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A corpus-based analysis of discourse strategy use by English-Medium Instruction university lecturers in Turkey

Abstract:

This article reports a descriptive study that analyzed the discourse strategies used by Turkish university lecturers when delivering academic content in English. Through non-participant observation of English-Medium Instruction (EMI) lessons delivered by seven lecturers from five universities, a corpus of 13 hours of recorded data was constructed. The lecturers' strategic language behaviors were identified and categorized based on the taxonomy developed by Dörnyei and Scott (1997, later elaborated by Sánchez-García, 2019). Corpus-based analysis revealed that the lecturers employed a wide range of discourse strategies, the majority of which were the use of fillers, self-rephrasing, and code-switching. Thematic analysis showed these discourse strategies offered two chief functions: (i) to cope with linguistic issues, and (ii) to further students' comprehension. The results also revealed that most strategies only have *medium communicative* potential. This study highlights the necessity and significance of lecturer professional development to enhance the quality of EMI provision through the employment of discourse strategies that warrant greater communicative potential.

Keywords: English-medium instruction, discourse strategies, communicative potential, EMI lecturers, higher education

23 **1. Introduction**

24 In the age of globalization, the implementation of English as a medium of instruction
25 has burgeoned, particularly in higher education (HE; Dearden & Macaro, 2016; Macaro et
26 al., 2018). This language policy is defined as “*the use of the English language to teach*
27 *academic subjects (other than English itself) in countries or jurisdictions where the first*
28 *language of the majority of the population is not English*” (Macaro, 2018:19). Although
29 the swift increase of English-medium instruction (EMI) is observed across the world,
30 universities in Europe have been fertile soil for this phenomenon to achieve the goals of
31 the Bologna Process, particularly in terms of staff and student mobility across the 47
32 European countries including Turkey (Doiz, Lasagabaster, & Sierra, 2012; Tsou & Kao,
33 2017; Wächter & Maiworm, 2014; Yuksel et al., 2022).

34 Even though EMI is a relatively new research field, a large body of literature has
35 evolved over the last 15 years (Macaro et al., 2018). Several areas of EMI have been
36 investigated such as the perceptions of EMI teachers and students (e.g., Dearden &
37 Macaro, 2016; Jensen & Thøgersen, 2011; Jiang & Zhang, 2019; Galloway & Curle, 2022),
38 the impact of EMI on English learning (e.g., Byun et al., 2011; Rogier, 2012), and EMI
39 academic success (e.g., Dafouz, Camacho, & Urquia, 2014; Rose et al., 2019; Xie & Curle,
40 2020; Altay et al., 2022; Curle et al., 2020a; Yuksel et al., 2021). This recent research
41 interest in EMI has gradually been shifting towards the scrutinization of EMI classroom
42 discourse (e.g., Macaro, 2020; Sánchez-García, 2019; Shartierly, 2013; Sahan, Rose &
43 Macaro, 2021; Genc & Yuksel, 2021; Duran & Sert, 2019). In their review of studies on
44 EMI, Curle et al. (2020b), highlight the need for further research focusing on classroom
45 interaction and how successful the delivery of content knowledge is. Detailed analysis of
46 EMI classroom interaction using discourse analysis can help us understand the teaching

47 and learning practices happening in EMI classes. Portraying what exactly is going on in a
48 classroom can help us reach conclusions about teaching and learning. (Walsh, 2011).
49 Relatively limited research attention has been paid to EMI classroom practices in the
50 Turkish EMI context. Additionally, no studies have explored the strategic language
51 behaviors of EMI lecturers in Turkey. This study, therefore, fills this research gap and
52 makes an original contribution to knowledge by analyzing the use, function, and
53 communicative potential of discourse strategies (DSs) used by content lecturers when
54 delivering academic content through English.

55 **2. Literature Review**

56 **2.1. EMI in Turkey**

57 The use of English Medium Instruction in Turkey can be described in terms of phases
58 of implementation: first generation and second (also the newest generation) generation
59 of EMI, these correspond to the time before and after the 21st century (Karakaş &
60 Bayyurt, 2019). The first attempt of EMI in Turkey was made by Robert College, founded
61 as an American enterprise in 1863. At the tertiary level, Middle East Technical University
62 was the first state university that embraced EMI in 1956, which later initiated the
63 provision of EMI in foundation universities. EMI universities of the second generation
64 differ from those of the first in terms of them being the propelling force behind the wide
65 adoption of EMI across Turkey, as well as having a different target student profile they
66 appeal to. In other words, Turkey has changed the direction of the motivation behind
67 EMI programs from giving priority to domestic students, to following a policy of
68 internationalization and globalization. It can therefore be claimed that the inclusion in
69 the Bologna Process in 2001 led to the second upsurge of EMI in Turkey. Purely English-
70 medium universities were launched, and existing Turkish-medium universities started

71 offering partial EMI programs to fulfil the goals set out in the Bologna Process (Arik &
72 Arik, 2014).

73 Many studies in the Turkish EMI context focus on attitudinal research, exploring the
74 beliefs of stakeholders. Scholars have reported perceptions and the reported challenges
75 of implementing EMI from the point of view of teachers (e.g., Başibek et al., 2014) and
76 students (e.g., Evans & Morrison, 2011; Kırkgöz, 2009; Macaro & Akincioglu, 2018; Soruç
77 et al., 2021). The strategies to cope with such challenges (e.g., Soruç & Griffiths, 2018)
78 and the required English language skills for EMI students (Inan et al., 2012) have also
79 been investigated. However, few studies have been carried out to shed light on
80 classroom discourse used in the Turkish EMI context (see Sahan, 2020; Sahan & Rose,
81 2021; Sahan, Rose & Macaro, 2021). By analyzing lecturer discourse strategies, this
82 study makes a significant contribution to this growing body of EMI research.

83 2.2. Classroom Discourse in EMI

84 The implementation of English as a medium of instruction (which is neither the
85 native language of the instructors nor that of the majority of the students) demands
86 great cognitive and linguistic effort from teachers and students (Hincks, 2010). Studying
87 EMI classroom discourse provides insights into the actualization and operationalization
88 of EMI. Recent studies have focused mainly on clearly distinct discourse practices in EMI
89 classrooms. For example, Sánchez-García (2016) and Thøgersen and Airey (2011)
90 investigated the effects of the medium of instruction on teachers' speech rate and
91 instructional activities. These studies revealed that lecturers tend to speak more slowly
92 and run over time due to repetitive explanations when teaching through English. The
93 results of studies done by Lo and Macaro (2012) and Yip, Coyle, and Tsang (2007) also
94 indicate that EMI makes the classroom environment less student-centered, that it does

95 not involve as much negotiation of meaning and scaffolding as lessons through the first
96 language do. This micro-analytic investigation of the interaction between teachers and
97 students is an important aspect of EMI discourse.

98 Recently, a few studies have investigated the discourse used in EMI classes. One of
99 these studies, Sahan and Rose (2021), focused on the functions of translanguaging in
100 EMI engineering programs in Turkey. Findings revealed that engineering lecturers and
101 students utilized translanguaging practices for a variety of pedagogical purposes
102 including presenting new academic content and asking questions related to academic
103 content. In another study, based on the same dataset, Sahan, Rose and Macaro (2021)
104 explored the differences in pedagogical practices according to type of university (i.e.,
105 elite, large, and small). Results showed that first language (L1) use and lecturer-student
106 interaction varied significantly by university type. More specifically, fewer instances of
107 L1 use and interaction were found in EMI classes at elite universities. Finally, Sahan
108 (2020) examined 14 hours of EMI classroom discourse in Turkey through an English as a
109 Lingua Franca lens. Results revealed that lecturers used the L1 a means to enact
110 communicative effectiveness.

111 In another study in the Turkish EMI context, Genc and Yuksel (2021) investigated
112 EMI lecturers' questioning techniques from a social interactionist perspective. They
113 focused on the scope of talk, typology, contingency, and convergence-divergence as laid
114 out in Boyd's (2015) taxonomy. Their descriptive study revealed that questions were
115 most frequently asked in mathematics and engineering courses. EMI lecturers also used
116 mostly text-based, display, and convergent questions, which resulted in restricted
117 interaction in classes. In another series of studies, Duran, Kurhila, and Sert (2019)
118 focused on students' vocal and visual practices in relation to Word Search in an EMI

119 university in Turkey. It was observed that the lecturer did not orientate to students' word
120 searches. This revealed that content is prioritized over language in this EMI setting. This
121 finding is supported by Duran and Sert (2019) who highlighted that student participation
122 in EMI can be enhanced through resources such as teachers' embodiment, turn designs,
123 and displaying preference. Similar to these studies, the current study adopts this same
124 type of micro-analytic approach to investigation in order to determine the level of
125 communicativeness of discourse strategies used in EMI lectures.

126 2.3. Discourse Strategies in EMI

127 Along with teacher-student interaction, the features of EMI teachers' spoken
128 discourse have recently caught the attention of researchers. Verbal strategies used by
129 EMI content lecturers during their lectures are often researched through the lens of
130 code-switching, one of the most explored strategies in the literature. It has been found
131 that the extent to which the first language (L1) is needed in EMI classes is connected to
132 the proficiency level of the students (Macaro, Tian, & Chu, 2020; Pun & Macaro, 2018;
133 Tarnopolsky & Goodman, 2012). Regardless of the amount of code-switching, many
134 studies (e.g., Al Makoshi, 2014; Macaro, 2020; Sánchez-García, 2016) reported that
135 switching to the native language creates greater clarity and fulfils many purposes such
136 as elicitation, comprehension, and classroom management. Moreover, Sahan et al.
137 (2021) found that the use of the L1 serves mainly pedagogical purposes such as
138 presenting new content and asking questions related to content. These findings suggest
139 that code-switching is not always an indicator of a language barrier but serves a purpose
140 of fostering effective communication.

141 Unlike the investigation of code-switching, only a handful of studies have
142 investigated discourse strategy (DS) use by EMI lecturers. These studies have shown

143 that the most frequently employed strategies by EMI teachers are: prosody, code-mixing,
144 and comprehension check (Azian, Abdul Raof, Ismail, & Hamzah, 2013); repetition,
145 questioning, and code-switching (Shartierly, 2013); literal translation and language
146 switch (Zubaidi, 2014); and retrieval, restructuring, and repetition (Sánchez-García,
147 2019). Conclusions from these studies noted that DSs can vary depending on the
148 student profile, the discipline taught, and the educational setting. The use of L1 did
149 seem to be prevalent in most of these circumstances.

150 In addition to the use and function of DSs, Sánchez-García's (2019) research
151 categorized the strategies according to the degree of their communicative potential
152 namely DSs with *less, medium* and *more* communicative potential.

153 In this study, less communicative potential DSs involved the use of omission (an
154 example from this study corpus is: *in a research study, deception refers to... [pause]*
155 *deception. So sometimes when you do particularly experimental research, we tell or not*
156 *tell (.) the purpose of the research in order not to impact their feelings, their ideas, their*
157 *opinions, right – T5).*

158 The medium communicative potential was the use of fillers (e.g., *Your level that you*
159 *are being exposed to, too many you know like ideas and concepts, you know too much*
160 *information. –T2), use of all-purpose words (e.g., *He had he made a lot of*
161 *documentaries, especially on the oceans, seas, underseas, falan [TR. and so on], lots of*
162 *documents documentaries – T2) and code-switching.**

163 More communicative potential DSs included six moves such as comprehension
164 checks, self-paraphrasing (e.g., *When I say three, you could put fourth, fifth, sixth. There*
165 *is no limit, OK. But I say three times doesn't mean the only three types exist in the*
166 *world, OK. ... So there is no end. – T6) and restructuring, among others.*

167 Further details and sample excerpts are provided in the Data Analysis section.
168 Building on previous literature (e.g., Sánchez-García, 2019), this study examines the
169 discourse strategies (and their communicative potential) employed by lecturers in the
170 Turkish EMI context.

171

172 **3. Methodology**

173 This study addresses the following research questions:

- 174 1. Which discourse strategies are employed by university lecturers teaching in an
175 English-medium instruction setting?
- 176 2. What are the uses and functions of the discourse strategies exhibited?
- 177 3. To what extent do the discourse strategies employed serve the lecturers' purpose
178 communicative goal?

179

180 **3.1. Context of the Study**

181 Five universities offering EMI programs constituted the locus of data collection in
182 this study. Of these five universities, U1, U2, and U3 were state universities while U4 and
183 U5 were foundation universities. The number of EMI programs and international
184 students varied depending on the university. However, on average, 35% of all programs
185 were offered in English and 8% of the students came from various countries across the
186 world; this made the provision of EMI essential as most of those students didn't speak
187 Turkish. Different forms of EMI (i.e., full and partial) were available in U1, U3, and U4.
188 U5 offered only partial EMI programs in which 30% of the courses were taught through
189 English. U2 delivered all degree programs in (full) EMI. In the Turkish context, a 'full' EMI

190 program refers to an academic program of study where all courses are offered in English
 191 (only) and all teaching and assessment practices are carried out in English (only). On the
 192 other hand, partial EMI programs offer a minimum of 30% of their courses in English, and
 193 the remaining 70% of the courses are delivered in Turkish. Detailed information about
 194 the universities in this study is provided in Table 1.

195

196 Table 1. *Information about the sample universities*

Universities	Type (*)	Status (**)	Size (***)	EMI Type
U1	State	Public	Big	Both full and partial
U2	State	Public	Big	Full only
U3	State	Public	Big	Both full and partial
U4	Foundation	Elite	Small	Both full and partial
U5	Foundation	Elite	Small	Partial only

197 *Type: according to funding, **Status: according to the student admissions, ***Size:
 198 small: fewer than 10.000 students, medium-sized: between 10.001 and 29.999, big: more
 199 than 30.000 students.

200

201 3.2. Participants

202 Various roles in classroom discourse are attributed to teachers such as: taking
 203 control of the communication patterns (Johnson, 1995), controlling the content (Slimani,

204 1989) and promoting or restraining learning opportunities (Walsh, 2002). EMI lecturers
 205 were therefore chosen as the focus of the current study to gain greater insight into EMI
 206 classroom discourse. The sample was selected utilizing convenience and purposive
 207 sampling (Mackey & Gass, 2012). To illustrate, participants with different teaching
 208 backgrounds were chosen from both state and foundation universities, to which the
 209 researchers had access. Also, the data were collected from different disciplines (i.e.,
 210 hard vs. soft sciences (Dafouz, Camacho & Urquia, 2014)) and different educational
 211 levels (i.e., undergraduate vs. graduate) to obtain a comprehensive overview of EMI
 212 provision. However, it is worth noting that this study did not primarily aim to investigate
 213 the role of the type of university, discipline, level of education, and teacher experience in
 214 the investigation of discourse strategies. These are therefore possible avenues for future
 215 research. The background information of lecturers is presented in Table 2.

216 Table 2. *Participants' background information*

Name	Title	Teaching experience	EMI experience	University	Earning a degree abroad	Receiving EMI training
T1	Full Prof.	19 years	18 years	U4 (Found.)	PhD	No
T2	Full Prof.	30 years	20 years	U4 (Found.)	PhD	No
T3	Full Prof.	19 years	12 years	U5 (State)	PhD	No
T4	Assoc. Prof.	12 years	5 years	U5 (State)	Master and PhD	No
T5	Asst. Prof.	9 years	9 years	U2 (State)	PhD	No

T6	Asst. Prof.	23 years	2 years	U1 (State)	Master and PhD	No
T7	Asst. Prof.	6 years	6 years	U3 (Found.)	PhD	No

217

218 3.3. Data Collection

219 Non-participant observation was used as the main data collection procedure in
 220 this study in order to not alter/interfere/affect EMI teaching/learning in any way (Curdt-
 221 Christiansen, 2020). After obtaining all the necessary ethical and legal permissions from
 222 each university, as well as getting written consent from all participants, university
 223 lectures were recorded. Field notes were taken by the first author during observation.
 224 These helped the researchers familiarize themselves with the characteristics of each
 225 participant’s spoken discourse and contextualize classroom talk during transcription.
 226 Data obtained from field notes were not analyzed in this study due to space limitations
 227 but facilitated the rigorous transcription and contextualization processes. After the
 228 observations, a structured interview (see Appendix A for interview protocol) was
 229 conducted with the lecturers to gain further background information (refer back to Table
 230 2 for participant details).

231 The recorded lectures analyzed in this study were delivered in the middle of the fall
 232 semester, in the 2019-2020 academic year. This was to ensure that by that point in the
 233 academic year both lecturers and students had had some experience and were familiar
 234 with teaching/learning through EMI. With the recordings of seven EMI lectures, a small
 235 corpus of EMI language was built. The details of the corpus collected are presented in
 236 Table 3.

237 Table 3. *Features of the corpus collected*

Name	Course and educational level taught	Minutes	Words	Words per minute	Number of DS type	Number of DS uses
T1	Ideology and Discourse Analysis (Graduate)	102	12.027	117	17	1.138
T2	Sociology of Everyday life (Graduate)	104	14.104	135	21	1.592
T3	Differential Equations and Applications (Undergraduate)	132	11.220	85	21	921
T4	Scientific Research Methods (Graduate)	81	9.459	116	19	783
T5	Research Methods in Education (Graduate)	157	17.602	112	20	948
T6	Introduction to Geomatics Engineering (Undergraduate)	88	9.253	105	21	387
T7	History of Political Thought (Undergraduate)	110	11.698	106	22	548
Total		774	85.363	110 (avg.)	24	6.321

238

239 3.4. Data Analysis

240 Corpus-based analysis and thematic analysis were the two main methods utilized
 241 to identify, analyze, organize, and describe discourse strategies (DSs) exhibited by EMI
 242 lecturers. Corpus-based analysis was applied through frequency counts and
 243 percentages. Since this method did not provide the finer details of the content of this
 244 classroom discourse, thematic analysis was employed to explore the uses, functions,
 245 and communicative potential of the DS occurrences. To ensure the validity of coding, six
 246 phases of thematic analysis proposed by Braun and Clarke (2006) were followed. This
 247 analytic framework includes: (a) familiarization with the data, (b) generating initial
 248 codes, (c) searching for themes, (d) reviewing themes, (e) defining and naming themes,
 249 (f) producing the report. The data were transcribed using basic transcription conventions
 250 as the main aim of this study was not to analyze the non-verbal aspects in the classroom
 251 (e.g., facial expressions and gestures) or prosodic features (e.g., pitch, accent, etc.)
 252 except for the intonation of language use. The transcribed data were coded according to
 253 Dörnyei and Scott's (1997) inventory list of strategic language devices which was later
 254 elaborated by Sánchez-García (2019). The taxonomy used in this study is presented in
 255 Table 4. Reliability of the coding was obtained by researcher triangulation. A teacher-
 256 researcher with an MA degree in English language teaching coded 10% of the DS
 257 instances as an external reviewer. The consistency percentage was 94%, 98%, and 97%
 258 for the strategies that have *less*, *medium*, and *more* communicative potential,
 259 respectively.

260 Table 4. *Dörnyei and Scott's (1997, p. 188-192) adapted inventory of strategic language*
 261 *devices.*

Commonly used discourse strategies	Definition	All examples are taken from the current corpus

A. Less Communicative Potential

- | | | |
|-------------|---|---|
| 1. Omission | Leaving a sentence unfinished when not knowing a word | I mean, let's take a look at also. None of the other answer is actually make sense because it says that time of the day. |
|-------------|---|---|

B. Medium Communicative Potential

- | | | |
|-----------------------------|---|---|
| 2. Use of fillers | Using gambits to fill pauses | But that's OK. You know , you can take, you know , a week off. |
| 4. Use of all purpose-words | Extending the context when specific words are lacking | Any identity becomes possible at the moment when we sort of prevent things or negate things . |
| 4. Code-switching | Including L1 words with L1 pronunciation in L2 speech | So that's a very good survey research, nüfus sayımı , the census. |

C. More Communicative potential

- | | | |
|------------------------|---|---|
| 5. Comprehension check | Asking questions to check that the interlocutor can follow you | There are not big cities in Europe in this period. The big cities, the real urban places, where do they exist in this period? |
| 6. Self-rephrasing | Repeating a term by adding something or using a paraphrase | It can be reinterpreted, redefined, reconstructed always over time. |
| 7. Restructuring | Leaving the utterance unfinished to continue with an alternative plan or modify it to provide further elaboration | You will be once you're done with your courses , you'll be presenting your research proposals here you know in 4 th semester. |
| 8. Retrieval | Saying a series of incomplete or wrong forms to retrieve a lexical item | If this is constant is just goes out the err goes out of the integral. |
-

9. Self-repair	Making self-initiated corrections in one's own speech	There were there was a kind of development of the rules, but they change.
10. Self-repetition	Repeating a word or a string of words	Both two dimensional, right? Two dimensional.
11. Other-repetition	Repeating something the interlocutor said	S: We're experiencing catharsis. T: Catharsis , right.

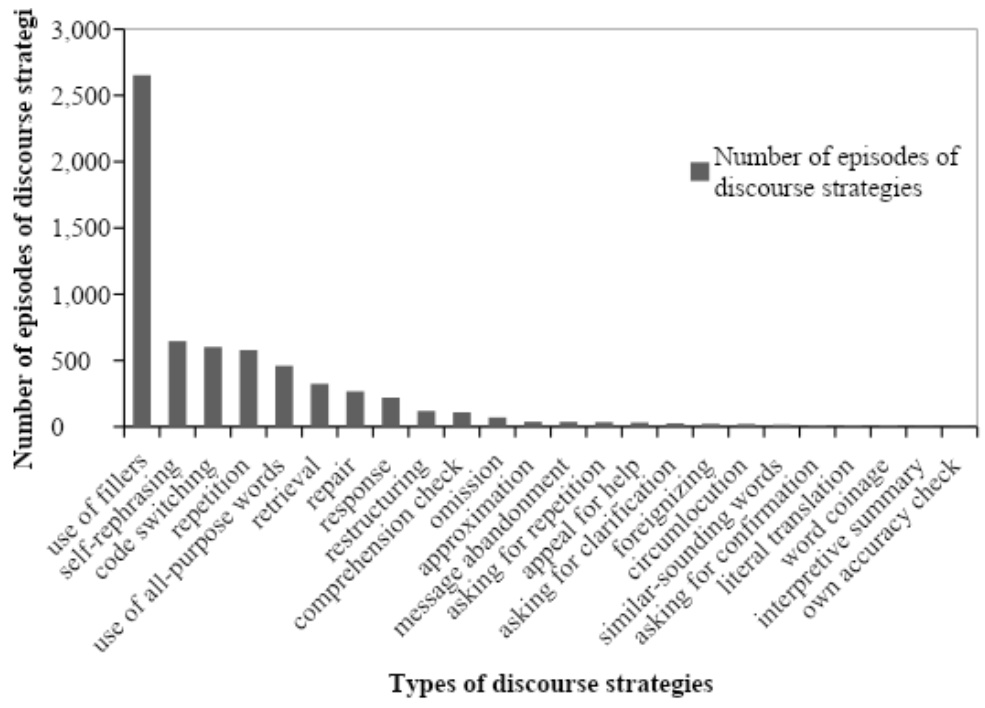
262

263 **4. Results**

264 4.1. The Most Common Discourse Strategies (RQ1)

265 To answer the first research question, a corpus-based linguistic analysis was
 266 utilized to examine frequency counts. The results revealed that a wide range of
 267 discourse strategies was utilized in the delivery of academic content through English. In
 268 total, 24 strategy types and 6.321 strategy *uses* were identified in the spoken discourse
 269 of the EMI lecturers. Although all lecturers employed similar strategies during their
 270 lectures, evidence of prioritizing certain strategies over others was present.
 271 Correspondingly, the incidences and frequencies of the DS types varied greatly in
 272 lecturer language. Nevertheless, one of the DSs was particularly favored by almost all
 273 the lecturers, this was the use of fillers. This DS constituted more than one-third of the
 274 DSs identified in the corpus. Figure 1 demonstrates the number of discourse strategies
 275 used, ranked from the most frequent to the least frequent. These are: *use of fillers* (n =
 276 2.654), *self-rephrasing* (n = 646), *code-switching* (n = 602), *repetition* (n = 579), *use of*
 277 *all-purpose words* (n = 460), *retrieval* (n = 324), *repair* (n = 267), *response* (n = 220),
 278 *restructuring* (n = 119), *comprehension check* (n = 109), *omission* (n = 70),
 279 *approximation* (n = 38), *message abandonment* (n = 37), *asking for repetition* (n = 35),

280 *appeal for help* (n = 32), *asking for clarification* (n = 25), *foreignizing* (n = 22),
 281 *circumlocution* (n = 21), *similar-sounding words* (n = 16) *asking for confirmation* (n =
 282 13), *literal translation* (n = 12), *word coinage* (n = 12), *interpretive summary* (n = 4), *own*
 283 *accuracy check* (n = 4).



284

285 **Figure 1.** Types and number of discourse strategy use

286

287 Since the different strategies require various formulations of language (i.e., at the
 288 word-level, phrase-level, and clause-level), the number of words required to utter the
 289 strategies also varied. The frequency percentages of the DSs were therefore also
 290 calculated based on the strategy occurrences per 1000 words. It was found that the
 291 lecturers uttered 254 words to exhibit strategic language behaviors every 1000 words.
 292 This reiterated the finding of the pervasiveness of DS use in EMI lecturers' spoken
 293 discourse.

294 4.2. The Use and Function of the Strategies Used (RQ2)

295 When the strategies employed were examined following their use and function using
296 thematic analysis, it became evident that one strategy would offer plenty of functions,
297 while one function was also enacted using numerous strategy types. The uses and
298 functions of the DSs that each lecturer opted for therefore varied widely. Nevertheless,
299 three primary uses emerged from the analysis: (i) abandoning the linguistic plan, (ii)
300 narrowing or extending the meaning with an alternative plan, and (iii) fulfilling the initial
301 plan successfully. An example of each use is provided below in Excerpts 1, 2, and 3
302 respectively.

303 Excerpt 1

304 *Abandoning the linguistic plan*

177 S8 I have a question. Do I have to interview people?

178 T1 Yes. I mean try to interview, to try to bring the, err, discourses,
the languages of other people. **Then how we will.** Let's try to
handle, let's try to interview other people.

305 Excerpt 2

306 *Narrowing or extending the meaning*

70 T2 So but it means also that there is **a kind of** err react **kind of**
resistance, right, from that type of micro-level of everyday life.

307 Excerpt 3

308 *Fulfilling the initial plan successfully*

275 T5 You can be a positivist and you can be a qualitative researcher,
which means you have a very systematic way of designing your
research. **You have a very, you know like, you can use** numbers to describe
your particular, you know like, phenomena.

309 As the excerpts presented above suggest, the lecturers were inclined to employ
310 such strategies when they encountered language-related challenges. For example, in
311 Excerpt 1, T1 left his utterance unfinished while explaining the significance of interviews
312 in that discipline. Nevertheless, it can be inferred that language-related difficulties such
313 as lexical retrieval may be the underlying cause that led to dropping the message. In
314 Excerpt 2, T2 could not retrieve the word he was seeking. When he realized this, he
315 continued with an alternative lexical item. This suggests that the target meaning may
316 have been narrowed or extended through the use of an alternate word. In Excerpt 3, T5
317 prominently faced obstacles regarding the retrieval of a word or phrase. She thus used a
318 filler to gain time to accommodate her thinking process. When she realized that she
319 could not compensate for this linguistic barrier in her discourse, she abandoned the
320 initial linguistic pattern to then go on to restructure the sentence. It can therefore be
321 concluded that the DSs functioned as a manner of coping with linguistic/fluency issues.

322 There were numerous occurrences of strategies being utilized to boost the
323 effectiveness of content delivery. Specifically, repetition, self-rephrasing, and
324 confirmation checks were frequently used to enhance students' comprehension. This
325 indicates that the employment of DSs in these EMI classes went beyond simply
326 compensating for a lack of proficiency. An example of this is given in Excerpt 4. In this
327 excerpt, T6 uses multiple DSs to help her students comprehend the topic and thereby
328 enhancing their learning.

329 Excerpt 4.

133 T6 I'm protecting my ideas to classroom. That's also called protection. OK. What about in Turkish? What is protection in Turkish? Does anyone know?

133 S1 Yansıtma (*reflection*)

134 T6 Hmm reflection but quite close. What else? You're not far from the truth. But still there is exact definition of projection in Turkish.

135 S6 İzdişüm (*projection*)

136 T6 Exactly. In Turkish it's called **izdüşüm** (*projection*).

331

332 Besides the abovementioned functions, other discourse strategy types were
 333 found to be frequently employed for various purposes. These DSs are presented in Table
 334 5 alongside the functions they served in the lecturers' spoken discourse.

335 Table 5. *Multifunctional Discourse Strategy types and the functions they serve*

DS Type	The Function
1. Use of fillers	<ul style="list-style-type: none"> ● Stalling for time ● Signposting the speech ● Maintaining the communication channel open ● Planning the following speech ● Showing hesitation
2. Self-rephrasing	<ul style="list-style-type: none"> ● Highlighting the important points of the content

-
- | | |
|-----------------------------|--|
| 3. Code-switching | <ul style="list-style-type: none">● Providing a second chance for the ones who could not understand● Providing wait-time for students● Filling the pauses in the speech● Compensating for lacking an L2 lexical item● Explaining concepts distinct to Turkish culture● Labelling terms in Turkish● Having non-instructional conversation● Getting students' attention |
| 4a. Self-repetition | <ul style="list-style-type: none">● Highlighting the key concepts● Continuing the lecture after being interrupted● Silencing the class● Checking own accuracy● Stalling for time |
| 4b. Other-repetition | <ul style="list-style-type: none">● Confirmation device● Enabling the class to hear the student's response |
| 5. Use of all-purpose words | <ul style="list-style-type: none">● Compensating for the lexical items not recalled● Furthering examples |
| 6. Retrieval | <ul style="list-style-type: none">● Recalling the target lexical item● Forming the rest of the sentence |
| 7. Restructuring | <ul style="list-style-type: none">● Self-correction |
-

336

337 4.3. Communicative Potential of Discourse Strategies used by EMI Lectures

338 (RQ3)

339 Having established that certain discourse strategies enhanced communication in
340 the classroom (see RQ2), the DSs used by lecturers were then analyzed based on
341 the extent to which they serve the communicative goal of the lecturers. Three
342 categories emerged from the data: namely *less*, *medium*, and *more*
343 communicative potential.

344 Discourse strategies with less communication potential (e.g., message
345 abandonment and omission) failed to deliver the target message completely or
346 hindered the continuation of the conversation. This took place 141 times in the
347 corpus. The DSs with medium communicative potential (e.g., use of fillers, all-
348 purpose words, similar-sounding words, etc.) were regarded as ‘in-between’
349 strategies as the message was delivered successfully, however with the
350 substantial influence of other languages, and/or by extending or severely
351 narrowing the meaning. This communicative category constituted the vast
352 majority of the DSs (3.795 occurrences) in the corpus. The last category,
353 strategies with *more* communicative potential allowed lecturers to recognize the
354 most convenient, straightforward linguistic path forward in order to deliver the
355 intended message completely and coherently. Despite the plenitude of strategy
356 types in this category, these were not the most prevalently utilized strategies in
357 the corpus (i.e., 2.385 occurrences). The frequency of each DS category within
358 the corpus is presented in Table 6.

359 Table 6. *Communicative potential of the discourse strategies used by lecturers*

The communicative degree of the DSs	The percentage of the DS category	The number of DS uses
Less communicative potential	02.3%	141
Medium communicative potential	60%	3.795
More communicative potential	37.7%	2.385

360

361 **5. Discussion**

362 5.1. The Most Commonly Used Discourse Strategies

363 In relation to the first research question, 24 discourse strategy types and 6.321
 364 strategy uses by seven EMI lecturers were identified in the 13-hour corpus. This implies
 365 that teaching distinct academic disciplines through a second language requires a wide
 366 range of discourse strategies to be utilized in order to foster comprehension. The
 367 frequency of these strategies was also shown to be in accordance with the lecturers’
 368 linguistic repertoire. When the number of words that contained DSs was calculated, it
 369 was found that around 25% of the spoken corpus was uttered to display discursive
 370 strategies. This study, therefore, provides further evidence of the indispensability of DSs
 371 in language used by EMI lecturers (Sánchez-García, 2019).

372 As for the distinctiveness of DSs as found in EMI classroom discourse, our findings
 373 were both similar and different from the existing literature. The overall, principal finding
 374 revealed that the use of fillers, self-rephrasing, and code-switching are the most used
 375 strategies in this corpus. Specifically, filler words were found to be a broadly inclusive

376 language tool, a finding that is consistent with other studies (e.g., Sánchez-García, 2016;
377 Shartiely, 2013). The finding in relation to code-switching is also in line with results of
378 some previous studies (e.g., Azian et al., 2013; Shartiely, 2013; Zubaidi, 2014), but
379 contradictory to Sánchez-García's (2016) results. This may be attributed to the language
380 policy of the EMI universities from which the data was collected. Furthermore, the
381 instances of self-rephrasing in this study were higher compared to those of other
382 studies. This discrepancy may be related to the fact that self-rephrasing was subsumed
383 into repetition by some scholars in previous data analysis (Azian et al., 2013; Sánchez-
384 García, 2019) as these two strategies are similarly formulated. This highlights a need for
385 further research differentiating these nuances.

386 5.2. The Uses and Functions of Discourse Strategies Used

387 The second research question sought to determine the uses and functions of the
388 discourse strategies employed by EMI lecturers. Results demonstrated that DSs were
389 predominantly used to perform two chief functions: (i) to overcome language-related
390 problems and (ii) to foster comprehension (and accordingly, foster communication).
391 Regarding the former, which was the case for most of the strategy occurrences, this
392 study provides evidence of the complex nature of EMI. Teaching through English is not a
393 simple translation of content into English (Macaro et al., 2018), it demands high
394 cognitive and linguistic effort (Hincks, 2010; Sánchez-García, 2016). Despite this, the
395 lecturers stated that they had not received any form of EMI training. Such training would
396 have highlighted to the lecturers these sorts of demands and equipped them with the
397 necessary skills to *deal* with such demands. The significance and necessity of such
398 training in the Turkish EMI context have also been highlighted in previous studies (Genc
399 & Yuksel, 2021).

400 Regarding the latter function (i.e., the promotion of comprehension), this finding
401 corroborates with the notion proposed by Nakatani and Goh (2007); that the employment
402 of these discourse strategies goes beyond mere compensation for a lack of proficiency.
403 However, it is worth noting that although repetition and self-rephrasing were the most
404 common DSs in this corpus, the total instances of such strategies were *lower* than those
405 of the DSs fulfilling the function of overcoming language issues. This finding differs from
406 Azian et al.'s (2013) and Shartiely's (2013) studies, which found a prevalence of the use
407 of questions, used specifically for comprehension checks. This incongruence in results
408 might be explained by class size as these studies focused on large classes, which may
409 have led to EMI lecturers in those contexts using questions and rephrasing more
410 frequently in order to manage big groups. Nevertheless, this study suggests that the
411 lecturers exhibited great effort to aid students' comprehension of academic content by
412 using DSs. This endeavor also indicates that lecturers' language proficiency shapes
413 content learning as Doiz et al. (2012) claim. Hence, these results provide further support
414 for the pertinence of lecturer training in how to foster content comprehension with the
415 help of the systematic use of meaningful and purposeful Discourse Strategies.

416 As well as the primary uses and functions of DSs discussed above, various ways of
417 using DSs and motivations for using DSs were identified in this study. Particularly, the
418 functions of code-switching (e.g., facilitating students' understanding, labelling the
419 concept in the native language, coping with lexical problems) was mostly found to be in
420 accordance with previous studies (e.g., Azian et al., 2013; Shartiely, 2013; Zubaidi, 2014;
421 Al Makoshi, 2014; Sánchez-García, 2016; Sahan & Rose, 2021; Macaro et al., 2020). This
422 was a sign that code-switching is a typical feature of the speech of a bilingual speaker
423 rather than a sign of linguistic deficiency (Wei, & Lin, 2019). Furthermore, since code-
424 switching in this study was found to be a language tool used to equip students with

425 additional cognitive support, these findings provide further evidence for the notion that
426 L1 use is a scaffolding strategy linked to sociocultural theory (García & Wei, 2014;
427 Sánchez-García, 2016).

428 5.3. The Communicative Potential of EMI Discourse Strategies

429 The third research question focused on the degree to which the DSs allowed EMI
430 lecturers achieve their communicative goals in teaching. It was found that 60% of
431 strategy occurrence had *medium* communicative potential. When compared to the study
432 by Sánchez-García (2019), these results are not aligned. Sánchez-García (2019) found
433 these strategies to have *more* communicative potential (68%). This might be because
434 the researcher did not include the use of fillers in this classification, yet filler
435 words/expressions seemed to be paramount, as mentioned above.

436 Additionally, the scarcity of interactional strategies in this study may stem from the
437 fact that EMI lecturers were the ones who constituted the majority of the classroom
438 discourse (i.e. students rarely spoke). This result confirms findings in studies such as
439 that in Genc and Yuksel (2021), Yip et al. (2007) and Lo and Macaro (2012) regarding
440 the teacher-centeredness in EMI classes.

441 Finally, code-switching is the other factor that may have decreased the
442 communicative potential of this corpus. As Smit (2019) and Macaro (2020) assert, code-
443 switching and other similar strategies that occur due to L1 interference (i.e., foreignizing
444 or word coinage) may lose the intended communicative potential when there are
445 students in the classroom who do not share the same linguistic background. This was
446 indeed the case in this study since the majority of the classes (except two in a partial
447 EMI program) included international students. However, this situation was distinctive,
448 especially to the classroom language performance of one lecturer. This indicated that

449 even though lecturers relied on the same types of strategies, they favored the same DSs
450 in different university grades. Therefore, the communicative potential in their lessons
451 varied.

452 **6. Conclusion and Pedagogical Implications**

453 Despite the limitations of this research, such as only observing the lessons once
454 and not using a retrospective analysis tool (i.e., stimulated recall; see Airey, 2015), this
455 study has pedagogical implications. First, findings emerging from the analysis of EMI
456 lecturers' spoken discourse imply that it is crucial for EMI lecturers to be conscious of
457 their language use for the sake of EMI achievement (Macaro, 2020). Through language,
458 lecturers are powerful agents in the process of facilitating a student's learning process
459 and therefore content comprehension and acquisition. By adopting more conscious
460 discourse strategies, lecturers can meet the needs of the learning moment as well as
461 create learning opportunities for students (Walsh, 2011).

462 Findings also showed that EMI lecturers encountered a great deal of linguistic
463 challenges due to a lack of fluency while teaching academic content through English,
464 particularly related to lexis. This study therefore proposes continuing professional
465 development discourse strategy training for EMI lecturers. Learning to use discourse
466 strategies efficiently might lessen lecturer experienced language-related difficulties.
467 Related to this was the finding of a lack of the frequent use of DSs that promote a
468 positive learning environment, due to lecturer linguistics barriers. This study therefore
469 bolsters the argument for the need for further EMI lecturer training which should be
470 aimed at assisting lecturers to make better use of numerous linguistic resources that
471 can help shape and positively enhance their students' learning process (Walsh & Li,
472 2013). There is therefore a need for further research into the teachability of these

473 discourse strategies in EMI contexts, as well as a measurement of the effectiveness and
474 effect on student learning outcomes of such explicit lecturer training and instruction.
475 Finally, longitudinal studies, tracking strategy use over time, would provide further
476 insight into the long-term effects of explicit discourse strategy use that exploit more
477 communicative potential.

478

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483

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676

677 **Appendix A. Structured Interview**

678 1. How many years of teaching experience do you have?

- 679 2. How long have you been teaching academic content through English?
- 680 3. Did you receive any of your degrees (e.g., Master's, PhD) abroad? **If yes:**
- 681 • Where did you study?
- 682 • How long did you study there?
- 683 4. Did you attend any training on teaching through English? **If yes:**
- 684 • Was it a pre-service or in-service teacher training program?
- 685 • Who provided the training?
- 686 • How long did it take?
- 687 • Do you think it contributed to your profession? If so, how?
- 688
- 689 Did you attend any training on teaching through English? **If no:**
- 690 • Do you think a training program should be provided on how to teach academic
- 691 content through English? Please elaborate.