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A Typology of English-Medium Instruction

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Abstract

The use of English to teach content subjects has been a growing trend in many parts of the world. It is labelled in a variety of ways, such as content-based learning, content and language integrated learning, immersion education, theme-based language teaching, and bilingual education, but it is referred to in this paper as English-medium instruction (EMI). The expansion of EMI worldwide has resulted in many different forms of EMI, as well as some confusion as to how they differ. In addition, a number of different forms of EMI may occur in the same school or institution, area, or country. The different forms of EMI can be usefully classified in the form of a typology. A typology provides a basis for objective and quantifiable accounts of the characteristics of EMI in different situations. The present typology describes 51 features across 10 curriculum categories, which were identified when comparing different forms and realizations of EMI. It highlights the many different dimensions of EMI that are involved in describing, planning, or evaluating EMI.

Keywords

English-medium instruction, typology, English teaching, English learning, content-based instruction

English-Medium Instruction Today

The use of English to teach content subjects has been a growing trend in many parts of the world. It is labelled in a variety of ways, such as content-based learning, content and language integrated learning (CLIL), immersion education, theme-based language teaching, and bilingual education, and will be referred to here as English-medium instruction

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(EMI). Several definitions of EMI have been proposed, including: "the use of the English language to teach academic subjects (other than English itself) in countries or jurisdictions where the first language of the majority of the population is not English" (Macaro, 2018: 35) and "settings where English is the language used for instructional purposes when teaching content subjects although not itself the subject being taught, and also a second or additional language for most participants in the setting..." (Pecorari and Malmström, 2018: 499). Although the growth of EMI is a global phenomenon, it is more widely used in private rather than public education (Dearden, 2015: 6) and is part of the broader role of English as a lingua franca, particularly in the academic domain (Galloway et al., 2017). Reasons for the choice of EMI may include:

- To improve the learning of English
- To provide a common language of instruction in countries with multilingual populations
- To promote economic competitiveness through developing an English proficient workforce
- To produce graduates with global literacy skills
- To enable institutions to attract international students
- To raise university rankings
- To increase the prestige of an institution
- To promote the competitiveness of universities
- To facilitate regional and international communication
- To develop students' intercultural communication skills

However, while the increasing use of EMI and the spread of "Global English" is sometimes seen as offering affordances (e.g. Hultgren, 2019), others see it as problematic and another aspect of the relentless spread of English – a debate that we will not pursue here (but see Pauline et al., 2016).

The expansion of EMI worldwide has resulted in many different applications of EMI as well as some confusion as to how they differ (Lasagabaster and Sierra, 2010; Pecorari, 2020). In addition, a number of different forms of EMI may occur in the same school or institution, area, or country. Prompted by a re-reading of Mackey's classic typology of bilingual education (Mackey, 1970), this paper seeks to classify the different forms of EMI in the form of a typology. A typology provides a basis for objective and quantifiable accounts of the characteristics of EMI in different situations, allows for the comparison of different forms of EMI, as well as suggests issues for further research. The present typology also provides "an accessible metalanguage" (Lin, 2016: 4) to describe different dimensions of EMI. In this typology, 10 criteria are used to identity the characteristics of EMI in a given context. The criteria are:

1. purposes of EMI;
2. assessment in EMI;
3. curriculum models;
4. introduction of EMI;
5. access to EMI;

6. the English course and EMI;
7. the EMI teacher;
8. the English subject teacher;
9. the EMI learner;
10. instructional materials in EMI.

Purposes of EMI

A number of forms of EMI are found, which differ according to the purposes and manner in which it is used (see Table 1).

A number of factors account for the emergence of different forms of EMI (Macaro, 2018). In some contexts it emerged as a legacy of British and American colonialism, where in countries such as Ghana, India, Singapore, and the Philippines, English became the principal language of government and administration and provided a convenient medium of instruction that could be used as an alternative to the provision of public education in a multitude of local and regional languages. In other situations (*Content EMI*) it has often been driven by more pragmatic circumstances, such as the need to attract international students through offering graduate programs in English (e.g. Denmark), or in order to better equip graduates with communication skills needed in a globalized economy (e.g. South Korea). In Europe, through the movement known as CLIL, it was not merely intended to facilitate content learning through English or other languages but became part of a policy to promote bilingualism and "for EU citizens to have competence in their mother tongue plus two community foreign languages" (Llinares et al., 2012: 1), referred to above as *Intercultural EMI*.

Assessment

Assessment in EMI may be based on English learning, content learning, or both (see Table 2).

The extent to which assessment in EMI is content- and/or language-based is described in an account of content-based instruction (Met, 1999) and of CLIL approaches (Coyle et al., 2010). CLIL has been described as a dual-goal approach – "learning language" and "learning through language". In both cases, approaches can be seen along a continuum

Table 1. Categories of different purposes of EMI.

Primary goals	Classification	Example
Learning academic content and skills through English	Content EMI	Tertiary EMI in Hong Kong[1]
Learning academic content and skills in two languages	Bilingual content EMI	Secondary EMI in South Africa[2]
Learning intercultural communication skills	Intercultural EMI	CLIL projects involving students in two countries[3]
Improving proficiency in English	Proficiency EMI	College-level EMI in Japan[4]

Table 2. Categories of different kinds of EMI assessments.

Primary goals	Classification	Example
Assessment based on content mastery	Content assessment	Typical in tertiary EMI[5]
Assessment based on content mastery and language proficiency	Content and language assessment	Typically at the discretion of the content teacher and not usually institutional policy in their EMI[6]
Assessment based on language proficiency	Language assessment	Some CLIL programmes where the language teacher is involved in the design of the CLIL module[7]

of content and language integration. One end of the continuum features those more "content-driven" programmes (e.g. immersion programmes), where assessment is based on content-learning, whereas on the other end are those "language-driven" programmes (e.g. the conventional, often isolated second language (L2) learning lessons) (Lo and Lin, 2019), where assessment is based on language proficiency. This can be represented as the continuum of EMI, as shown in Figure 1 (Thompson and McKinley, 2018: 3).

A similar representation can be found in Lin (2016: 148). Met (1999) provides a useful comparison of content- and language-driven EMI (referred to by Met as content-based instruction) (see Figure 2).

CLIL is similar to immersion programmes found in some English-speaking countries, where students acquire the L2 through a natural learning process (Jäppinen, 2005: 149), fostering bilingualism. Although CLIL and immersion are often used synonymously in foreign language research, Lasagabaster and Sierra (2010) suggest there are differences between CLIL and immersion in terms of classroom language, teacher training, the sociolinguistic context, teaching principles, types of teaching materials, and language achievement. Dalton-Puffer (2007) notes that in some CLIL classrooms, teachers pay special attention to developing students' subject knowledge and L2 communicative competence, while teachers in immersion programmes only teach and assess students' subject knowledge in the target language, with less focus on testing language learning. Finally, students in immersion classrooms are often immigrants, whereas in CLIL classrooms, students are local students sharing the same first language (L1). Coyle et al. (2010: 17) compare content- and language-driven CLIL (see Figure 3).

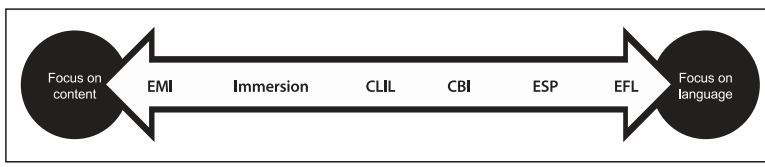

Figure 1. Continuum of EMI (adapted from Thompson and McKinley, 2018: 3).
CBI: content-based instruction; ESP: English for Specific Purposes; EFL: English as a Foreign Language.

CONTENT-DRIVEN CBI	LANGUAGE-DRIVEN CBI
Content is taught in L2	Content is used to learn L2
Content learning is priority	Language learning is priority
Language learning is secondary	Content learning is incidental
Content objectives determined by course goals or curriculum	Language objectives determined by L2 course goals or curriculum
Teachers must select language objectives	Students evaluated on content to be integrated
Students evaluated on content mastery	Students evaluated on language skills/proficiency

Figure 2. Comparison between content-driven content-based instruction (CBI) and language-driven CBI.

CONTENT DRIVEN	LANGUAGE DRIVEN
• Multiple perspectives for study, e.g. modules in history where authentic texts are used in different languages. • Preparing for future studies, e.g. modules that focus on ICT which incorporate international lexis • Skills for working life, e.g. courses that deal with academic study skills equipping learners for further study • Accessing subject-specific knowledge in another language.	• Improving overall target language competence, e.g. through extended quality exposure to the CLIL language • Developing oral communication skills, e.g. through offering a wider range of authentic communication routes • Developing awareness of both first languages and CLIL languages, e.g. those schools that offer 50% of the curriculum in other languages in order to develop a deeper knowledge and linguistics base for learners • Developing self-confidence as a language learner and communicator, e.g. practical and authentic language such as vocational settings • Introducing the learning and use of another language, e.g. lessons that are activity-oriented are combined with language-learning goals, such as in play-oriented 'language showers' for younger learners

Figure 3. Comparison between content-driven CLIL and language-driven CLIL.

Curriculum Models of EMI

The different roles English fulfils in school and university curriculum worldwide has led to many different approaches to EMI. The following are the major curriculum models that we have identified (see Table 3).

The realization of each of the approaches above may vary in different contexts. For example, a transitional approach might involve English as a subject in primary and lower secondary and transition to EMI at secondary. Or when English is the major language of higher education, English may be a subject through to upper secondary followed by a full-time intensive English course focusing both on general English as well as EAP (English for Academic Purposes) (i.e. a bridging course), before students move to university where English is the primary language used at both undergraduate and graduate levels. Teaching modes may also vary considerably. Xu and Harfitt (2019: 213) comment that in Hong Kong "the same subject can be conducted primarily in Chinese and sometimes in English for certain units of the subject in some schools whereas in others, the subject can be taught entirely in English (or in Chinese)". Hence, the quantity of English used in an EMI classroom may vary, ranging from substantial to sporadic, and may also vary according to the amount of spoken versus written English that occurs (Czura and Papaja, 2013).

Introduction of EMI

Depending on local needs, such as the role of languages in the national curriculum, the availability of suitable teachers, materials, and other resources, EMI may be introduced at different points in the educational system (see Table 4).

Early EMI is not common except in post-colonial countries where EMI has a long history, since in other contexts the English proficiency level of young learners is usually insufficient to support EMI. In Hong Kong, the use of EMI may be optional and depend on the school's ranking. In higher education contexts in countries, such as South Korea and Italy, EMI may be used for some subjects and not across the whole curriculum.

Access to EMI

Since a high level of English proficiency is a pre-requisite for learners' successful participation in EMI, different entry requirements may be established (Macaro, 2018) (see Table 5). Tests may serve as a screening device to determine which students need a bridging programme and which can progress to EMI. For an EMI program at a Japanese University, strict language-testing benchmarks for admission are clearly defined. Students must provide a threshold evidence of language proficiency through internationally recognized tests such as the TOEFL (Test of English as a Foreign Language) or IELTS (International English Language Testing System) (Brown, 2014). In one Saudi Arabian University, students are required to take four seven-week learning modules (18 hours) a week and must pass an exam at the end of each module to enter their undergraduate degree program (Alyami, 2020). The use of a preparatory or bridging course is common in many countries such as Turkey and in several countries in the Middle East, where students complete an extended pre-university English course designed by

Table 3. Categories of different EMI curriculum models.

Approach	Classification	Example
All major content subjects except foreign languages taught in English	Single medium	Singapore[8]
Some subjects taught in English and others in another language	Dual medium/partial EMI	Hong Kong[9]
Some subjects taught both in English and another language	Parallel	Denmark, Sweden[10]
Some subjects are initially taught in another language and later taught in English	Transitional	College-level EMI in Japan and China[11]
The content teacher and the English teacher collaborate in teaching content classes	Collaborative	CLIL[12]
Teachers of different disciplines share the teaching	Interdisciplinary	Finland[13]
Content teacher teaches a content course specially designed for L2 students	Sheltered	Some immigrant programmes[14]
A content and language course are linked with the same content base and co-ordinated assignments	Adjunct	CLIL[15]
A preparatory or bridging course prepares students to transition to EMI	Bridging	Turkey, UAE[16]

Table 4. Categories of different EMI introduction models.

Approach	Classification	Example
EMI commences in pre-school or primary school and continues to higher education	Early EMI	Singapore[17]
EMI commences in secondary school and continues to higher education	Middle EMI	Hong Kong[18]
EMI occurs only in higher education	Late EMI	South Korea, Italy[19]

Table 5. Categories of different models for EMI access.

Approach	Classification	Example
Students must demonstrate a proficiency level in English	Selection model	Turkey, Ukraine, Saudi Arabia[20]
Students must complete a pre-university programme prior to EMI	Preparatory model	Turkey, Oman, UAE[21]
Students at tertiary level are offered additional language support	Concurrent support model	Students may take EAP or ESP courses[22]
Teaching may be bilingual initially to enable students to transit to EMI	Multilingual model	China[23]

language specialists who are familiar with academic genres and with the language demands of content subjects. In other contexts (e.g. Hong Kong), tertiary level students who need additional English-language support for EMI are provided with courses in ESP or EAP through a language centre or similar unit.

The English Subject Course and EMI

In EMI contexts, English usually has two roles in the curriculum: as a school subject and as a medium of instruction. These different roles support different targets for the learning of English.

English as a Subject. When English is a subject in the high school curriculum (sometimes referred to as General English, or English Language and Literature), English is the *target of learning.* The goals and content of the English course address the knowledge and skills identified in the national curriculum. The curriculum could include courses such as *Structure of English, Composition, Literatures in English, Public speaking, Creative writing*, and *Drama*, which form the basis for textbooks and other learning resources, as well as the basis for school or national exams. The teacher is normally a language specialist whose responsibility it is to ensure that the expected standards of knowledge, skills, and performance in English are achieved.

EMI. When English is a medium of instruction, English is primarily the *means of learning*. The EMI teacher is a content specialist and his or her role is to facilitate the understanding of content subjects such as math, geography, or science, through English. During this process, the teacher may not prioritize the kind or quality of English either he or she uses, nor that of the learners. Language learning may take place incidentally as a result of EMI, but the teacher will generally assume that learners' development of the necessary language skills is the responsibility of the English course and the English teacher. Lin (2016: 63) comments on the "disconnect" that often exists between content teachers and English-subject teachers:

> Very often teachers and curriculum planners of content subjects and language subjects operate in insulated bubbles without talking to each other as if they do not need to know what is being taught and learnt in each other's subject domains, not to mention collaboration.

Teaching through English may require the content teacher to make use of a range of strategies, including code switching, translanguaging, translation, and a variety of ways of modifying his or her language (Airey, 2012; Basturkman and Shackleford, 2015). However, limitations in the teacher's English could also result in teaching that is

> less flexible and improvisational than [when] they were teaching in their first language. They could not use anecdotes or humor, or deepen students' understanding through thorough and varied explanations. They reduced the amount of content instruction and adopted various coping strategies such as using a transmission-oriented pedagogy, avoiding asking or answering questions, and switching to their L1. (Cheng, 2017: 90)

Learners' priorities in EMI will be to develop disciplinary competence and disciplinary literacy in English. Airey (2011: 13) defines the latter as "the ability to appropriately

participate in the communicative practices of a discipline". This will include successful participation in EMI lessons, including understanding and using discipline specific vocabulary, genres, and registers, and developing the skills needed to complete subject-specific academic tasks in English. In the EMI context, students may have a different "idea" of English, seeing it as a resource they can use to navigate and participate in content lessons, where communicative effectiveness may have priority over other aspects of language learning. Besides, there is a growing trend for the English teacher to also become a content specialist, moving beyond their role as a language specialist. For example, in Hong Kong, English teachers are required to teach English writing across the curriculum, such as in STEM (Science, Technology, Engineering and Mathematics) areas, Liberal Studies, History, Geography, etc. (CDC, 2017).

Relationship Between the Subject Course and EMI. The relationship between the English course and the EMI course may be either relatively independent or exist in a complementary or supportive relationship. For example, the Chinese Standards of English Language Ability (a Chinese adaptation of CEFR (Common European Framework of Reference for Languages)) are described only in relation to general proficiency in English, while the US-based national TESOL standards include standards related to general proficiency as well as those required to achieve academically in the content areas. However, in many contexts, the role of the English subject (either at school or at university) and the extent to which it is intended to support EMI is not always clearly identified. Macaro comments (2018: 26):

> If policymakers or institution managers (school principals, university rectors) really believe that students' English proficiency can be ensured by "immersion" in the language that EMI is expected to provide, then what possible use are the EFL teachers? Are they there to offer a parallel programme of general English that merely imparts an alternative body of knowledge and perhaps creates an alternative student career path to EMI? Are they there to prepare the students before they embark on an EMI programme? Are they there to concurrently supplement the learning of English via EMI when a deficit is spotted?

The following relationships are found between the English subject course and the EMI course (see Table 6).

The EMI Content Teacher

Content teachers may be unilingual in English, may be bilingual and speak English with varied levels of proficiency, and may vary in the extent to which they have received specialized preparation (see Table 7). An obstacle to the successful implementation of EMI in some countries, particularly at tertiary level, has been the lack of content teachers who have the requisite proficiency in English to teach their subjects wholly or partly in English (Cheng, 2017), as well as the lack of appropriate training opportunities for such teachers (see Miller (2020) for an account of principles and pedagogies in teaching content through English). Content teachers with restricted English ability may avoid asking and answering questions, make use of code switching, simplify the disciplinary content of their lectures, avoid interaction with students, and need extra time to prepare lessons. However, from a survey of training programs in three countries for Chinese tertiary EMI

Table 6. Categories of different relationships between the English subject course and EMI courses.

Approach	Classification	Example
The English course is not linked to EMI	Independent	Japan and countries where English was traditionally described as a "foreign language"[24]
The English course includes support for EMI	Supportive	Singapore[25]
The English course covers a range of general academic and literacy skills needed for EMI	English for academic purposes	Courses provided in a university language centre[26]
The English course includes a range of general academic content	Thematic approach	Some bridging courses[27]
The English course prepares the students for disciplinary competence in a specific disciplinary area	English for specific purposes	A university course in English for law[28]

Table 7. Categories of different types of EMI content teachers.

Approach	Classification	Example
Teachers are unilingual speakers of English and do not speak the students' L1	Monolingual teacher	Expat teacher scheme in Hong Kong[29]
Teachers are native speakers of English and also speak the leaners' language(s)	Bilingual native speaker teacher	South Africa[30]
Teachers are proficient speakers of English as L2	English proficient	Some CLIL contexts[31]
Teachers have limited proficiency in English	English restricted	Some CLIL contexts[32]
Teachers must pass a proficiency test to teach EMI or be assessed as having sufficient English proficiency for EMI	English competent	Hong Kong[33]
Teachers receive special English training in using EMI	English certified	Cambridge Assessment Certificate in EMI Skills[34]
Teachers receive special pedagogical training in using EMI	EMI trained	Hong Kong and Singapore[35]
Teachers have taught content subjects in an Anglophone country but not in an EMI context abroad	Experienced content teacher	An expatriate math teacher, teaching in China[36]
Teachers have experiences in EMI	EMI experienced	Hong Kong EMI teachers[37]

teachers, Yuan (2020) found that language proficiency training alone was insufficient as a foundation for EMI instruction, and that "English language proficiency, pedagogical quality, and intercultural communication are the three key factors in the successful implementation of EMI instruction" (Cheng, 2017: 101).

In Hong Kong, non-language subject teachers who wish to teach in EMI secondary schools must achieve Level 3 or above in English Language of the Hong Kong Diploma of Secondary Education Examination, or Grade C or above in English Language in the (now discontinued) Hong Kong Certificate of Education Examination. Content teachers can also take the Cambridge Assessment Certificate in EMI, which is intended for teachers who want to gain an online qualification and who teach and work in the medium of English. The certificate is mainly for university professors, lecturers, tutors, and researchers whose L1 is not English, but who use English to teach students, present academic results, and interact with colleagues. Many higher institutions in Hong Kong provide workshop-based programs to address the local needs and demands of EMI educators. These programs can also form a component of pre-service teacher education programmes for future EMI teachers whose L1 is not English.

Richards and Pun (forthcoming) argue that EMI instruction can be understood as a form of English for specific purposes, requiring the use of specialized communicative skills rather than simply higher levels of "general language proficiency". Hence, benchmarks described in the CEFR or in frameworks such as the Cambridge proficiency exams are insufficient to reflect the particular kind of language skills EMI instruction requires. They suggest the following professional development goals for EMI teachers:

- To develop awareness of how disciplinary specific content, genres and academic tasks influence the nature of EMI teaching and learning in their discipline
- To develop effective teaching strategies that integrate content and language learning in EMI instruction
- To develop an awareness of the use of English in communicating disciplinary content
- To develop abilities to accommodate their EMI instruction to support the learning of students with differing levels of English proficiency
- To learn through collaboration and support in a community of practice

The English Subject Teacher

Teachers of the English subject may also have different language profiles and needs (see Table 8). In many EMI contexts English subject teachers have advanced proficiency levels in English as well as professional qualifications in TESOL. In some countries where English teachers may have restricted English ability, expatriate English teachers teach the English subject, as with some schools in Hong Kong and with the JET (The Japan Exchange and Teaching) program in Japan. In Hong Kong, qualifications are needed to be an English Teacher. There are several qualifications available, such as PGCE, TEFL, IELTS, CELTA, etc.

The EMI Learner

Similarly, learners may have different language profiles as well as different levels of experience of EMI (see Table 9).

Table 8. Categories of different kinds of English subject teachers.

Approach	Classification	Example
Teachers are unilingual native speakers of English from an English-speaking country	English native speaker	Hong Kong, Japan[38]
Teachers are native speakers of English from an English-speaking country and also speak the learner(s)' language(s)	Bilingual English native speaker	International schools in China[39]
Teachers are bilingual and also native speakers of a local variety of English	Bilingual local English speaker	Philippines, India, Singapore[40]
Teachers are proficient speakers of English as L2	English proficient	Germany[41]
Non-native-speaker teachers must pass an English test	English certified	Hong Kong[42]
In-service language training provided for teachers needing a higher level of English proficiency	English enhanced	Malaysia[43]

Table 9. Categories of different kinds of EMI learners.

Characteristics	Classification	Example
Learners must achieve a certain proficiency level in English in order to take part in EMI	English certified	Japan[44]
Learners are unilingual	Unilingual	South Korea[45]
Learners are bilingual or multilingual in languages other than English	Bilingual (–) English	Estonia[46]
Learners may be bilingual or multilingual, including English	Bilingual (+) English	Denmark, Norway[47]
Learners have no previous experience of EMI	Inexperienced EMI	China[48]
Learners have previous experiences of EMI	Experienced EMI	Hong Kong[49]

Learners in EMI contexts may have varying levels of English-language proficiency as well as varying levels of familiarity with EMI. For example, EMI has a long history in Danish and Dutch universities, unlike its status in German, French, and Spanish higher education (Coleman, 2006). Inadequate language proficiency among learners has been found to impact learners in different ways, including difficulties in understanding lectures, problems communicating disciplinary content, as well as requiring more time to complete a course (Galloway et al., 2017). Bilingual EMI at secondary level (e.g. South Africa) often reflects concerns that students' English proficiency is not sufficient to support English-only EMI. The proficiency issue for learners is sometimes addressed in a focus on English across the school curriculum. Lin (2006) analysed teaching practices in Hong Kong science classrooms and proposed a practical bilingual pedagogical approach, where most subject content is delivered in L1, except for key terms and recapping in L2. This would compensate for students' limited proficiency in English and allow them more

time to make the transition from L1 to L2 instruction. In the Canadian context, Cummins (1979) suggested it might take at least three to five years for students to successfully gain the proficiency needed to fully benefit from immersion programmes where English-speaking students are taught their school subjects in French. In the case of EMI, students need to develop the ability not only to *understand* content taught in English but also to *articulate* their understanding of content in English – a capacity that they typically lack at the beginning of an EMI programme, but which they will have developed at a later stage when their English proficiency has improved and they have had increased exposure to full English instruction (Marsh et al., 2000).

Instructional Materials in EMI

Teaching materials often play a crucial role in EMI and may take a variety of different forms (see Table 10). For example, specially designed materials for CLIL courses may include additional learning support, including graphs, tables, photos, and language exercises, along with content knowledge (e.g. Spain). The aim is for the materials to provide easier access to content without overwhelming them with new information (Gray, 2013). Schools known as "bilingual schools" or "international schools" in some countries use curriculum and textbooks developed for schools in the US or an Anglophone country. In China, textbooks published by Anglo-American universities are usually adopted for EMI, and the relative linguistic demand of the available textbooks are often the most important criterion for choosing one over the other (Lei and Hu, 2014). However, materials developed for native speakers may not match learners' language needs, raising problems in testing students' actual learning (Koyama and Bartlett, 2011). Some of the difficulties experienced in introducing EMI in some countries (e.g. Malaysia) have been attributed to lack of suitable materials for content teachers. Lethaby (2003) cites lack of appropriate materials as a major source of problems or elite bilingual schools in Mexico. Lin (2016: 59) points out that in the Hong Kong EMI context there is a "disconnect" between the models of writing presented in the English subject class and textbooks and the type of writing students are expected to use in their content classes. As Lin puts it, ". . .frequently the textbook publishers present the concepts and topics using one set of genres while the assignment and assessment tasks require the students to produce writing in a different set of genres".

Pecorari et al. (2011) observe that whereas in the past, English-language textbooks were often used in contexts where no suitable materials were available in the learners' L1, they are currently often chosen "because teachers identify some positive values in them" (p.314), both in terms of high standards of development and production as well as their role in supporting incidental learning of English.

Using the Typology

The complete typology of EMI is given in Appendix 1. It describes 51 features across 10 curriculum categories, which were identified when comparing different forms and realizations of EMI. We regard the typology as a first step towards addressing the questions posed by Macaro et al. (2018: 68):

Table 10. Categories of different kinds of instructional materials in EMI classrooms.

Approach	Classification	Example
Authentic texts from the content subjects are used	Authentic materials	University ESP or EAP programmes[50]
Specially designed materials in English suitable for teaching content subjects in the EMI context	Designed materials	CLIL[51]
Materials designed for use in English-speaking countries for English native-speaker teachers and students	Native-speaker materials	China, South America[52]
Bilingual materials are used	Bilingual materials	CLIL[53]
Teaching materials are in English, but the course is taught in another language	Cross-language materials	Sweden[54]

> Can the research field, as a collective endeavour, arrive at a model of the different learning situations in which content and language are at issue? Is it possible to identify and then define relatively stable superordinate and subordinate terminology for these learning situations within such a model?

The typology seeks to do this by providing a framework and terminology that can be used to profile the features of EMI in different settings. It can serve as an objective basis for comparing EMI across different contexts and to document how approaches to EMI are being modified or changing. The typology can be used to profile characteristics of EMI and to compare its status in different contexts, as can be seen in Table 11, which illustrates the status of EMI in what Kachru (1985) referred to as Outer Circle (Hong Kong) and

Table 11. Summary of categories of Hong Kong, Turkey, and South Korea.

Location	Hong Kong	Turkey	South Korea
Goals	Content EMI	Content EMI	Content EMI
Assessment	Content assessment	Content assessment	Content assessment
Curriculum model	Single medium	Dual medium	Dual medium
Introduction	Early EMI	Late EMI	Late EMI
Access	Selection model	Preparatory model	Concurrent support model
English course	Supportive	EAP	Independent
EMI teacher	English proficient	English proficient	English restricted
English teacher	English NS (Native-speaker) English proficient	English proficient	English NS (Native-speaker) English proficient
EMI learner	Bilingual (+) English Experienced EMI	Unilingual Inexperienced EMI	Unilingual Inexperienced EMI
Instructional materials	Designed materials	Native-speaker materials	Bilingual materials Native-speaker materials

Expanding Circle (Turkey, South Korea) countries. Table 11 is a summary of these three representative regions or countries to illustrate the profile characteristics of EMI.

The typology also raises issues that need to be considered in designing, implementing, and evaluating EMI approaches and identifies issues for different stakeholders such as school administrators, policymakers, researchers, language teachers, content teachers, teacher trainers, and students. For example:

- How is EMI defined and characterized in the context?
- What level of English proficiency is needed to successfully teach EMI?
- How do teachers and learners navigate teaching and learning in EMI?
- What kind of institutional support is provided for content teachers transitioning to EMI?
- How does EMI affect the learning of academic content as well as English?
- What level of English proficiency is needed to successfully learn through EMI?
- What support is provided for learners transitioning to EMI?
- How do teachers and students respond to EMI?
- What instructional resources are needed to implement EMI?
- What factors account for the success or lack of success of EMI in different contexts?

The typology can thus be used as a navigator to guide curriculum planners as well as content and language teachers to find "suitable" sets of parameters to implement effective EMI teaching according to their cultural and classroom contexts.

An example scenario would be the following:

> A prestigious private university in Indonesia plans to use EMI in its international business diploma in order to ensure that graduates of the program have both good business skills as well as good English communication skills (*Bilingual Content EMI*) and also to build in a competitive edge to their diploma compared to other providers of similar degrees in the region, none of which offer EMI in their programme. After consultation, the institution decides that initially they will use a *Dual Medium* approach, with some modules being taught in English (e.g. Marketing) and some in Indonesian. The program may later switch to *Single Medium*, depending on the effectiveness of EMI and the availability of instructors. In order to be accepted into the program, potential students must achieve a level of 5 on IELTS (*Selection Model*). An intensive three-month English Language course is provided by the university English Language Centre to prepare students for the IELTS test (*English for Academic Purposes*). The centre staff are proficient speakers of English as L2 (*English Proficient*). EMI teachers must be assessed informally as having sufficient proficiency in English for EMI (*English Competent*). A series of workshops are provided for the EMI instructors to prepare them to use English to teach their subjects, following successful completion of which the instructors are able to take part in the program (*English Certified*). A range of textbooks and materials used in similar programs in Australia are selected for the EMI modules (*Native-Speaker Materials*). Assessment throughout the course will be based both on content as well as language proficiency (*Content and Language Assessment*). As the program is being implemented, formative evaluation procedures developed by staff of the English language centre will be used to monitor the transition to EMI and, if necessary, additional support will be provided for both teachers and course participants.

On a final note, Mackey's concluding comment on his typology of bilingual education can also serve as an appropriate conclusion to our intentions here:

> It is only after we have taken all the variables into account and applied appropriate measures of them that we can achieve any degree of certainty in our planning in this important and complex field. Toward this end it is hoped that this preliminary typology may be of some help. (Mackey, 1970: 606)

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Notes

1 University education in Hong Kong is almost exclusively conducted in English. "There was an increase of 340% in EMI offerings in European universities from 2002 to 2007 and the same trend is happening worldwide" (Cheng, 2017: 88).
2 Bilingual EMI at secondary level (e.g. South Africa) often reflects concerns that students' English proficiency is not sufficient to support English-only EMI.
3 A CLIL example is a theme-based module on climate change, for primary school learners, which requires 15 hours of learning time involving class-based communication with learners in another country (Coyle et al., 2010).
4 EMI is increasing in many Japanese universities as a result of the Government's call to internationalize local universities. "MEXT [The Ministry of Education, Culture, Sports, Science and Technology] has stipulated that English instruction should aim at cultivating Japanese students with communicative English abilities" (Leong, 2017). Borg comments, "there is little evidence that EMI in itself increases English proficiency" (Borg, 2016) and countries with accepted higher levels of English do not operate EMI systems in basic education rather than invest in quality teaching of English as subject" (Simpson, 2019: 10).
5 This is typical in tertiary education EMI, where students' mastery of content is priority and "the accuracy with which they use language to communicate may go unnoticed, unchecked, and this, underdeveloped" (Genesee and Lindholm-Leary, 2013: 22).
6 In the US, English language proficiency assessments for English language learners mainly tap into a language construct, but content is also assessed to some extent, particularly at the higher levels of English proficiency (Llosa, 2017).
7 The language teacher takes primary responsibility for the CLIL module. The module involves authentic content learning and communication through the CLIL language, and is scaffolded through language-teacher input (Coyle et al., 2010).
8 Mostly in post-colonial countries, where the societies have been profoundly influenced by

the Western education model (Chua, 2011) and where English as an official language used in multilingual societies to facilitate a shared sense of identity and a shared concept of nationhood (e.g. Singapore).

9 In Hong Kong, math and some science subjects may be taught in English and other subjects in the national language. As the teaching medium is predominantly the local language in primary level, secondary students in partial-EMI classes will experience learning content-based subjects through both local language and English (Poon and Lau, 2016).

10 A graduate course (such as a degree in Veterinary Science) may be available in both English and another language. At school level, this is sometimes referred to as immersion or bilingual education.

11 Often designed as a preparation for tertiary EMI. Full EMI is used only in higher education. An issue with transitional approaches "is the lack of both a proper transition to EMI and use of a specialist pedagogy during the MoI transition period" (Simpson, 2019: 9).

12 This is found in some applications of CLIL where subject and language teachers work together following an integrated curriculum. Both teachers are present. The English teacher in a secondary role assisting when language expertise is needed.

13 A module on the environment may be taught by teachers of math, health, communications, and English. The curriculum, along with existing CLIL methods, aims to not only improve students' English proficiency, but to also introduce important issues related to interdisciplinary areas valued by the whole world (İrican, 2017).

14 Courses designed for immigrants and others from other non-English speaking countries (Pausigere, 2013). The teacher presents the content in a way that is comprehensible to English L2 learners, using language and tasks at an appropriate difficulty level.

15 Adjunct courses often serve as a type of bridging course to prepare students for EMI instruction, and may contain a focus on text types, language, and vocabulary of academic subjects, as well as academic study skills. For example, in pharmacy lecturers in a CLIL approach at a Spanish university, English is usually used for assignments where previously learnt knowledge needs to be applied yet English is rarely taken into consideration to introduce new content (Woźniak, 2013).

16 The main focus is on promoting students' general English skills such as listening, reading, speaking, and writing (Coskun, 2013). This often takes the form of an intensive or a pre-university course designed to help students transition to EMI at university.

17 This approach is not common, except in post-colonial countries where EMI has a long history, since the English proficiency level is usually low and insufficient to support EMI.

18 In Hong Kong the use of EMI may be optional and depend on the school's ranking.

19 EMI may be used for certain subjects and not across the whole curriculum.

20 Tests may serve as a screening device to determine which students need a bridging programme and which can progress to EMI. In a Saudi Arabian University, students are required to take four seven-week learning modules (18 hours) a week and must pass an exam at the end of each module to enter their undergraduate degree program (Alyami, 2020).

21 The course is an intensive bridging program to prepare students for EMI at tertiary level.

22 Courses are designed by language specialists who are familiar with academic genres and with the language demands of content subjects.

23 Only possible if all students speak the same L1.

24 Often described as "General English", the course covers a range of subjects from the domain of English, including grammar, the four skills, and in some cases poetry, drama, literature, and composition.

25 The English course covers both general English as well as academic and language skills needed in the content subjects. In some countries, the strand dealing with English for the

content subjects is sometimes referred to as "language across the curriculum".

26 A university language centre typically offers courses that develop skills in the commonest text types and tasks that occur in the content subjects, as well as study skills.

27 When used as a bridging course, the focus of the course is general proficiency; however, the topics in the course may be drawn from the content courses. The textbook series *Cambridge English for Schools* followed this approach.

28 The course is based on the genres, text types, skills and discourse of an academic subject (Sarmento et al., 2018).

29 An "Anglophone" school in China for Chinese students, but where classes are taught by monolingual, usually native speakers of English (An et al., 2019). Students in these schools may plan to transition to tertiary education in an Anglophone country.

30 In South Africa (Eastern Cape), over 80% of teachers and learners speak Xhosa as their home language. Teachers and student in schools use Xhosa as lingua franca, with the use of English confined to the classroom (Probyn, 2006; Probyn et al., 2002). EMI aims to promote "additive bilingualism", maintaining home languages while providing access to and the effective acquisition of additional languages.

31 In observations of EMI classes in a Chinese university, teachers rarely switched to the L1 (although with considerable differences among the teachers) and mostly only to explain both simple and complex concepts in their academic disciplines (Macaro et al., 2020). Students and teachers can interact and express ideas in English fluently, but they still use their L1 to supplement their interactions occasionally when referring to examples and direct translations.

32 Many CLIL teachers in Europe are content specialists but may have restricted English ability, which may affect students' learning. For example, results from Sweden CLIL research are not equally encouraging. One of the factors – classroom interaction – is important for both students' language development and subject learning (Sylvén, 2013). However, the amount of classroom interaction is more limited in CLIL classes than in non-CLIL classes.

33 In Hong Kong, non-language subject teachers wishing to teach in EMI secondary schools should have Level 3 or above in English Language of the Hong Kong Diploma of Secondary Education Examination, or Grade C or above in English Language of the defunct Hong Kong Certificate of Education Examination.

34 Intended for teachers who want to gain an online qualification who teach and work in the medium of English. The certificate is mainly for university professors, lecturers, tutors, and researchers whose L1 is not English, but who use English to teach students, present academic results, and interact with colleagues.

35 Many higher institutions provide workshop-based programs to address the local needs and demands of EMI educators. These programs can also form a component of pre-service teacher education programmes for future EMI teachers whose L1 is not English.

36 A Canadian teacher of a content subject in Canada who now teaches his/her subject in an EMI context in a non-Anglophone country such as China.

37 Teachers in elite EMI secondary schools in Hong Kong typically teach the top tier of students in terms of English and academic backgrounds. An assumption is that teachers who have experience in EMI will have developed the ability to teach the language required in the content subject.

38 In some contexts, expatriate English teachers teach the English subject, as with some schools in Hong Kong and the JET program in Japan.

39 Teachers tends to use the learner's language for direct translation and in relation to daily experience.

40 Form of EMI provision varies among the teachers working in different types of institutions.

41 In lessons, teachers have above-average competence in English and a special interest in intercultural communication (Agudo, 2012).
42 In Hong Kong, qualifications are needed to be an English Teacher. There are several qualifications available, such as PGCE, TEFL, IELTS, CELTA, etc.
43 Many in-service professional development programmes are available, providing support in the knowledge and skills needed in teaching English, often provided by local higher institutions.
44 For the English-taught program (ETP) at a Japanese University, strict language-testing benchmarks for admission are clearly defined. Students must provide a threshold evidence of language proficiency through internationally recognized tests such as the TOEFL or IELTS (Brown, 2014).
45 Due to the late introduction of EMI (i.e. at tertiary level), leaners' inadequate English ability may limit their learning in EMI (Kim, 2017).
46 Some students may be bilingual in Estonian and Russian but with limited or no English.
47 In Nordic countries, students face few problems in learning through EMI since most have acquired English both from instruction and informally (Airey et al., 2017).
48 Some high schools in China use EMI and academic subjects taught partly or entirely in English; however, many students experience difficulty due to their inexperience with EMI.
49 Since there is an early introduction of English in the curriculum, students may encounter less challenges in learning through full EMI.
50 These may sometime be adapted or used in conjunction with bilingual glossaries and study guides. The aim is to enrich learners' English exposure and production in EFL contexts (Ahmed, 2017).
51 Designed materials for CLIL courses may include additional learning support, including graphs, tables, photos, and language exercises, along with content knowledge (e.g. Spain). The aim is for the materials to provide easier access to content without overwhelming them with new information (Gray, 2013).
52 Schools known as "bilingual schools" or "international schools" in some countries use curriculum and textbooks developed for schools in the US or an Anglophone country. In China, "textbooks published by Anglo-American universities are usually adopted for EMI, and the relative linguistic demand of the available textbooks are often the most important criterion for choosing one over the other" (Lei and Hu, 2014). However, materials developed for native speakers may not match learners' language needs, raising problems in testing students' actual learning (Koyama and Bartlett, 2011).
53 CLIL courses may present subject-based content in two languages (Coyle et al., 2010; Richards and Rodgers, 2014). CLIL includes courses at primary and secondary level.
54 "In many countries (including Sweden), the textbook is increasingly in English, even in courses which are otherwise taught in the local language" (Pecorari et al., 2011), presenting difficulties for students who do not have advanced-level reading skills in English (Ward, 2001).

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Appendix 1. A typology of EMI.

	Primary goals	Classification
Purposes	1.1 Learning academic content and skills through English	Content EMI
	1.2 Learning academic content and skills in two languages	Bilingual content EMI
	1.3 Learning intercultural communication skills	Intercultural EMI
	1.4 Improving proficiency in English	Proficiency EMI
Assessment	2.1. Assessment based on content mastery	Content assessment
	2.2. Assessment based on content mastery and language proficiency	Content and language assessment
	2.3. Assessment based on language proficiency	Language assessment
	Approach	**Classification**
Curriculum models	3.1. All major content subjects except foreign languages taught in English	Single medium
	3.2. Some subjects taught in English and others in another language	Dual medium
	3.3. Some subjects taught both in English and another language	Parallel medium
	3.4. Some subjects initially taught in another language and later taught in English	Transitional
	3.5. The content teacher and the English teacher collaborate in teaching content classes	Collaborative
	3.6. Teachers of different disciplines share the teaching	Interdisciplinary
	3.7. Content teacher teaches a content class specially designed for second language students	Sheltered
	3.8. A content and language course are linked with the same content base and co-ordinated assignments	Adjunct
	3.9. A preparatory or bridging course prepares students to transition to EMI	Bridging
Introduction of EMI	4.1. EMI commences in pre-school or primary school and continues to higher education	Early EMI
	4.2. EMI commences in secondary school and continues to higher education	Middle EMI
	4.3. EMI occurs only in higher education	Late EMI

(Continued)

Appendix 1. (Continued)

	Approach	Classification
Access to EMI	5.1. Students must demonstrate a proficiency level in English	Selection model
	5.2. Student must complete a pre-university program prior to EMI	Preparatory model
	5.3. Students at tertiary level are offered additional language support	Concurrent support model
	5.4. Teaching may be bilingual initially to enable students to transition to EMI	Multilingual model
The English course and EMI	6.1. The English course is not linked to EMI	Independent
	6.2. The English course includes support for EMI	Supportive
	6.3. The English course covers a range of general academic and literacy skills needed for EMI	English for academic purposes
	6.4. The English course includes a range of general academic content	Thematic approach
	6.5. The English course prepares students for disciplinary competence in a specific disciplinary area	English for specific purposes
The EMI teacher	7.1. Teachers are unilingual speakers of English and do not speak the students' L1	Monolingual teacher
	7.2. Teachers are native speakers of English and also speak the learners' language(s)	Bilingual English NS
	7.3. Teaches are proficient speakers of English as L2	English proficient
	7.4. Teachers have limited proficiency in English	English restricted
	7.5. Teachers must pass a proficiency test to teach EMI or be assessed as having sufficient English proficiency for EMI	English competent
	7.6. Teachers receive special English training in using EMI	English certified
	7.7. Teachers receive special pedagogical training in using EMI	EMI trained
	7.8. Teachers have taught content subjects in an Anglophone country but not in an EMI context abroad	Experienced content teacher
	7.9. Teachers have experience in EMI	EMI experienced

(Continued)

Appendix 1. (Continued)

	Approach	Classification
The EMI subject teacher	8.1. Teachers are unilingual native speakers of English from an English-speaking country	English NS
	8.2. Teachers are native speakers of English from an English-speaking country and also speak the learner(s)' language(s)	Bilingual English NS
	8.3. Teachers are native speakers of a local variety of English	English NS
	8.4. Teachers are proficient speakers of English as L2	English proficient
	8.5. Non-native-speaker English teachers must pass an English test	English certified
	8.6. In-service language training provided for teachers with needs for higher levels of English proficiency	English enhanced
The EMI learner	9.1. Learners must achieve a certain proficiency level in English in order to take part in EMI	English certified
	9.2. Learners are unilingual	Unilingual minus English
	9.3. Learners are bilingual or multilingual in languages other than English	Bilingual minus English
	9.4. Learners may be bilingual or multilingual, including English	Bilingual plus English
	9.5. Learners have no previous experience of EMI	Inexperienced EMI
	9.6. Learners have previous experience of EMI	Experienced EMI
Instructional materials in EMI	10.1. Authentic texts from the content subjects are used	Authentic materials
	10.2. Specially designed materials in English suitable for teaching content subjects in EMI context	Designed materials
	10.3. Materials designed for use in English-speaking countries for English native-speaker teachers/ students	Native-speaker materials
	10.4. Bilingual materials are used	Bilingual materials
	10.5. Teaching materials are in English, but the course is taught in another language	Cross-language materials