study has systematically investigated interactional metadiscourse markers across disciplines in EMI university lectures. The lack of comparable results constrains our ability to interpret our findings in light of the broader context of spoken academic discourse, particularly in terms of disciplinary variation. Second, the size of the corpus is relatively small, and the number of participants (12 EMI teachers) is not high. Due to the limited number of participants, the sample size within each academic discipline is consequently small, which means that the observed variations between disciplines should be interpreted with caution and cannot be immediately generalised to the wider academic field. Therefore, although our results provide a starting point for understanding the use of metadiscourse in this context, further research is needed to validate and extend our insights. Future studies could rely on a larger corpus and a higher number of teachers, to explore differences between and within disciplines. However, it should also be acknowledged that it is much easier to work on written corpora than on spoken corpora, as the latter require a much more protracted and complex process that includes a large number of recordings and their transcriptions, which is one of the reasons why studies on written metadiscourse are more abundant. Third, we did not include student discourse; which prevented us from capturing the uptake by the listeners. Future studies could thus gather student viewpoints via interviews and uncover whether their teachers' use of interactional metadiscourse actually encouraged their participation and made the classes more engaging and easier to follow. Studies could also try to pinpoint that interactional metadiscourse markers help to foster not only student comprehension but also their willingness to participate in classes (Lee & Subtirelu, 2015). Fourth, future research could also investigate the potential influence of variables such as teacher experience, topics, methods, and tasks, as well as the use of interactional metadiscourse markers from a multimodal perspective, focusing for example on gestures and actions (e.g., gaze and spatial positioning) (Picciuolo, 2023) and how they contribute to students' understanding

and engagement. Last but not least, although a few studies (Doiz & Lasagabaster, 2022; Wu & Yang, 2022) have undertaken cross-national analyses of metadiscourse in spoken academic genres, this type of research would contribute to defining the main characteristics of ELF in EMI classes (Jenkins, 2014; Mauranen, 2010) and to finding out how the national culture may affect EMI practitioners' metadiscourse. Since very little research has been carried out so far in non-Anglo-American contexts, further research should aim at examining whether the differences that may be identified between disciplines are typical of the Anglo-American rhetoric vis-à-vis other, non-Anglophone, rhetorical styles. This is a research topic well worth considering, as both alignments and discrepancies have been found in the use of metadiscourse in different cultural and educational settings (Doiz & Lasagabaster, 2022; Wu & Yang, 2022).

While metadiscourse has the potential to promote student engagement and participation, its effectiveness depends not only on the quantity of markers used but also on their appropriateness and strategic adoption, as evidenced by the case of T5_Ec (high number of metadiscourse markers, no student participation). In line with Carrio Pastor's (2022) recommendations, emphasising the call for explicit training of lecturers on the use of metadiscourse, our findings underscore the need for an intentional approach to metadiscourse in EMI lectures, an approach that should build on the English for Specific Purposes (ESP) field.

Given that ESP is a field deeply rooted in the analysis of discourse and genre within specific academic and professional contexts, it can offer valuable insights for designing tailored EMI teacher training. The disciplinary patterns identified in our analysis are coherent with the ESP core principle of addressing the specific linguistic needs of different fields. By drawing on ESP frameworks and empirical findings like those presented in this article, EMI professional development can move beyond generic language training towards a more tailored approach, which has the potential to be more effective in supporting EMI teachers. Specifically, professional development could be instrumental in helping teachers become more aware of how to use metadiscourse strategically to foster meaningful student interaction. To incorporate our findings into recommendations for professional development, structured awareness-raising sessions should be offered to teachers, where they could be invited (1) to watch videos of their own teaching and focus on specific extracts to analyse their use of interactional metadiscourse markers, (2) to deliver mock mini-EMI lessons aimed at incorporating these devices effectively. Peers as well as trainers could provide constructive feedback focusing on clarity of use and effectiveness to foster student engagement. Reflective practice of this kind would help teachers become more language aware and improve their intentional use of metadiscourse, thus boosting classroom dynamics. Teachers would be guided towards balancing the needs for stimulating collaboration and scaffolding participation—as we saw in Extracts 1 and 2, with the use of *we* and *you*, for example—and for establishing authority in class—as exemplified in Extract 3 with the use of *I*. Moreover, teachers would acquire greater awareness about the importance to model disciplinary thinking, showing students ways to navigate certainty and uncertainty, helping them develop a nuanced approach to problem-solving—as we saw with the use of *actually* (Extract 4), *know* (Extract 5) and *maybe* (Extract 6). Ultimately, reflective practice of this kind could give teachers tools to create supportive learning environments that welcome participation, while also adapting their use of metadiscourse based on the aims of the lesson.

Our results reveal differences between disciplines, suggesting that EMI professional development courses need to take into account how classroom discourse is mediated by the disciplinary culture, leading us to conclude that one-size-fits-all courses are not the best option. However, the variation observed in interactional metadiscourse use among individual lecturers emphasises the importance of also recognising and addressing idiosyncratic teaching styles in such training; future studies should aim at teasing out the interaction between disciplines and idiosyncratic styles. Since interactional skills play such a vital role, EMI teachers should be able to anticipate how to better scaffold their explanations and how to encourage their students' participation in class. Therefore, training courses should aim at making EMI teachers more aware of their discursive practices so that they are better equipped to help their students develop the disciplinary knowledge and discursive style that they would need to master in order to be successful users of their discipline-specific language in the lingua franca while becoming fully fledged members of their disciplinary culture.

CRediT authorship contribution statement

David Lasagabaster: Writing – review & editing, Writing – original draft, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Ada Bier:** Writing – review & editing, Writing – original draft, Validation, Software, Methodology, Investigation, Formal analysis, Data curation.

Acknowledgements

This work was supported by the Spanish Ministry of Science and Innovation under grant PID2020-117882 GB-I00, MICIU/AEI/10.13039/501100011033; and by the Basque Government under grant number IT1426-22.

Appendix I. Most frequent interactional metadiscourse markers by discipline.

	History (in 91,904 words ‰)	Engineering (in 85,644 words ‰)	Economics (in 74,206 words ‰)
Engagement markers			
1st most frequent	you (12.87)	we (inclusive) (24.34)	you (20.40)
2nd most frequent	we (inclusive) (5.52)	you (19.25)	we (inclusive) (17.51)
3rd most frequent	Remember (2.09)	Have to (2.74)	Have to (2.67)
		let's/let us (2.72)	Your (2.56)
Self-mentions			
1st most frequent	I (5.55)	I (9.52)	I (11.24)
2nd most frequent	me (0.46)	me (1.83)	my (1.36)
3rd most frequent	my (0.35)	my (0.70)	me (1.12)
Boosters			
1st most frequent	Actually (2.10)	Know (0.84)	Obvious/obviously (0.93)
2nd most frequent	Of course (1.14)	Actually (0.72)	Of course (0.74)
3rd most frequent	Really (0.91)	Of course (0.67)	Really (0.65)
Hedges			
1st most frequent	maybe (0.87)	would (1.73)	maybe (2.40)
	would (0.87)		
2nd most frequent	suppose/supposes/supposed (0.83)	maybe (0.49)	Quite (1.47)
3rd most frequent	Probably (0.66)	Could (0.42)	Could (0.98)
Attitude markers			
1st most frequent	important/importantly (2.40)	important/importantly (0.88)	important/importantly (1.62)
2nd most frequent	Even (1.63)	interesting/interestingly (0.22)	interesting/interestingly (0.47)
3rd most frequent	interesting/interestingly (0.49)	Even (0.20)	Usual (0.32)
			Even (0.28)

References

Ädel, A. (2006). *Metadiscourse in L1 and L2 English*. Amsterdam: John Benjamins.

Ädel, A. (2010). 'Just to give you kind of a map of where we are going'. A taxonomy of metadiscourse in spoken and written academic English. *Nordic Journal of English Studies, 9*(2), 69–97. https://doi.org/10.35360/njes.218

Ädel, A., & Mauranen, A. (2010). Metadiscourse: diverse and divided perspectives. *Nordic Journal of English Studies, 9*(S2), 1–11. https://doi.org/10.35360/njes.215

Bier, A. (2020). On the interplay between strategic competence and language competence in lecturing through English. Findings from Italy. *Educazione Linguistica. Language Education, 9*(3), 345–366. https://doi.org/10.30687/ELLE/2280-6792/2020/03/002

Björkman, B. (2011). Pragmatic strategies in English as an academic lingua franca: ways of achieving communicative effectiveness? *Journal of Pragmatics, 43*(4), 950–964. https://doi.org/10.1016/j.pragma.2010.07.033

Björkman, B. (2013). *English as an Academic Lingua Franca. An Investigation of Form and Communicative Effectiveness*. De Gruyter Mouton. https://doi.org/10.1515/9783110279542

Block, D. (2021). Emergent STEM lecturer identities: the shaping effects of EMI in action in an internationalised and Englishised HE context. *Language Teaching, 54*(3), 388–406. https://doi.org/10.1017/S0261444820000221

Bondi, M., & Nocella, J. J. (2024). The use of code glosses in MA dissertations in English and in Italian: a pilot study in an EMI context. *International Journal of English for Academic Purposes: Research and Practice, 4*(1), 73–92. https://doi.org/10.3828/ijeap.2024.5

Carrio-Pastor, M. L. (2022). Training teachers of English as a medium of instruction: the use of metadiscourse devices. *Porta Linguarum, 37*, 177–192. https://doi.org/10.30827/portalin.vi37.16957

Cao, F., & Hu, G. (2014). Interactive metadiscourse in research articles: a comparative study of paradigmatic and disciplinary influences. *Journal of Pragmatics, 66*, 15–31. https://doi.org/10.1016/j.pragma.2014.02.007

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Lawrence Erlbaum Associates Publishers.

Corrales, K. A., Rey, L. A. P., & Escamilla, N. S. (2016). Is EMI enough? Perceptions from university professors and students. *Latin American Journal of Content & Language Integrated Learning, 9*(2), 318–344. https://doi.org/10.5294/7094

Dafouz, E., Hüttner, J., & Smit, U. (2016). University teachers' beliefs on language and content integration in English-medium education in multilingual settings. In T. Nikula, E. Dafouz, P. Moore, & U. Smit (Eds.), *Multilingual MattersConceptualising Integration in CLIL and Multilingual Education* (pp. 123–143). https://doi.org/10.21832/9781783096145-009

Dafouz, E., & Núñez Perucha, B. (2010). Metadiscursive devices in university lectures. In C. Dalton-Puffer, T. Nikula, & U. Smit (Eds.), *Language Use and Language Learning in CLIL Classrooms* (pp. 213–232). John Benjamins.

Doiz, A., & Lasagabaster, D. (2022). Looking into English-medium instruction teachers' metadiscourse: an ELF perspective. *System, 105*, Article 102730. https://doi.org/10.1016/j.system.2022.102730

Henriksen, B., Holmen, A., & Kling, J. (2019). *English Medium Instruction in Multilingual and Multicultural Universities: Academics Voices from the Northern European Context*. Routledge. https://doi.org/10.4324/9780429456077

Herriman, J. (2022). Metadiscourse in English instruction manuals. *English for Specific Purposes, 65*, 120–132. https://doi.org/10.1016/j.esp.2021.10.003

Hu, G., & Duan, Y. (2019). Questioning and responding in the classroom: a cross-disciplinary study of the effects of instructional mediums in academic subjects at a Chinese university. *International Journal of Bilingual Education and Bilingualism, 22*(3), 303–321. https://doi.org/10.1080/13670050.2018.1493084

Hyland, K. (2005). Metadiscourse: exploring interaction in writing. *Continuum*.

Hyland, K. (2010). Metadiscourse. Mapping interactions in academic writing. *Nordic Journal of English Studies, 9*(2), 125–143. https://doi.org/10.35360/njes.220

Hyland, K. (2012). *Disciplinary Identities*. Cambridge University Press.

Hyland, K. (2018). Metadiscourse. *Exploring Interaction in Writing*. Bloomsbury Academic.

Hyland, K., & Jiang, F. K. (2024). Metadiscourse: the evolution of an approach to texts. *Text & Talk, 44*(3), 411–433. https://doi.org/10.1515/text-2021-0156

Hyland, K., & Jiang, F. K. (2018). "In this paper we suggest": changing patterns of disciplinary metadiscourse. *English for Specific Purposes, 51*, 18–30. https://doi.org/10.1016/j.esp.2018.02.001

Hyland, K., & Tse, P. (2004). Metadiscourse in academic writing: a reappraisal. *Applied Linguistics, 25*(2), 156–177. https://doi.org/10.1093/applin/25.2.156
Hyland, K., Wang, W., & Jiang, F. K. (2022). Metadiscourse across languages and genres: an overview. *Lingua, 265*, Article 103205. https://doi.org/10.1016/j.lingua.2021.103205
Hyland, K., & Zou, H. (2021). Pithy persuasion: engagement in 3 minute Thesis presentations. *Applied Linguistics, 43*(1), 21–44. https://doi.org/10.1093/applin/amab017
Jenkins, J. (2014). *English as a Lingua Franca in the International University: the Politics of Academic English Language Policy*. Routledge.
Lasagabaster, D. (2022). *English-Medium Education in Higher Education*. Cambridge University Press. https://doi.org/10.1017/9781108903493
Lasagabaster, D., & Doiz, A. (2023). Classroom interaction in English-medium instruction: are there differences between disciplines? *Language Culture and Curriculum, 36*(3), 310–326. https://doi.org/10.1080/07908318.2022.2151615
Lee, J. J. (2009). Size matters: an exploratory comparison of small- and large-class university lecture introductions. *English for Specific Purposes, 28*(1), 42–57. https://doi.org/10.1016/j.esp.2008.11.001
Lee, J. J., & Subtirelu, N. C. (2015). Metadiscourse in the classroom: a comparative analysis of EAP lessons and university lectures. *English for Specific Purposes, 37*(4), 52–62. https://doi.org/10.1016/j.esp.2014.06.005
Lo, Y. Y., & Macaro, E. (2011). The medium of instruction and classroom interaction: evidence from Hong Kong secondary schools. *International Journal of Bilingual Education and Bilingualism, 15*(1), 29–52. https://doi.org/10.1080/13670050.2011.588307
Mauranen, A. (1993). Contrastive ESP rhetoric: metatext in Finnish-English economics texts. *English for Specific Purposes, 12*(1), 3–22. https://doi.org/10.1016/0889-4906(93)90024-I
Mauranen, A. (2006). Signaling and preventing misunderstanding in English as a lingua franca communication. *International Journal of the Sociology of Language, 177*, 123–150. https://doi.org/10.1515/IJSL.2006.008
Mauranen, A. (2007). Hybrid voices. English as the lingua franca of academics. In K. Fløttum (Ed.), *Language and Discipline Perspectives on Academic Discourse* (pp. 243–259). Cambridge Scholars.
Mauranen, A. (2010). Discourse reflexivity – a discourse universal? The case of ELF. *Nordic Journal of English Studies, 9*(2), 13–40. https://doi.org/10.35360/njes.216
Mauranen, A., & Ranta, E. (Eds.). (2009). *English as a Lingua Franca. Studies and Findings*. Cambridge Scholars.
McGrath, L., & Kuteeva, M. (2012). Stance and engagement in pure mathematics research articles: linking discourse features to disciplinary practices. *English for Specific Purposes, 31*(3), 161–173. https://doi.org/10.1016/j.esp.2011.11.002
Mu, C., Zhang, L., Ehrich, J., & Hong, H. (2015). The use of metadiscourse for knowledge construction in Chinese and English research articles. *Journal of English for Academic Purposes, 20*, 135–148. https://doi.org/10.1016/j.jeap.2015.09.003
Picciuolo, M. (2023). Reconceptualising space in academic lectures: face-to-face, blended and online lecturer discourse in the context of English-medium instruction. *ESP Today, 11*(2), 371–394. https://doi.org/10.18485/esptoday.2023.11.2.9
Pérez-Llantada, C. (2006). Signaling speakers' intentions: towards a phraseology of textual metadiscourse in academic lecturing. In C. Pérez Llantada, & G. R. Ferguson (Eds.), *English as a GloCalization Phenomenon: Observation from a Linguistic Microcosm* (pp. 59–86). University of Valéncia.
Prommas, P. (2020). *Metadiscourse in Postgraduate Writing*. Te Herenga Waka-Victoria University of Wellington. https://doi.org/10.26686/wgtn.17147801.v1. PhD Thesis.
Qiu, X., & Jiang, F. K. (2021). Stance and engagement in 3MT presentations: how students communicate disciplinary knowledge to a wide audience. *Journal of English for Academic Purposes, 51*, Article 100976. https://doi.org/10.1016/j.jeap.2021.100976
Qiu, X., Wang, Y. A., Dartey, E. A., & Kim, M. (2024). Interactional metadiscourse in expert and student disciplinary writing: exploring intrageneric and functional variation. *English for Specific Purposes, 73*, 124–140. https://doi.org/10.1016/j.esp.2023.10.007
Rose, H. (2021). Students' language-related challenges of studying through English: what EMI teachers can do. In D. Lasagabaster, & A. Doiz (Eds.), *Language Use in English-medium Instruction at University: International Perspectives on Teacher Practice* (pp. 145–166). Routledge. https://doi.org/10.4324/9781003134534.
Sánchez-García, D. (2020). Mapping lecturer questions and their pedagogical goals in Spanish- and English-medium instruction. *Journal of Immersion and Content-Based Language Education, 8*(1), 28–52. https://doi.org/10.1075/jicb.18016.san
Tang, K.-S. (2017). Analyzing teachers' use of metadiscourse: the missing element in classroom discourse analysis. *Science Education, 101*(4), 548–583. https://doi.org/10.1002/sce.21275
Thompson, G. (2001). Interaction in academic writing: learning to argue with the reader. *Applied Linguistics, 22*(1), 58–78. https://doi.org/10.1093/applin/22.1.58
Thøgersen, J., & Airey, J. (2011). Lecturing undergraduate science in Danish and in English: a comparison of speaking rate and rhetorical style. *English for Specific Purposes, 30*(3), 209–221. https://doi.org/10.1016/j.esp.2011.01.002
Wei, J., & Duan, J. (2020). A comparative study of metadiscoursal features in English research article abstracts in hard disciplines. *Arab Journal of Applied Linguistics, 4*(1), 1–37. https://www.arjals.com/ajal/article/view/221.
Wu, X., Mauranen, A., & Lei, L. (2020). Syntactic complexity in English as a lingua franca academic writing. *Journal of English for Academic Purposes, 43*, Article 100798. https://doi.org/10.1016/j.jeap.2019.100798
Wu, X., & Yang, H. (2022). A comparative analysis of English for academic purposes teachers' interactive metadiscourse across the British and Chinese contexts. *Frontiers in Psychology, 13*, Article 879713. https://doi.org/10.3389/fpsyg.2022.879713
Zarei, G. R., & Mansoori, S. (2011). A contrastive study on metadiscourse elements used in humanities vs. non-humanities across Persian and English. *English Language Teaching, 4*(1), 42–50. https://doi.org/10.5539/elt.v4n1p42
Zhang, L., & Lo, Y. Y. (2021). EMI teachers' use of interactive metadiscourse in lecture organization and knowledge construction. In D. Lasagabaster, & A. Doiz (Eds.), *Language Use in English-medium Instruction at University: International Perspectives on Teacher Practice* (pp. 56–79). Routledge.
Zuaro, B. (2023). Content adaptations in English-medium instruction: comparing L1 and English-medium lectures. *English for Specific Purposes, 70*, 267–279. https://doi.org/10.1016/j.esp.2023.01.005

David Lasagabaster is Full Professor of Applied Linguistics at the University of the Basque Country UPV/EHU (Spain) and Extraordinary Professor at Stellenbosch University (South Africa). His research revolves around EMI (English-Medium Instruction), CLIL (Content and Language Integrated Learning), attitudes and motivation, and multilingualism. He has published widely in international journals (Applied Linguistics, English for Specific Purposes, Language Teaching, International Journal of Bilingual Education and Bilingualism, Journal of Multilingual and Multicultural Development, The Modern Language Journal, Studies in Higher Education, Language Teaching Research, Language and Education, System, TESOL Quarterly, Language, Culture and Curriculum, Language Policy, etc.), books and edited books. Among others, he has co-edited "English-medium Instruction at Universities: Global Challenges" (Multilingual Matters, 2013), "Motivation and Foreign Language Learning: From Theory to Practice" (John Benjamins, 2014), and "Language Use in English-medium Instruction at University: International Perspectives in Teacher Practice" (Routledge, 2021). He is the author of "English-medium Instruction in Higher Education" (Cambridge University Press, 2022). Since 2020 he has been included in the Stanford list of the world's top-2% most-cited researchers.

Ada Bier is a Marie Skłodowska-Curie Research Fellow at the University of the Basque Country UPV/EHU. She is a Subject expert ("Cultrice della materia") in Educational Linguistics both at the Department of Languages and Literatures, Communication, Education and Society at the University of Udine, and at the Department of Linguistics and Comparative Cultural Studies at Ca' Foscari University of Venice. She carried out her academic studies at IULM University of Milan (BA in 2008) and at Ca' Foscari Venice (MA in 2013, PhD in 2017). Her main research interests include psychological aspects related to teaching and learning through foreign/second/minority languages in multilingual environments, plurilingualism and multilingual education, pragmatic competence and language awareness in academic teaching in EMI settings. She is also deeply interested in innovative research methods in Applied Linguistics. Her research has been published in journals such as Journal of Multilingual and Multicultural Development, Language and Education, Innovation in Language Learning and Teaching, and International Journal of Linguistics.