



Metadiscourse in postgraduate thesis supervisions at UK and Taiwanese universities

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ABSTRACT

This study investigates metadiscourse in master's thesis supervisions at universities in the UK and Taiwan, an established yet underexplored academic spoken genre that functions as a vital mechanism for effective research management and support, particularly within increasingly diverse cohorts of national and international students. Drawing on Hyland's interpersonal model, a self-compiled corpus of over 34,000 words of authentic supervisory interactions was analyzed to identify and compare the use of metadiscourse related to participants' discourse roles and the academic contexts in which the supervision occurred. Interactive metadiscourse exhibits similar distribution patterns across the UK and Taiwanese corpora, which reflects a shared awareness of disciplinary conventions and tacit genre knowledge, contributing to coherent discourse structuring and enhancing the comprehensibility of information-dense academic interactions in both contexts. In contrast, notable differences are observed in interactional metadiscourse, likely attributable to the hybrid academic values of Taiwan's modern higher education system and international students' adaptation to host institutional norms, that is negotiating knowledge in ways that are meaningful and appropriate within their respective discourse communities. Supervisors' dynamic role shifts, enabled by the strategic deployment of metadiscourse, suggest that effective supervision is not a static exertion of authority but a responsive and negotiated practice attuned to students' evolving needs and the epistemic demands of the unfolding supervisory encounter.

1. Introduction

Metadiscourse, which refers to the linguistic devices that writers or speakers use to organize texts, facilitate audience processing of propositional information, express stance, and manage interpersonal relationships, has become one of the most prominent approaches for discourse analysis (Hyland, 2017b). Given its crucial text-organizing and interpersonal functions, metadiscourse is recognized "as important as the information [it presents]" (Hyland & Tse, 2004, p. 174) and has prompted extensive scholarly investigation into a broad diversity of genres. Two recent comprehensive review articles (Hyland et al., 2022; Pearson & Abdollahzadeh, 2023) along with an empirical study based on bibliometric analysis of metadiscourse-related publications over the last four decades (Hyland & Jiang, 2022) reveal a sustained and substantial growth in research interest in metadiscourse, evidenced by a marked increase in the number of papers published over the two decades. The majority of the research, nevertheless, heavily privileges written texts, particularly

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academic writing and research articles.

Compared to the extensive body of research on metadiscourse in written genres, studies focusing on its use in spoken discourse are scant, especially within academic speaking contexts. This research gap has been explicitly acknowledged by scholars such as Hyland and others (2022), and Liu and Cheng (2025). Mauranen (2010) contends that metadiscourse plays a “much more important role” in spoken discourse than in written, due to the greater “need to manage spoken interaction in real time” (p. 37). For instance, Ädel (2010) demonstrated in her comparative study of academic essays and lectures that the spontaneous nature of spoken communication influences metadiscoursal practices, resulting in distinct differences from written discourse.

Other studies have focused exclusively on spoken genres, examining both dialogic and monologic contexts. Mauranen (2010), for instance, studied seminar discussions among EFL speakers, emphasizing the predominance of other-oriented metadiscourse in dialogic interactions. In parliamentary debates, Ilie (2003) explored how metadiscourse enables speakers to negotiate their own and their interlocutors’ discourse objectives. Conversely, some research has concentrated on monologic genres such as TED talks (Scotto di Carlo, 2014), 3-min thesis presentations (Hyland & Zou, 2021; Qiu & Jiang, 2021), lectures (Doiz & Lasagabaster, 2022; Lee & Subtirelu, 2015), and political speeches (Kashiha, 2022), illustrating that metadiscourse continues to play a crucial role even in less dyadic contexts.

Previous research also shows considerable differences in metadiscourse use between co-present social interaction and monologic speech as spoken interaction is inherently collaborative, dynamic, and often unpredictable. For instance, Zhang’s (2022) empirical findings from a large-scale contrastive study of dialogic and monologic registers reveal that metadiscourse elements are significantly more frequent in highly interactive and informational discourse. Within academic speaking, high interactivity and informationality are key features of certain genres, notably postgraduate thesis supervisions. Despite the importance of this area, research on metadiscourse in interactive academic speaking remains scarce. To address this gap, this study investigates the most prominent types of dialogic metadiscourse used in postgraduate thesis supervisions at universities in the UK and Taiwan. Thesis supervisions warrant particular attention because the use of metadiscourse in these interactions shapes key pedagogical processes, including the scaffolding of student learning, the negotiation of power relations, and the management of intercultural challenges. By situating metadiscourse within these pedagogical stakes, the study underscores its central role in structuring both the academic and relational outcomes of supervision. Grounded in Hyland’s interpersonal model, the study aims to examine how strategic use of metadiscourse shapes the communicative event, co-constructs knowledge, and fosters rapport—while considering the influence of specific genre norms and institutional contexts, given metadiscourse’s high sensitivity to contextual and cultural variations (Doiz & Lasagabaster, 2022).

2. Thesis supervision

Postgraduate thesis supervision is recognized as a well-established academic spoken genre, serving as a vital mechanism for effective research management and support (Rodwell & Neumann, 2008). They offer a structured setting in which master’s and doctoral students can report research progress, critically discuss findings, and collaboratively address emerging challenges with their supervisors. Such interactions are integral to guiding students toward the development of research skills and the successful completion of their theses or dissertations. Owing to the adviser’s higher academic status and having domain-specific expertise, these exchanges are often characterized by an asymmetrical power dynamic between the participants (Zhang & Hyland, 2021). Supervision is now viewed as a form of pedagogy with distinct institutional roles and responsibilities (e.g., Firth & Martens, 2008), prompting an expanding body of scholarship on this specific genre.

Existing literature primarily examines supervisory practices and practical guidelines for meetings (Macfadyen et al., 2019), while other studies explore key factors influencing supervision, including supervisory models (Johnson et al., 2000), supervisory processes (Ives & Rowley, 2005), pedagogical approaches (Lee, 2008), or roles and relationships within supervision (Aitken et al., 2022). Three main types of supervisor-student relationships, namely teaching, partnership, and apprenticeship have been identified (Dysthe, 2002) and are seen as shaped by cultural contexts that influence how these roles are perceived and enacted, particularly with respect to communication practices and power dynamics.

Research interest has also emerged in response to the complexities and challenges in supervision such as the quality and effectiveness of supervisory feedback, which are largely based on the teachers’ and students’ perceptions (Bastola, 2022; Macfadyen et al., 2020). However, limited attention has been given to the use of specific linguistic features, not least metadiscourse in constructing the highly interactive and informative nature of supervision discourse marked by power asymmetry and relational management. Cross-cultural comparisons within this genre are even off the radar, despite supervisory interactions being shaped by the institutional context in which they occur (Zhang & Hyland, 2021). The present study compares supervisions in the UK and Taiwan, the former representing a Western, individualistic academic tradition and the latter embodying a hybrid system that combines Confucian hierarchical orientations with Anglo-American practices (see Section 3 below for more details). These divergent academic cultures are likely to inform supervisory interactions and the deployment of metadiscourse, thereby positioning the study as a contribution to broader research on intercultural supervision, academic socialization, and the globalization of higher education. Rather than relying on reported perceptions, this study aims to provide a thorough, contextualized understanding of authentic supervision discourse and offer insight into the influences of academic contexts on metadiscoursal practices in two distinct geographical locations.

More specifically, the study seeks to answer the following research questions.

- i) What are the distribution patterns of metadiscourse in engineering postgraduate thesis supervision?
- ii) In what ways does the use of metadiscourse differ or resemble one another between the UK and Taiwanese corpora, as well as between supervisors and supervisees from both sides?

- iii) How are the observed similarities and differences related to the participants' discourse roles in supervision and their academic contexts?

3. Research context

Data were collected from the engineering departments of one British and two Taiwanese universities. The UK, as other Anglophone countries, has long been a preferred destination for international students seeking to further their academic pursuits. Factors such as the generally high reputation of British universities, the quality of their programs, the recognition of qualifications, and the adoption of English as an academic lingua franca serve as significant incentives drawing students from around the world (Jenkins, 2014). Taiwan, among many Asian regions, strive to globalize higher education to enhance universities' competitiveness and attract both domestic and international students. Its higher education system has incorporated various key Anglo-American standards and practice regarding academic structure, curriculum, and accreditation (Lin & Yang, 2022). As part of broader internationalization strategies, Taiwanese universities have increasingly promoted the use of English for instruction and academic exchange in alignment with the nation's 2030 bilingual policy. Deeply rooted in Confucianism, the academic culture of Taiwan's modern higher education institutions can be described as a hybrid university model that integrates Western and Confucian intellectual values (Chan & Yang, 2017).

The authors obtained permissions from six supervisors (two from the UK and four from Taiwan) and eight of their students (four from each academic context) to audio-record their naturally occurring interactions during supervisions. The two supervisors in the UK are of British and Greek nationalities, whereas the four supervisors in Taiwan are all Taiwanese. They have taught in the respective engineering departments for several years and are well-experienced in supervising local and international students. Noteworthy is that the Greek supervisor, who studied in the UK in 2002, has lived and worked there for over two decades since completing his doctorate. He therefore has been used to the academic system and culture in the UK.

The student participants were enrolled in taught master's programs that require the submission of a research thesis for graduation. Their nationalities include British, Indian, Filipino, and Sri Lankan, all utilizing English as the academic lingua franca. One advantage of examining master's thesis supervision sessions within a single discipline is the ability to observe the general characteristics associated with a specific academic discourse context, with minimal influence from external variables such as disciplinary or degree-level differences. It was also a strategic decision to focus on international students in the case of Taiwan, as Mandarin Chinese would likely be adopted as the primary medium of communication between Taiwanese supervisors and home students, given its deeply entrenched position within its education system (Lau & Lin, 2017). Participant demographics and corpus details are summarized in Table 1.

The recordings of eight supervisory meetings were transcribed by a voice-to-text transcription software and reviewed by two research assistants to ensure accuracy. To facilitate qualitative and quantitative analysis of metadiscourse, the transcripts adhered broadly to the general conventions of the Michigan Corpus of Academic Spoken English (MICASE). A total duration of 317 min of recordings comprising 34,408 words (18,985 words in the UK corpus and 15,423 words in the Taiwanese corpus) were collected. The excerpts presented in this paper are transcribed verbatim, retaining all original features of the participants' speech, including ungrammaticalities, repetitions and incomplete utterances, without any modification or correction.

3.1. Analytical process

A discourse-analytic approach was adopted for data analysis. The transcripts were carefully read, manually analyzed and coded using Hyland's (2005) interpersonal model of metadiscourse. Hyland's model underscores the interactive nature of communication and provides a broader, more comprehensive conceptualization of metadiscourse than the reflexive approach (Ädel & Mauranen, 2010). Although originally developed with a primary focus on written academic discourse, Hyland's model has also been effectively extended to spoken academic contexts (Dafouz & Núñez Perucha, 2010; Doiz & Lasagabaster, 2022; Lasagabaster & Bier, 2025; Lee & Subtirelu, 2015). Metadiscourse resources were identified based on Hyland's (2005) definitions of interactive and interactional metadiscourse and classified according to his typology, as shown below with frequent linguistic features from the current supervision corpus.

Interactive resources enable speakers to control the flow of information, guiding hearers toward their intended interpretations. These resources include.

- * **Transitions:** devices (mainly conjunctions) used to mark additive, contrastive, and consequential relations, e.g. *so*, *and*, *but*, *although*, *because*

Table 1
Participants' demographics.

Corpora	Nationality of Supervisors	Gender	Nationality of Students	Gender	Duration/mins
UK01	Greek	M	British	M	66
UK02	Greek	M	British	M	68
UK03	British	M	Indian	M	23
UK04	British	M	Sri Lankan	M	26
TW01	Taiwanese	M	Indian	M	40
TW02	Taiwanese	M	Indian	M	30
TW03	Taiwanese	M	Indian	F	29
TW04	Taiwanese	M	Filipino	M	34

- * **Frame markers:** refer to text boundaries or structure, including items used to sequence, label stages, announce discourse goals and indicate topic shifts, e.g. *first of all, next, then, okay, now, to recap*
- * **Endophoric markers:** make additional material salient to help the hearer recover the speaker's intentions by referring to other parts of the text, e.g. *as I said, on page/slide, this, here, there*
- * **Evidentials:** indicate the source of information from outside the text, mainly citations and evidential markers, e.g. *according to*
- * **Code glosses:** rephrase or elaborate propositional meanings, e.g. *I mean, like, for example, such as, say*

Interactional resources center on the participants in the interaction, showcasing the speaker's persona and a tone aligned with the norms of the community. They encompass.

- * **Hedges:** withhold the speaker's full commitment to a statement, e.g. *I think, maybe, can, should, kind of, a little bit*
- * **Boosters:** express certainty and emphasize propositional force, e.g. *very, actually, exactly, always, had/have to, did/do*
- * **Attitude markers:** state the speaker's attitude to propositions, conveying surprise, agreement, importance, etc. e.g. *good, clear, useful, reliable, tricky*
- * **Self-mention:** explicit reference to authors, e.g. *I, me, my, myself*
- * **Engagement markers:** explicitly address hearers to focus their attention or include them in the discourse through audience reference, directives, questions, asides, and shared knowledge, e.g. *you, your, don't, let's, carry on, we, ?*

One of the authors and two research assistants established a consensus on the criteria for identifying dialogic metadiscourse by jointly conducting a manual, context-sensitive coding of one transcript. The remaining transcripts were then independently coded by the two trained research assistants following the agreed-upon criteria and subsequently reviewed by the authors to ensure accuracy and consistency. A random sample comprising 5 % of the data from all eight transcripts was excerpted to assess inter-coder reliability. A high level of consistency was observed, with Krippendorff's alpha reaching 0.921. Disparities were resolved through thorough deliberation and clarification of the specified criteria, which were then applied in addressing analogous cases. For instance, items such as *okay* may operate as a frame marker, attitude marker, or backchannel, while engagement can be manifested through audience reference (e.g., *you, your*), vocative (e.g., *sir, prof*), directives (e.g., *carry on*), shared knowledge (e.g., *you know*) or questions. Hyland's framework was systematically adapted to account for the multifunctionality and heterogeneity of spoken metadiscourse in supervisions. For example, transitions were frequently expressed through colloquial clusters such as *okay so, and then so, or okay then*, whereas deictic references such as *this* and *there* referring to accompanying materials were categorized as endophoric markers. All instances were examined in relation to their immediate context to determine their correct classification.

An excerpt from a coded supervision session is presented below to illustrate the coding and labeling process:

But {transition} if you {engagement} can {hedge} understand the derivation of the Lowpass, you {engagement} could {hedge} apply that understanding to the Highpass, Bandpass and Bandstop. And, {transition} that would {hedge} be a good {attitude marker} thing to do in your {engagement} master's thesis. To work out the derivation for all of these cases would be it would {hedge} be a useful {attitude marker} thing to do. So, {transition} as I said earlier {endophoric marker} on the knowledge that you've {engagement} gained from working through the derivation of the Lowpass, you {engagement} apply that knowledge to the other three cases. [UK03]

To facilitate comparisons between the UK and Taiwanese datasets, the raw frequency of each metadiscourse sub-category was normalized to occurrences per 1000 words. To assess the distinctiveness of features across the two corpora, statistical comparisons were conducted using log-likelihood (LL) and log ratio. LL values were calculated to establish whether differences in normalized frequencies were statistically significant, with a critical value of 3.84 ($p < .05$, $df = 1$) adopted as the threshold (Rayson, 2016). In

Table 2
Metadiscourse in the UK and TW corpora.

Metadiscourse	UK (18,985 words)		TW (15,423 words)		LL	Log ratio
	Raw frequency	Normalized frequency ⁺	Raw frequency	Normalized frequency ⁺		
Interactive markers	1560	82.1	1255	81.3	0.07	0.01
Transition markers	1061	55.8	768	49.8	5.97*	0.17
Frame markers	82	4.3	69	4.4	0.05	-0.05
Endophoric markers	327	17.2	311	20.1	3.95*	-0.23
Evidentials	6	0.3	1	0.06	3.00	2.29
Code glosses	84	4.4	106	6.8	9.17**	-0.64
Interactional markers	3219	169.5	1751	113.5	188.66***	0.58
Hedges	513	27.0	271	17.5	34.10***	0.62
Boosters	447	23.5	214	13.8	42.63***	0.76
Attitude markers	390	20.5	101	6.5	126.85***	1.65
Self-mention	454	23.9	271	17.5	16.48***	0.44
Engagement	1415	74.5	894	57.9	35.20***	0.36
Total	4779	251.7	3006	194.9	122.83***	0.37

⁺ per 1000 words * $p < .05$; ** $p < .01$; *** $p < .0001$.

addition, the log ratio was employed to indicate both the magnitude and direction of the differences, showing how much more or less frequent a feature is in one corpus relative to the other, with a value of 0.5 representing approximately a 1.4-fold difference and a value of 1.0 corresponding to a more than twofold difference (Brezina, 2018). By employing an integrated approach combining qualitative and quantitative methods, this study aims to offer a robust and generalizable analysis of the distribution patterns of metadiscourse.

4. Findings and discussion

A total of 7785 metadiscourse devices were identified in the supervision corpus, with a normalized frequency of 226.2 per 1000 words. Table 2 compares the results between the UK and the TW (Taiwanese) corpora. The UK corpus contains 4779 metadiscourse markers (251.7 per 1000 words) versus 3006 instances (194.9 per 1000 words) in the TW corpus, with a log ratio of 0.37 indicating that overall use is approximately 30 % more frequent in the UK corpus. The difference is primarily attributed to interactional markers, with frequencies of 169.5 and 113.5 in the UK and TW corpora, respectively, resulting in a log ratio of 0.58, which corresponds to roughly a 50 % higher frequency. All subcategories of interactional markers are notably more frequent in the UK corpus. Given that these linguistic elements are instrumental in managing rapport, enhancing credibility, and promoting persuasion within the discourse community, UK supervisory interactions appear to be “more personal” (Hyland, 2005, p. 44). On the other hand, interactive markers demonstrate a comparable aggregate usage rate (82.1 versus 81.3), despite minor variations across subcategories. The close resemblance seems to reflect shared awareness of community expectations and tacit generic knowledge in utilizing interactive markers to structure discourse effectively and augment the comprehensibility of highly informative interactions across academic cultures. The following sections will present an in-depth comparative analysis of the interactional and interactive metadiscourse employed by supervisors and supervisees across both settings, with the aim of further examining the interplay with discourse roles and academic contexts.

4.1. Use of the interactional metadiscourse

Interactional metadiscourse concerns with the linguistic devices that help speakers “express their stance, project their identity, and engage with their audience” (Hyland & Jiang, 2018). Among the interactional subcategories, hedges, boosters, attitude markers, and self-mention are considered speaker-oriented resources that encompass expressions of speaker's attitude and evaluation of the proposition, whereas engagement is hearer-oriented resources that focus on encouraging hearer interaction (Liu & Cheng, 2025). Table 3 presents interactional metadiscourse used by UK and TW supervisors.

As shown in Table 3, UK supervisors exhibit a slightly higher overall frequency of interactional metadiscourse (193.2 vs. 176.2). This variation is primarily attributable to the wider prevalence of boosters and attitude markers, particularly the latter occurring at more than twice the rate, as shown in the following examples.

- [1] Yeah, that's **fine** {attitude marker}. So whatever you feel **best** {attitude marker}, **really**. {booster} I'm **happy** {attitude marker} to ... [UK01]
- [2] The only way is to work through this, you know, with pen and paper, and think **very** {booster} **carefully** {attitude marker} and work through **every single** {booster} detail. [UK03]

In example [1], the Greek supervisor from the UK primarily employs boosters and attitude markers to show support for the work of his student while the British supervisor in example [2] uses these metadiscoursal devices to prompt the student to be detailed-oriented.

Conversely, TW supervisors show a greater preference for self-mention, although the difference was not statistically significant. In both supervisor sub-corpora, engagement is the most prevalent interactional feature, constituting more than half of all occurrences (57 % and 53 % in the UK and TW datasets, respectively) and appearing approximately 2.5 times more frequently than in student sub-corpus (see Table 4 below). Similarly, hedges emerge as the second most frequent interactional element and are employed at nearly the same rate. Broad distributions of engagement markers are associated with the institutional role of supervisors who attempt to involve their students in the discourse community primarily through directives, questions and audience references, whereas the high incidence of hedges reflects supervisors' efforts to signal cautiousness to maintain scholarly credibility, openness for alternative voices and encouragement of student contributions.

Table 3

Interactional metadiscourse used by supervisors.

	UK supervisors (10,043 words)		TW supervisors (5000 words)		LL	Log ratio
	Raw frequency	Normalized frequency ⁺	Raw frequency	Normalized frequency ⁺		
Hedges	291	28.9	150	30.0	0.12	−0.05
Boosters	230	22.9	87	17.4	4.95*	0.40
Attitude markers	259	25.7	55	11.0	39.08**	1.23
Self-mention	126	12.5	82	16.4	3.49	−0.39
Engagement markers	1035	103.0	507	101.4	0.09	0.02
Total	1941	193.2	881	176.2	5.24*	0.13

⁺ per 1000 words * $p < .05$; ** $p < .0001$.

Table 4
Interactive metadiscourse used by students.

	UK students (8942 words)		TW students (10,423 words)		LL	Log ratio
	Raw frequency	Normalized frequency ⁺	Raw frequency	Normalized frequency ⁺		
Hedges	222	24.8	121	11.6	47.68*	1.10
Boosters	217	24.2	127	12.1	39.63*	0.99
Attitude markers	131	14.6	46	4.4	56.62*	1.73
Self-mention	328	36.6	189	18.1	62.17*	1.02
Engagement markers	380	42.5	387	37.1	3.49	0.19
Total	1278	142.9	870	83.4	153.10*	0.78

⁺ per 1000 words * $p < .0001$.

Table 4 displays the frequency of interactional metadiscourse in the student sub-corpora. The overall use is considerably higher in the UK student sub-corpus (log ratio 0.78 or 72 % higher frequency), with stance-related resources occurring approximately two to three times more frequently. The following examples compare the use of interactional metadiscourse found in student utterances of the two sub-corpora.

- [3] I think {hedge} ... Oh, I {self-mention} was circling things that ... it showed on my {self-mention} side. I'd {self-mention} have to {booster} figure this out. It's better {attitude marker} but I was ... [UK01]
- [4] Professor {engagement}, talking about the experimental setup that I {self-mention} follow ... in the while having the pulse response in water in air firstly we {engagement} usually {hedge} focus on tune burst signal to verify our {engagement} sample. Why do we {engagement} use tune burst ... [TW02]

The British student in example [3] demonstrates a pronounced authorial presence by using first-person pronouns such as *I* and *my*, along with the strong modal *have to*. This assertiveness is softened through the use of hedging devices and a comparative adjective, which help convey his stance more subtly. In contrast, the Indian student in TW predominantly employs engagement markers, notably the inclusive *we*, to foster a collaborative working relationship with his supervisor and lab colleagues – a common practice in STEM disciplines.

A comparison of Tables 3 and 4 reveals several noteworthy findings. The discrepancies between UK and TW supervisors are relatively small, with the main distinction lying in their preference for different types of interactional metadiscourse. However, the markedly higher frequency of stance-related features used by international and domestic students studying in the UK compared to their counterparts in Taiwan suggests their greater orientation toward employing these linguistic devices to express attitudes, epistemic judgments, and authorial commitments, thereby enhancing persuasiveness and fulfilling rhetorical objectives, all of which are fundamentals in the Western educational philosophy (Aziz, 2023). The following excerpts provide an extended discussion of the use of interactional metadiscourse between the Greek supervisor and his British student.

Example [5a] from UK01 (only interactional resources are highlighted)

Supervisor: I think {hedge} maybe {hedge} you {engagement} should {hedge} elaborate a bit {hedge} more in terms of what is the effect of increased interference on the system you {engagement} study. Because obviously {boosters} you {engagement} said there's more interference when you {engagement} have more peaks.

Student: So when I'm {self-mention} talking about what the effects of interference is when I'm {self-mention} looking at the increase, sorry {attitude marker}, so when I {self-mention} have got these images here, when I'm {self-mention} talking about these, so you {engagement} want me {self-mention} to talk about how increasingly separation causes more interference? {engagement}

Example [5a] presents a supervisory meeting in which the student rehearsed his research presentation in advance to receive feedback from the supervisor. The thesis concerns the characterization of a digital micromirror device (DMD) for applications in particle beam systems. Following the rehearsal, the supervisor requested that the student expound on the effect of increased interference on the system “I think maybe you should elaborate a bit more ...”. This request is heavily hedged through the use of expressions such as *I think*, *maybe*, *should*, and *a bit*, followed by an intensified justification “because obviously you said there's more interference ...”, marked by the booster *obviously*. The student further elaborates using a series of first-person statements *I'm talking about*, *I'm looking at*, and *I have got*, reflecting a strong commitment to the claims made and position. The student's clarification question, “So you want me to talk about how increasingly separation causes more interference?”, initiates another round of interaction as follows:

Example [5b]

Supervisor: No, just {booster}, if you {engagement} could {hedge} just {booster} elaborate more, what will be the effect. So I think {hedge} it's important {attitude marker} to mention that, you know {engagement}, what you {engagement} are aiming for is reduced interference.

- Student: when I'm {self-mention} saying I'm {self-mention} saying that when I so I'm {self-mention} going for using the DMD for interference to get these patterns. ... I {self-mention} probably {hedge} haven't explained it very {booster} well {attitude marker}. (Supervisor: Yeah.) ... I've {self-mention} got these things here for the basic theory, should {hedge} I {self-mention} perhaps {hedge} remove them? {engagement} Do you {engagement} think they're important {attitude marker} to have? {engagement}
- Supervisor: No. I think {hedge} you {engagement} should {hedge} have them because people in the audience won't be familiar. (Student: Okay.) ... You {engagement} just {booster} try to put yourself {engagement} in their shoes. The only thing that keeps them interested {attitude marker} in your {engagement} talk would {hedge} be applications that they can {hedge} relate, (Student: Okay) like a better {attitude marker} quality of image. Perfect {attitude marker}. (Student: Yeah.) They can they can {hedge} understand and then they can {hedge} keep going. They wouldn't {hedge} hang up or go away. Yeah? {engagement} (Student: Yeah.) Okay, good {attitude marker}.

In contrast to the heavily hedged suggestion in the initial exchange, which appears to have been misunderstood by the student, the supervisor shifts to a more emphatic and directive stance as seen in 5[b]. This shift is evidenced by the repeated use of the booster *just* in “No, just, if you could just elaborate more what will be the effect”, which serves to sharpen the focus and reorient the student's attention toward the actual request. This strengthened directive is immediately supported by a rationale “I think it's important to mention that, you know, what you are aiming for is reduced interference”. The utterance blends hedging (*I think*), an attitudinal marker (*important*), and engagement features (*you know, you*), reinforcing both instructional clarity and interpersonal rapport (Lin, 2020). In response to the supervisor's instruction, the student mirrors the interactional strategy by repeatedly utilizing self-mention *I'm saying, I'm going for* and *I've got* to assert authorship of his presentation content and signal that the issue has to some extent already been addressed. However, the co-occurrence of various hedges *probably, perhaps* and *should* signals uncertainty regarding the adequacy of his explanation, which is then followed by a subtle challenge to the supervisor's earlier directive in “Do you think they're important to have?”.

The supervisor reiterates the necessity of retaining the theoretical content in the presentation, noting that the audience may not be familiar with it. He further underscores the importance of linking this content to relatable applications such as improved image quality in order to maintain audience engagement. In this supervisory feedback, the supervisor strategically and consistently employs Hyland's interactional metadiscourse to guide and support the student. Hedges such as *I think, should, can, and would* are used to soften directives and maintain a collaborative tone, while the booster *just* directs the student's focus clearly without sounding forceful. Attitude markers like *important, better, perfect, and good* express personal evaluation and encouragement, reinforcing a supportive learning environment. Engagement markers are particularly prominent, notably through the repeated use of *you* and questions like *yeah?*, which invite the student's involvement and foster dialogue. Collectively, these features help the supervisor balance instructional authority with interpersonal rapport, promoting student understanding and participation. The supervisor's detailed explanation dispelled the student's doubts and led to acceptance of the directive.

Another notable statistical finding presented in Table 4 is that UK students employ significantly more interactional metadiscourse than their counterparts in Taiwan in order to develop authoritative stance and achieve rhetorical purposes, as exemplified by a common pattern of supervisor-student interaction in Example 6 below.

Example [6a] from UK04 (only interactional resources are highlighted)

- Supervisor: Okay, so how is how is how's it gone over the last couple of weeks, your {engagement} project? {engagement}
- Student: Yeah, so, so, actually {booster} I {self-mention} was able to get to the coordinates and do the simulation and now I {self-mention} was able to get the results So I {self-mention} actually {booster} follows follow the book and it has, so I {self-mention} follow the mathematical model on the book and ... it actually {booster} has a like, kind of like {hedge} method the mathematical model has has constants. So with the constant actually {booster} it predicted better {attitude marker} ...

In Example [6a], the student reports progress on the project, explaining that he has successfully run simulations and analyzed raw data for fault prediction. By applying a mathematical model from a textbook, he was able to improve the accuracy of fault detection. Extensive distribution of boosters *actually* (four times) and self-mention (four times) as well as co-occurrences of the two features in expressions such as *actually I was able to* and *I actually follow*, emphasize a high degree of active involvement and confidence in his work. His assertive conclusion “with the constant actually it predicted better”, marked by the booster *actually* and the attitude marker *better*, indicating a positive evaluation of both his approach and technical achievements. The student continues his explanation, after which the supervisor requests a justification for the metric being referenced, as illustrated below.

Example [6b]

- Supervisor: Your {engagement} parameter you're {engagement} saying is 95 % when you're {engagement} using the pump model, but it's but it's 50 % when you're {engagement} not using the pump model, what exactly {booster} is this figure of merit? {engagement}
- Student: Oh, sorry {attitude marker} let me {engagement} say that again. So if I {self-mention} just {booster} use the exact {booster} raw data and try to predict the faults the same way, same way I'm {self-mention} doing before, what I {self-mention} do is I {self-mention} just {booster} get the fault, I {self-mention} just {booster} get the data and I {self-mention}

mention} predict the faults ... The fault prediction goes less than 60 %. (Supervisor: Okay.) But if I **{self-mention}** extract the pump it and the torque parameters, and try try to derive the same prediction with the constants, only with the constants, only with the three constants, it **actually {booster}** predict **better {attitude marker}**, **much {booster}** better **{attitude marker}**, the fault prediction **actually {booster}** does **much {booster}** better **{attitude marker}**, it **actually {booster}** goes to 95 %.

Supervisor: So, yeah, I **{self-mention}** understand, okay. Okay. Okay. So what **you're {engagement}** saying is, if **you {engagement}** **actually {booster}** have a **real {booster}** physical model, it gives **better {attitude marker}** predictions.

The student employs frequent self-mentions e.g., *I just use, I'm doing* and *I just get* to assert authorship and take personal responsibility of the analytical process. These I-oriented assertions are accompanied by an extensive use of boosters e.g., *exact, just, actually* and *much* which serves to emphasize certainty and reinforce the credibility of his claims, particularly in correcting the supervisor's earlier misunderstanding about model performance. The co-occurrence of self-mentions and boosters effectively constructs a confident and authoritative stance, which is vital for negotiating meaning and creating *power-with* interactions, i.e., those grounded in collective strength and finding common ground (Noddings, 1984) within asymmetrical supervisory contexts. The students' strategic use of interactional metadiscourse in this exchange reflects growing pragmatic competence in managing academic interaction and contributing to the establishment of epistemic authority in a manner aligned with institutional conventions. Meanwhile, the supervisor's consistent utilization of second-person engagement structures across his two speaking turns e.g., *you're saying, you are using*, and *you actually have* suggests a dialogic and collaborative effort to co-construct knowledge and mutual understanding. His final evaluative statement "if you actually have a real physical model, it gives better predictions" concurs with the student's preceding explanation and confirms shared comprehension.

Examples 5 and 6 illustrate the vital role of interactional resources in highlighting supervisors' directives and key points as well as in foregrounding students' authorial presence, while the tentative voice and engagement markers helps manage intellectual humility and foster interpersonal rapport and collaboration in the UK corpus. Identical functions are observed in the TW corpus, although they occur significantly less frequently in students' speech. The international students in Taiwan tend to devote considerably more attention to organizing the densely informative exchanges through the use of interactive metadiscourse (see Example [13] in Section 4.2). Examples 7 and 8 below show how interactional resources are employed in the TW corpus.

Example [7] from TW04 (only interactional resources are highlighted)

Supervisor: **You {engagement}** also gathered some reference material from statistical analysis of the urine quality, right? **{engagement}** for some paper? **{engagement}** (Student: Yes) ... if **we {engagement}** also like to do that kind of analysis, **our {engagement}** study, do **you {engagement}** have any plan? **{engagement}**

Student: **Actually {booster}**, **sir, {engagement}** the main point of **my {self-mention}** research is not **just {booster}** the conductivity sensor. (Supervisor: Yes) So, because this is for the urinalysis or Urolithiasis monitoring ...

Supervisor: So **maybe {hedge}** **you {engagement}** **can {hedge}** also focus on what kind of approach they based on those parameters ... so **you {engagement}** **can {hedge}** **you know {engagement}**, according to their approach, to develop **your {engagement}** own or for **our {engagement}** system to have those four key parameters. (Student: Yes sir) ... **maybe {hedge}** **you {engagement}** **can {hedge}** say that **just {booster}** like template. (Student: Yes sir), give **you {engagement}** some, **you know {engagement}**, some steps **can {hedge}** be followed. And even **you {engagement}** **can {hedge}** adopt their algorithm or their approach and see, do they fit to **our {engagement}** system too. (Student: Yes) Yeah, that's **important {attitude marker}**.

In this exchange, the supervisor's frequent use of engagement resources (e.g., *you, we, our* and questions) directly involves the student and elicits reflection on prior work, particularly reference materials involving statistical analyses of urine quality. The broad distribution of these resources across the supervisor's initial and subsequent turns establishes a collaborative tone and frames his input as part of a shared intellectual inquiry. The student responds using boosters (e.g., *actually* and *just*) to assert the broader scope of his research beyond the conductivity sensor, emphasizing its focus on multi-parameter monitoring. The supervisor redirects focus toward leveraging earlier research as a potential template for enhancing the methodological rigor of the student's work, which is achieved by strategically softening suggestions through hedges (e.g., *maybe* and *can*), thereby balancing directive intent with interpersonal

Table 5

Interactive metadiscourse used by supervisors.

	UK supervisors (10,043 words)		TW supervisors (5000 words)		LL	Log ratio
	Raw frequency	Normalized frequency ⁺	Raw frequency	Normalized frequency ⁺		
Transition markers	586	58.3	225	45.0	11.38**	0.37
Frame markers	59	5.8	32	6.4	0.15	-0.12
Endophoric markers	188	18.7	59	11.8	10.31*	0.67
Evidentials	5	0.5	1	0.2	0.84	1.32
Code glosses	33	3.2	35	7.0	9.56*	-1.09
Total	871	86.7	352	70.4	11.22**	0.30

⁺ per 1000 words * $p < .01$; ** $p < .0001$.

sensitivity. The recurrence of such softening devices mitigates face-threatening acts and maintains the student's agency. The supervisor further employs attitude markers *that's important* to signal approval and validate the significance of the proposed direction.

Example [7] illustrates how hedges function in tandem with engagement markers to cultivate a collaborative tone, promote intellectual autonomy, and support the co-construction of knowledge. The communicative strategy in Example [7] and also Example [5] reflects the tentative nature of knowledge production in early-stage research and aligns with a facilitative, partnership-oriented supervisory style in both academic contexts. On the other hand, a teaching-oriented style is discernible in the TW corpus, as evidenced in Example [8], and is likewise manifested in the UK corpus, as exemplified later in Section 4.2.

Example [8] from TW03 (only interactional resources are highlighted)

Supervisor: **I think {hedge} you {engagement} have to {booster}** modify the dataset ... **I think {hedge}** the first character the first character **must {booster}** be capital ... **I think {hedge} you {engagement} have to {booster}** use the capital letter or for the for this eight as well ... [Student: Okay] **you {engagement}** use the small capital or some other small and **you {engagement} have to {booster}** change it in capital letter the big M, okay? **{engagement}** [Student: Oh okay]

In Example 8, the supervisor adopts an assertive tone, particularly when delivering repeated directive feedback on correcting the dataset. The high density of imperatives within a brief stretch of talk, heavily marked by boosters *have to* and *must* reinforces a didactic and authoritative stance, conveying an attitude of non-negotiability. This reflects a *power-over* (Noddings, 1984) supervisory exchange, i.e., power as force and domination and is evident in the student's immediate acknowledgements and acceptance of the instructions. However, the supervisor's intensified directives are partially mitigated by the hedge *I think*, which serves to balance instructional authority with the maintenance of an appropriate interpersonal relationship.

4.2. Use of the interactive metadiscourse

Interactive resources function to organize discourse and explicitly guide the audience's interpretation in contextually appropriate ways. Tables 5 and 6 present the quantitative distribution of interactive metadiscourse used by supervisors and students across both contexts.

As shown in Table 5, UK supervisors employ a marginally (23 %) higher overall frequency of interactive metadiscourse than their Taiwanese counterparts, particularly through a greater use of transition and endophoric markers, as illustrated in the following example:

[9] **So {transition} as I said {endophoric marker}**, 71 and 72 ... when it starts getting to be a proper example, is **this set here {endophoric marker}** that I mentioned earlier **{endophoric marker}**, **so {transition}** it's combining Fourier Transform and window design, **and {transition}** we have application to Lowpass ... [UK03]

These elements contribute to coherence by explicitly signalling logical connections between ideas (e.g., *so*, *and*) and referencing other parts of the text (e.g., *as I said*, *this set here*). In contrast, Taiwanese supervisors display a heightened use of code glosses, reflecting a stronger orientation toward elaboration and clarification realised by *say*, *for example*, as the following utterance shows:

[10] No, no, you don't need to write the conversation **like say {code gloss}** I would like tell everybody **say {code gloss}** what is the capacity of the sample transducer [Student: Yes professor] you just say I have different distances [Student: Yes professor] alright? What is the difference between measured signals [Student: Yes professor] between two cases **for example {code gloss}** right? [TW02]

Among students, however, an inverse pattern emerges: students in Taiwan exhibit a slightly higher overall frequency of interactive metadiscourse, primarily due to their more frequent use of endophoric markers (see Example [11]), while the remaining subcategories are employed at broadly similar rates by both groups. The patterns displayed in Tables 5 and 6, while indicative of potential cultural orientations, are more appropriately construed as provisional hypotheses, as they may also be conditioned by factors such as activity type, reliance on visual materials, and speakers' L2 status, i.e. variables that warrant further examination through task-phase and speaker-level controls.

Table 6

Interactive metadiscourse used by students.

	UK students (8942 words)		TW students (10,423 words)		LL	Log ratio
	Raw frequency	Normalized frequency ⁺	Raw frequency	Normalized frequency ⁺		
Transition markers	475	53.1	543	52.1	1.10	0.03
Frame markers	23	2.5	37	3.5	1.50	−0.46
Endophoric markers	139	15.5	252	24.1	18.10**	−0.64
Evidentials	1	0.1	0	0.0	1.55	Inf
Code glosses	51	5.7	71	6.8	0.94	−0.26
Total	689	77.0	903	86.6	5.40*	−0.17

⁺ per 1000 words * $p < .05$; ** $p < .0001$.

[11] So in **this one {endophoric marker}** they so it helps them to create the random window. This, **this MLP {endophoric marker}** like dimension, because like **before I mentioned {endophoric marker}** like first in a width second in height. Yeah, like that. So after **this shifted MLP {endophoric marker}**, we have **this two seater MLP {endophoric marker}** in tokens MLP. [TW01]

In light of the comparable use of interactive metadiscourse in the UK and TW corpora, differing only marginally in frequency, Examples [12] and [13] provide extended examples to illustrate the integrated use of the devices, with the former from a British supervisor and the latter from an Indian student studying in Taiwan.

Example [12] from UK03 (only interactive resources are highlighted)

Supervisor: **Okay, so {transition}** as I said **{endophoric marker}**, it's **this section {endophoric marker}** that we're, we're looking into. ... **Okay, so {transition}** going through **this textbook {endophoric marker}** again, I'm going to highlight the key concepts ... **So {transition}** this, **this is {endophoric marker}** a FIR filter. **So {transition}** we don't have any terms in y, we only have terms in, in the input x, and earlier times as well. So it's, **so {transition}** it's an FIR filter is simpler than an infinite IIR filter. Okay? **And then then {transition}** it goes through through a very simple example **here {endophoric marker}**, of a FIR filter. **So {transition}** the output is in terms of the input terms, **and {transition}** they've got different coefficients. **Okay, then {transition}** it goes through. **This {endophoric marker}** is the design technique we're going to use. **So {transition}** **this {endophoric marker}** is a mathematical derivation, **and {transition}** **this {endophoric marker}** is the Fourier Transform Design technique. **So {transition}** it basically, what it does it by pen and paper analytical calculations, it performs a Fourier transform, **and {transition}** it works out the integral.

The UK supervisor in the above example guides the student through a critical section of the textbook with which the student is expected to engage. Drawing on this section, he explains the concept of FIR filters, emphasizing that they contain only input terms (x) and are therefore simpler than IIR filters. The supervisor walks through a basic example of an FIR filter and introduces the design technique that will be used: the Fourier Transform Design method. He highlights that this approach involves analytical calculations by hand, including performing a Fourier transform and evaluating the resulting integral. This extended discourse, as in Example [8], is heavily instructional and structured with numerous transition markers (such as *so*, *and*, and clusters *okay so*, *and then*, and *okay then*) to signal logical progression. It also features endophoric markers (*as I said*, *this section*, *this textbook*, and *this*), which refer to previously mentioned information or make additional materials salient to help the student retrieve his intended meaning. The extract illustrates the supervisor's didactic stance, as he scaffolds the explanation step by step while keeping the student anchored in the textbook content.

The following example illustrates how an Indian student in the TW corpus draws on interactive metadiscourse to facilitate the explanation of a complex model.

Example [13] from TW01 (only interactive resources are highlighted)

Student: **So next {frame marker}**, we will see the tokens MLP stage. **So {transition}** **here {endophoric marker}** in this tokens MLP stage. **First {transition}**, what they did? They shifted the features to project the tokens, the first one after convolution layer. **Then {transition}** they have like those that pass **those tokens {endophoric marker}** into the shifter and will be first in width. Yeah, **then later, {transition}** they use this feature, **but {transition}** rather than using ReLU they use GELU. Yeah, **here {endophoric marker}**. **So {transition}** that's one of the parameter they change. **Because {transition}** GELU is the is we can having **here {endophoric marker}** is we can say is low power meter.

In Example [13], the student introduces the tokens MLP stage of the UNExT model. He explains, after the initial convolutional layer, that the model shifts the extracted features to create what are called *tokens*. These tokens are then passed through shifter MLP layers, first along the width of the image. Later in the process, the model applies the GELU activation function instead of the more common ReLU. The student notes that GELU is preferred in this model because it consumes less computational power, contributing to the model's efficiency. In this utterance, the student uses interactive metadiscourse to guide the listener through a complex explanation of the tokens MLP stage. The frame marker *so next* signals a transition to a new section of the presentation, helping the audience follow the sequence. Transition markers *so*, *then*, *but*, and *because* indicate logical relationships between steps and ideas, showing progression, contrast, or cause-effect reasoning. Endophoric markers *here*, *this*, and *those tokens* refer to visual elements, maintaining cohesion and anchoring the explanation in shared context. These metadiscursive elements function collectively to help the speaker structure the content, maintain coherence and support the audience's understanding of the technical processes being described.

4.3. Implications of findings

The widespread distribution of metadiscourse in thesis supervisions across both academic contexts underscores the impact of dynamic, collaborative interaction on metadiscursive practices. Supervisors and supervisees rely heavily on these features to organize densely packed discourse, construct community-recognized academic personas, express stance during knowledge co-construction, and manage appropriate interpersonal relationships within a hierarchical and highly participatory academic setting (Nasiri & Mafakheri, 2015). The extensive use of metadiscourse can also be attributed to the nature of the discipline, as engineering typically involves

collaborative work, procedural explanations of technical knowledge, and references to visuals and specifications (Rogers, 2021).

Cross-contextual comparisons reveal several noteworthy findings. First, interactive metadiscourse in the UK and Taiwanese corpora exhibits similar distribution patterns, despite minor statistical variations in specific subcategories. This resemblance appears to reflect a shared awareness of disciplinary conventions and tacit genre knowledge, contributing to coherent discourse structuring and enhancing the comprehensibility of information-dense academic interactions in both contexts. In contrast, substantial differences emerge in the overall use of interactional metadiscourse, with consistently higher frequencies across all subcategories in the UK corpus. Key functions of interactional metadiscourse such as negotiating evaluative positioning, enhancing credibility and managing rapport appear to render UK supervision sessions comparatively more personal in tone.

Contrastive analyses of the detailed breakdown reveal that international students in Taiwan employ markedly fewer stance-related resources, while Taiwanese supervisors use fewer boosters and attitude markers. Metadiscourse is intrinsically tied to the contexts in which it is deployed, functioning as an indicator of academic cultures by reflecting the rhetorical norms and audience expectations embedded within a discourse. Variations in metadiscursive patterns thus offer valuable insight into the distinctive characteristics of discourse communities and the ways speakers position themselves within academic exchanges. The substantially lower use of such metadiscursive features in the Taiwanese corpus may be attributed to cultural norms rooted in Confucian philosophy, which emphasize hierarchical structures and position teachers as authoritative figures. Within such educational contexts, students are expected to display deference, comply with established conventions, and follow a supervisor-led research trajectory, which may constrain the overt expression of stance and interpersonal engagement. This observation corresponds with Xu's (2017) finding of Chinese doctoral students opting for a stance of active inaction or simply passivity when responding to supervisors' comments, despite being afforded opportunities for negotiation and the exercise of agency. Supervisory interactions may be viewed as mediating between Confucian values of respectful compliance and academic expectations for students to develop critical autonomy through socialization into institutional discourse practices. In contrast, UK students' increased utilization of stance markers tends to reflect a rhetorical orientation that foregrounds individual voice, facilitates critical engagement and support the development of original arguments, aligning with the academic values emphasized in the UK context (Aziz, 2023). These discrepancies illustrate how students in both contexts negotiate knowledge in ways that are meaningful and appropriate within their respective academic communities. Additionally, the observed differences imply international students' academic adaptation to host institutions, an adjustment that is widely acknowledged to significantly influence positive learning outcomes and intellectual success in higher education (Tinto, 1993, Krauze et al., 2005).

Finally, the qualitative analysis of metadiscourse highlights the fluidity of supervisors' role, often alternating between Dysthe's (2002) teaching, partnership, and apprentice models within a single supervision session. In both academic contexts, thesis supervisors function as domain experts offering explicit guidance on research and thesis development (e.g., Examples 8 & 12), reflecting the teaching expert model. Alternatively, they may adopt a partner-like identity, participating in collective intellectual engagement (Examples 5, 6, 7 & 13). The supervisor of UK02 delivering a series of sequential instructions to coach the student in operating a new program exemplifies the apprenticeship model. While the teaching and apprenticeship models often reflect a *power-over* stance, the partnership model aligns more closely with *power-with*, characterized by shared knowledge-building. Dynamic role shifts achieved by strategic utilization of metadiscourse suggest that effective supervision is not a static application of authority, but a responsive and negotiated practice, attuned to the evolving needs of the student and the epistemic demands in the unfolding supervision encounter.

5. Conclusion

This study examined the use of metadiscourse in engineering thesis supervisions at universities in the UK and Taiwan, providing insights into its distribution patterns and pragmatic functions in relation to the discourse roles of supervisors and students, as well as the relevant academic contexts. Supervision is as much an ideational encounter as an interpersonal exchange. The findings yielded not only enhance our understanding of metadiscursive practices across universities with rather distinct academic cultures but also offer pedagogical guidance by helping to establish clearer expectations for supervisors and students in these personalized academic interactions. Further studies could focus on "disciplinary specificity" (Hyland, 2017a) identifying the varied use of metadiscourse in supervisory meetings across disciplines.

CRediT authorship contribution statement

Chia-Yen Lin: Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **Ken Lau:** Writing – review & editing, Investigation, Conceptualization. **Yufang Ho:** Writing – review & editing, Data curation.

Declaration of generative AI in scientific writing

During the preparation of this work the authors used ChatGPT in order to improve the readability and language of the manuscript. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

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