Please note that this is a pre-print (1st proof) version of the chapter.

10 Epilogue

Disciplinary Literacies as A Nexus for Content and Language Teacher Practice

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This book is guided by two primary objectives, namely to "foster … reflection on the importance of paying attention to language in EMI experiences" and "to translate research findings into practice so that teachers find themselves in a stronger position to make optimal choices in their everyday teaching" (Lasagabaster & Doiz, this volume, p. 00). These objectives are supported by the inclusion of a final section in each chapter articulating specific recommendations for EMI teacher practice. We will use this space to focus attention on these practical recommendations.

The objective for this epilogue is thus consistent with the overarching purpose of the book: engaging readers in further discussion of what these recommendations regarding language (broadly speaking) mean for EMI practice. Our discussion here is facilitated by viewing these recommendations through the theoretical lens of disciplinary discourse and disciplinary literacy (Airey, 2011, 2012, 2020; Airey & Linder, 2009; Airey *et al*., 2017; Becher, 1987; Linder, 2013).

Lasagabaster and Doiz disclaim any intention to "turn content teachers into language teachers" (p. 00), and rightly so, given that many content teachers feel that teaching language is neither their responsibility (Macaro, 2020) nor within their realm of competence (Airey, 2012; Doiz, Lasagabaster & Pavón, 2019). Our message to readers is this: even if *learning English* (or learning language) is not always understood by stakeholders to be an objective in EMI, and even if EMI teachers have few (if any) articulated linguistic goals for their students (Airey, 2020), it *must* nonetheless be an objective in EMI (like any education, regardless of medium of instruction) that students learn to engage in *disciplinary discourse* and develop *disciplinary literacy*. Since it is not possible to engage with discourse and literacy while remaining fully disengaged with language itself (cf. Lyster, 2017), content teachers are *de facto* language teachers. Those who focus attention on language in the EMI classroom not only help their students to appropriate disciplinary discourse (i.e. become disciplinarily literate), but also, potentially, enhance their students' opportunities to learn the disciplinary content.

All of the contributions to this volume make it abundantly clear that languages, not just English but also other languages known to teachers and/or students, play a critical role in EMI. A warranted question, then, is whether these two positions (i.e. that of many EMI teachers *versus* that touted by linguists and scholars of English for Academic Purposes like ourselves) are reconcilable. We believe that they are, and in making this assertion draw on the research of John Airey (and colleagues) in disciplinary discourse and disciplinary literacy.

The discourse of a discipline is the sum total of the semiotic resources that are integral to the discipline's conveying of meaning/modes of knowing, e.g. images, spoken language, written language, language of mathematics (e.g. symbols and formulae), tools (e.g. software), gesture and working practices (Airey & Linder, 2009: 29, Fig. 1). The socialization of students into a discipline, i.e. their learning in a discipline and their maturation as "disciplinarians," is contingent on them becoming "fluent in a critical constellation of the different semiotic resources—or modes of disciplinary discourse as we depict them—in order to experience holistically the disciplinary way of knowing that these resources/modes potentially give access to" (Airey & Linder, 2009: 28). In later work, Airey refers to this fluency as disciplinary literacy, i.e. "the ability to appropriately participate in the communicative practices of a discipline (Airey, 2011: 3)." Airey (ibid.) furthermore suggests that

> disciplinary literacy function[s] in three particular sites: the academy, the workplace and society. Each of these sites has the potential to be divided into a local and an international form. The international forms will almost certainly involve English, whilst the local forms may involve one or more other languages.

The recommendations for EMI teacher/teaching practice issued in this volume clearly address the academy and the workplace as well as society in the sense that they have some value for all three sites but tend to focus on the academy and how various "disciplinary pedagogic discourses" (cf. Geirsdóttir, 2011) embrace language as integral to the disciplinary pedagogic experience.

We support the idea that it is both sensible and strategic to frame research and recommendations with a linguistic focus as addressing a mode of disciplinary discourse when the target audience is EMI stakeholders (teachers, students, policy makers and academic management); for this broader audience a disciplinary discourse approach is potentially more palatable than a "traditional" linguistic approach (cf. Airey, 2020). Recommendations concerning language would then be presented not as about language, but what it means to be a member of a specific disciplinary community. By refraining from positioning the content teachers to do a job they are not equipped for (i.e. teaching language)—and by

avoiding framing the content classroom as focusing on something other than disciplinary content—a disciplinary literacy approach to EMI is both more attractive and more intuitive to teachers (who can confidently rely on their disciplinary identity when teaching), to students (who can be satisfied that the content classroom furthers their socialization into the discipline), and to policy makers and academic managers (who can be confident that the task falls within the grasp of the content teachers and the curricular objectives).

EMI content classrooms, like those studied in the chapters of this book, represent a microcosmos of the relevant disciplinary discourse; it is in the content classroom (as a component of the broader learning environment) that students are introduced to the expected ways of "behaving" like disciplinarians by their teachers, not least to what communication within a discipline is supposed to be like: "content lecturers, as disciplinary insiders, have an important role to play in disambiguating … disciplinary communicative practices for their students" (Airey, 2011: 1). Teachers (and by extension also students) need to be (made) aware of the centrality of language, not for the sake of attending to language *per se*, but because language is instrumental for developing disciplinary literacy and for furthering the disciplinary learning experience. This awareness is an overarching theme cutting across the chapters of this book, as exemplified by the following recommendations from some of the authors:

> [For the purposes of enhancing disciplinary learning] all lecturers need to develop more awareness of how LREs [language related episodes] can be pedagogically useful.
>
> (Martinez, Machado & Palma: 00)

> [Teachers should] be aware of linguistic, paralinguistic and extralinguistic input strategies.
>
> (Costa & Mariotti: 00)

> [Teachers should] include activities that develop learners' language awareness.
>
> (Banegas & Manzur Busleimán: 00)

> Teachers need a high degree of disciplinary language awareness … teachers [need to] understand how to draw attention to and teach the language and genres of their disciplines effectively.
>
> (Pavón & Ellison: 00)

Thus, disciplinary language awareness is prominent throughout the volume, and the chapters highlight it in various ways. Commonalities can be found, with a number of themes taken up in one chapter and then

returned to and reinforced in another. Four themes in particular stand out in the pedagogical recommendations:

- The “place” of English as a disciplinary language vis à vis teachers’ and students’ first language
- Disciplinary vocabulary and terminology
- The multimodality of disciplinary semiotic resources
- Pedagogy to enable development of disciplinary literacy

Recommendations in each of these areas can be reviewed through the lens provided by disciplinary discourse and disciplinary literacy.

The “Place” of English as a Disciplinary Language: English Versus L1

An EMI setting is by definition a multilingual space, so the role of English must be understood in relation to the role of the L1(s) in the setting. The question concerning a boundary or effective continuum between English and the L1 is addressed in several of the chapters. Martinez, Machado and Palma note how students frequently “follow the guidance pertaining to the use and role of English as laid out by the instructors” and how establishing a language “covenant” “can be a useful strategy” (p. 00). Indeed, their research offers several examples of language covenants being established between teachers and students:

> All lecturers interviewed had communicated or negotiated some kind of “class covenant” or rules regarding the nature of the class, the role of the teacher and of English itself. Nancy, for example, began her first class with a slide that read “This is not an English class.” Frank also reported establishing an agreement with his students on the first day of class, emphasizing the aim for “functional, not perfect English” and how he welcomed their “suggestions and even corrections.”
>
> (p. 00)

The views expressed by these teachers, representing civil engineering and veterinary science respectively, is reflective of the received view of language in many “hard” (as opposed to “soft”) disciplinary contexts: “In the sciences, language is often viewed as a passive bearer of meaning—an unproblematic means for reporting quantitative results … this is not the case in the humanities and social sciences where language is conceived as integral to the thoughts and meanings being expressed” (Airey *et al*., 2017: 571). An example of the opposing view (“language is a central concern”) from the humanities is provided by Doiz and Lasagabaster. In the quotation below, a teacher in economic history “underscores the importance of being precise”:

> So this is important because you need to be precise when you are talking, OK, you need to be really precise, really accurate, otherwise you will be wrong, or even worse, people will say that you are saying, you are communicating what you don't want to say.
>
> (p. 00)

Whether or not linguistic accuracy is critical in disciplinary learning contexts, several of the authors emphasize that English (preferably global varieties of English, per Shephard and Morrison) and the L1 should be mutually supportive of each other. This is, in many cases, reflective of how English and the L1 are used in the various disciplines, and it likely increases students' comprehension of and engagement with disciplinary content. To this end, Rose urges teachers to view the L1 as a pedagogical tool and to consider raising "awareness of the value of other languages to fulfil certain functions and help content learning" (p. 000). Similarly, Doiz and Lasagabaster note how "an English-only language policy is neither realistic nor effective," recommending "the use of the students' L1" since it "helps learners grasp complex concepts (p. 00)" and, specifically, providing the translation of technical vocabulary in students' L1.

Disciplinary Vocabulary and Terminology

To the extent that EMI teachers feel able and willing to address language development, they are more likely to be in their comfort zone when it comes to disciplinary vocabulary and technical terminology. Terminology is so closely linked with disciplinary concepts that when teachers introduce new concepts, the distinction between teaching disciplinary content and teaching vocabulary disappears. Several chapters advise attention to vocabulary, and in particular discipline-specific vocabulary, in various ways.

Shepard and Morrison encourage "early exposure to academic and specialist vocabulary" (p. 000). This recommendation is based on their finding that the undergraduates in Hong Kong they studied found reading to be challenging, and a prominent cause of their "reported reading challenges is a lack of rich academic or technical vocabulary" (p. 000). Speaking and listening were perceived as less challenging than reading, but the difficulties reported were also laid partially at the door of vocabulary.

The unfamiliarity of vocabulary, and specifically technical vocabulary, underpins Doiz and Lasagabaster's recommendation that teachers provide glossaries. In their study vocabulary was the focus of the LREs in Spanish university classrooms. LREs, particularly involving lexis, were also the focus of Martinez, Machada and Palma's chapter. In their study, students reported finding the LREs helpful, and on that basis, they recommend that teachers be more aware of their utility and could be trained to incorporate them as a conscious strategy.

Banegas and Manzur Busleimán believe that learners can benefit from activities aimed at raising awareness of features of language, including vocabulary. One of their respondents singles out vocabulary as having a particularly important role, saying "I don't think we need exercises for language improvement, but I do need key vocabulary I can use" (p. 000). This chimes with the findings of the empirical studies synthesised in Rose's chapter, which suggest that some EMI students lack an adequate vocabulary for EMI, providing the basis for his recommendation to "pre-teach discipline-specific vocabulary and academic language skills" (p. 000).

The Multimodality of Disciplinary Semiotic Resources

Four of the chapters highlight the fact that teachers should exploit a full repertoire of resources, including multimodal resources. To this end, Airey and Linder (2009: 40) remind us that "no one mode in itself can ever be holistically representative of a disciplinary way of knowing, and therefore it is impossible to experience disciplinary ways of knowing through discursive fluency attained in one mode alone." This is a critically important message for the EMI classroom: multimodality is a necessary condition for achieving disciplinary learning (cf. the reference to fluency in a constellation of the different semiotic resources), even if the number of necessary modes and their centrality clearly differ from discipline to discipline. Doiz and Lasagabaster analysed teachers' use of LREs and showed that multimodality ("textual, aural, linguistic, spatial, and visual resources or modes as well as instances of typographical enhancement", p. 00) in a number of forms added richness to them, concluding that learning about both concepts and the vocabulary to express them will benefit from teachers' multimodal practices. Costa and Mariotti join them in advising attention to paralinguistic resources (among which they highlight speech rate, intonation, pronunciation, and articulation) and extralinguistic resources (notably Power Point presentations, use of the blackboard, gestures, and graphs and tables), in addition to purely linguistic ones. This is important not only in the classroom, but, as Banegas and Manzur Busleimán note, in the online environment. The learning platforms on which so many teaching and learning activities take place offer, in some ways, richer possibilities than the bricks-and-mortar classroom does for exploiting the affordances of multimodality. Gómez and Gallardo-del-Puerto second this, drawing on their investigation of pronunciation in an EMI context. They point out that a number of multimodal tools (including technology) provide opportunities to develop pronunciation skills, and interactivity supported by many multimodal online environments can facilitate learner autonomy.

Pedagogy to Enable Development of Disciplinary Literacy

A number of the contributors to this volume point out that whether content teachers actively work to develop disciplinary literacy skills, or see their role as a more passive one of modelling that literacy or raising students' awareness, good pedagogical skills play a role in delivering on the promise of exposure to disciplinary literacy. Thus, Pavón and Ellison remind us that effective pedagogues meet the learners where they find them (e.g. by offering ways for students to engage receptively and productively in communication/literacy tasks). Specifically, they advocate teacher awareness of the learners' linguistic abilities, pointing out the need to distinguish between conceptual (mis)understanding and a language barrier. As noted above, Rose advocates plurilingual practices, seeing them as a way of supporting less proficient learners by bridging the gap between their current level of proficiency and the high demands made in the EMI environment. Zhang and Lo's chapter examined teacher metadiscourse. Such language is a valuable resource for structuring and framing instructional interactions. This leads them to place emphasis on the teacher's language in the classroom, advocating diverse linguistic strategies and in particular the use of metadiscoursal strategies to further interactivity in the pedagogical environment.

Content teachers in other classrooms could take inspiration from examples and strategies like these, but additional measures may be required by higher education institutions to promote a content classroom pedagogy that enables the development of disciplinary literacy. One way would be to introduce a disciplinary literacy perspective in higher education teacher training; this could be an effective way of raising pre-service and in-service content teachers' awareness of how the semiotic resources of a discipline—including language—are inextricably linked to disciplinary membership and therefore deserving of pedagogic attention. By bringing in a disciplinary literacy perspective in higher education teacher training and affording *some* attention to language, universities and colleges could also be seen as heeding the call from content teachers asking for more support in addressing one of the challenges often associated with teaching in EMI.

Conclusion

Each chapter in this volume addresses the intersection of teacher practice and language use in tertiary-level EMI. In this concluding chapter, we have explored a conundrum at that intersection: many non-language teachers in the EMI environment—perhaps most—feel estranged from the role of language teacher. At the same time, as experts in their disciplines, they are also expert communicators in their disciplines, and therefore excellently placed to guide their students in the development of

disciplinary literacy (provided they are given the support and conditions for doing so, cf. Schmidt-Unterberger, 2018).

As EMI expands in our universities, resolving this conundrum will become increasingly important. If there is an additional thread running throughout these contributions, it is the advocacy of partnership. As Airey (2020) notes, the contributions of linguists to EMI research can only be relevant if the content teacher's perspective is taken into account. This volume has reinforced, again and again, that language teachers and content teachers need to share an agenda, and to make that possible, they need not to inhabit separate silos. One step toward that end would be to allot disciplinary literacy a place in the EMI curriculum, with expressed intended learning outcomes and the necessary alignment of the objectives with teaching and learning activities and assessment. This would create a situation in which language teachers and content teachers were on the same footing. The task would still remain of finding functional forms of partnership, and that will be a long-term project. The contributions in this volume provide an excellent platform for it.

References

Airey, J. 2011. "The Disciplinary Literacy Discussion Matrix: A Heuristic Tool for Initiating Collaboration in Higher Education." *Across the Disciplines* 8 (3). Retrieved from https://wac.colostate.edu/docs/atd/clil/airey.cfm.

Airey, J. 2012. "I Don't Teach Language: The Linguistic Attitudes of Physics Lecturers in Sweden." *AILA Review* 25: 64–79. doi: 10.1075/aila.25.05air

Airey, J. 2020. "The Content Lecturer and English-Medium Instruction (EMI): Epilogue to the Special Issue on EMI in Higher Education." *International Journal of Bilingual Education and Bilingualism* 23: 340–346. doi: 10.1080/13670050.2020.1732290

Airey, J., Lauridsen, K. M., Räsänen, A., Salö, L., and Schwach, V. 2017. "The Expansion of English-Medium Instruction in the Nordic Countries: Can Top-Down University Language Policies Encourage Bottom-Up Disciplinary Literacy Goals?" *Higher Education* 73 (4): 561–576. doi: 10.1007/s10734-015-9950-2

Airey, J., and Linder, C. 2009. "A Disciplinary Discourse Perspective on University Science Learning: Achieving Fluency in a Critical Constellation of Modes." *Journal of Research in Science Teaching: The Official Journal of the National Association for Research in Science Teaching* 46 (1): 27–49. doi: 10.1002/tea.20265

Becher, T. 1987. "Disciplinary Discourse." *Studies in Higher Education* 12 (3): 261–274.

Doiz, A. Lasagabaster, D. and Pavón, V. 2019. "The Integration of Language and Content in English-Medium Instruction Courses: Lecturers' Beliefs and Practices." *Ibérica* 38: 151–175.

Geirsdóttir, G. 2011. "Teachers' Conceptions of Knowledge Structures and Pedagogic Practices in Higher Education." In *Knowledge and Identity: Concepts and Applications in Bernstein's Sociology*, edited by G. Ivingson, B. Davies and J. Fits, 90–106. Abingdon: Routledge.

9780367681784_C010.indd 220 19-02-2021 17:34:27

Linder, C. 2013. "Disciplinary Discourse, Representation, and Appresentation in the Teaching and Learning of Science." *European Journal of Science and Mathematics Education* 1 (2): 43–49.

Lyster, R. 2017. "Preface." In *Integrating Content and Language in Higher Education: Perspectives on Professional Practice*, edited by J. Valcke and R. Wilkinson, 7–14. Frankfurt am Main: Peter Lang.

Macaro, E. 2020. "Exploring the Role of Language in English Medium Instruction." *International Journal of Bilingual Education and Bilingualism* 23 (3): 263–276. doi: 10.1080/13670050.2019.1620678

Schmidt-Unterberger, B. 2018. "The English-Medium Paradigm: A Conceptualisation of English-Medium Teaching in Higher Education." *International Journal of Bilingual Education and Bilingualism* 21 (5): 527–539. doi: 10.1080/13670050.2018.1491949