

Systematic Review

Challenges to Internationalisation of University Programmes: A Systematic Thematic Synthesis of Qualitative Research on Learner-Centred English Medium Instruction (EMI) Pedagogy

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Citation: Ismailov, M.; Chiu, T.K.F.; Dearden, J.; Yamamoto, Y.; Djalilova, N. Challenges to Internationalisation of University Programmes: A Systematic Thematic Synthesis of Qualitative Research on Learner-Centred English Medium Instruction (EMI) Pedagogy. *Sustainability* **2021**, *13*, 12642. <https://doi.org/10.3390/su132212642>

Academic Editors: Lawrence Jun Zhang and Vincent T. Greenier

Received: 27 September 2021
Accepted: 12 November 2021
Published: 16 November 2021

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Abstract: As many universities in non-Anglophone countries have committed to internationalising their academic programmes, more content courses in Arts and Sciences are being taught in English. When content courses are taught in English in a country where English is not the first language, this is called English Medium Instruction (EMI). Using specific country cases, previous studies have confirmed that an EMI course can pose many challenges to the learning of course content by students. To date, there have been few attempts to examine these challenges through a large-scale qualitative prism, which would be useful for gaining new insights in order to inform policy as well as classroom interventions. In this systematic thematic synthesis we have aimed to identify the obstacles to implementing learner-centred pedagogy in EMI tertiary programmes, focusing on student perspectives. The Critical Appraisal Skills Programme (CASP) and Consolidated Criteria for Reporting Qualitative Studies (COREQ) were used to appraise and synthesise 40 empirical articles. The articles included 1769 participants in 20 non-Anglophone countries and jurisdictions. The participants were both local and international non-native English-speaking students enrolled in EMI courses. The synthesis yielded 46 descriptive themes stratified into six analytical domains. The suggested domains are meta/linguistic, instructional, meta/cognitive, socio-cultural, affective, and institutional obstacles. They suggest that students in different regions faced quite similar challenges in their EMI courses. The challenges consist of inadequate use of English by students and lecturers, and a lack of student-centred pedagogy, particularly in teacher–student and student–student interactions. The findings of most learner-centred EMI studies revealed that the main challenges came from English comprehension (the first three suggested domains); fewer studies included factors related to the learning environment (the last three domains). This review can inform university administrators, teaching staff and researchers engaged in internationalising higher education and aid in designing appropriate EMI programmes that offer better learner-centred educational experiences.

Keywords: English Medium Instruction; learner-centred pedagogy; challenges; internationalisation; higher education; systematic thematic synthesis; qualitative research

1. Introduction

A recent global survey of 907 higher education (HE) institutions from 126 countries has revealed that internationalisation is becoming more common around the world [1], with more universities, especially in non-English speaking countries, prioritising the future sustainability of tertiary programmes offered in English [2]. Sustainability is becoming an important measure in assessing the long-term effectiveness of English-medium pro-

grammes on many levels, from sustaining student learning and classroom engagement to sustaining faculty training and certification [3–6].

Defined as ‘the use of the English language to teach academic subjects (other than English itself) in countries or jurisdictions in which the majority of the population’s first language is not English’ [7], English Medium Instruction (EMI) has been shown to be a ‘growing global phenomenon’ [2] as well as ‘the most significant trend in educational internationalisation’ [8] and it ‘is developing at such a remarkable speed that it is often beyond the control of policymakers and educational researchers’ [7]. In higher education, students’ perspectives and experiences have been extensively researched, with findings informing professional development programmes, pedagogical interventions, and institutional planning [9–13].

To date, a few studies have explored the key outcomes of EMI for students, such as second language (L2) improvement and content learning [9–12,14]. These studies have contributed to the growing evidence that EMI may pose significant challenges to students whose first language is not English [13,15]. Despite such important efforts to assess and highlight the role of L2 in content learning (with some studies pointing to the context-specific nature of implementation [16,17]), from the growing body of learner-focused literature the impression may be given that success in EMI is mainly about students’ linguistic needs and metalinguistic affordances. Even though there are comparatively fewer studies that address non-linguistic challenges, these demonstrate that sustaining effective EMI pedagogy might require more systematic approaches to assessing learners’ needs and concerns [13].

Considering that the advantages of learner-centred pedagogy are well established within HE research [18–23], it is surprising that it has not been thoroughly addressed by EMI scholars. Researchers exploring the classroom experiences of EMI learners have focused on specific pedagogical interventions within specific geographic, disciplinary, or institutional contexts [24–27], rather than taking a comprehensive approach to exploring what makes an EMI classroom learner-centred. Perhaps for the same reason, Macaro and his colleagues in their influential review stressed the urgency of understanding the ‘accommodation needs’ of EMI students in order to ensure that they are effectively learning the course content [9]. In his book, Macaro [7] discusses the merits of implementing constructivist pedagogy in an EMI classroom, a process he refers to as ‘quality interaction in pedagogy’ and which we will further discuss in the next section.

Moreover, while numerous models, types, and characteristics of EMI [7,28–30] have been proposed, an in-depth qualitative overview of student experience beyond linguistic issues is nonetheless lacking. Exploring the pedagogical practices of lecturers that university students themselves find problematic is necessary in order to align the goals of educational internationalisation and EMI policy to student expectations. In addition, exploring the obstacles to ‘learner-centred’ EMI pedagogy from the perspective of learners in HE is critical for assessing the validity of existing ‘success’ metrics [10,11,31].

The previous reviews to which we are able to compare our study were conducted by Macaro et al. [9], Williams [32], and Kremer and Valcke [33]. The review of EMI done by Macaro et al. [9] is perhaps the most renowned study in this area, and investigated the beliefs of university teachers and students and provided evidence on whether EMI was of benefit to developing English proficiency without associated detrimental effects on content learning. Williams, on the other hand, reviewed research with reference to the South Korean context [32], while Kremer and Valcke’s conference paper reviewed studies published before 2013 to examine didactic strategies employed by teachers and students in EMI classrooms [33]. Although all three studies provide useful insights into EMI research and practice, none of the papers shed light on the challenges of learner-centred EMI pedagogy from a student perspective, nor do they confine their methodologies to primary qualitative studies as we have in this study. Because of the unique systematic synthesis methodology we have adopted, the present study approaches EMI from a different perspective.

Along with teacher-oriented EMI studies, learner-focused research has been dominated by large-scale quantitative data [7]. While quantitative data provide numerically more accurate insights into certain variables and relationships within EMI, such models often omit microfactors that may be statistically insignificant, but contextually important. Qualitative studies, on the other hand, can help lecturers, researchers, and administrators identify what learner-centred pedagogy means to students; a considerable number of such studies has indeed been conducted. These studies are often not given the attention they deserve, partly because each has been conducted within a specific context, sample or research problem. To gain a more comprehensive view of learner-centred EMI pedagogy, our aim in this study is to combine the results of multiple qualitative studies into a synthesis that offers a range of meanings, experiences, and opinions provided by student participants in a variety of EMI contexts. The depth, scope and rigour of our thematic synthesis compared to a single study may also have greater potential to influence EMI policy and inform pedagogical practice [34].

2. Conceptual Framework and Literature Review

2.1. Learner-Centred Pedagogy in HE

Learner-centred pedagogy acknowledges students' diverse needs and abilities as well as individual preferences for constructing and re-constructing content knowledge. In a learner-centred classroom, lecturers prioritise students' understanding rather than rote mastery of content subjects [35]. Although in the HE literature the term is not always used with consistent meaning [36,37], many authors have agreed that accompanying monologic lectures with interactive and innovative teaching methods improves learner engagement, critical thinking, motivation, and content learning. In addition, such conceptualisations (as shown in Table 1) have emphasised the importance of teacher–learner reciprocity, collaboration, active learning, quality feedback, intellectual challenge [18,21,23], students' responsibility for learning, clear evaluation purpose and processes [19,21,23,38], engaging learners in solving real-world problems, application and demonstration of new knowledge, encouraging critical thinking [20,23,38], stimulation of student interest and motivation, learner control and autonomy [21,23,38], helping students construct meaning through relevant activities, lecturers' systematic alignment of teaching and learning activities [22,38], building on students' existing knowledge and skills, using dialogic teaching to support 'visible' learning [23], students and teachers as co-learners, and student–student interaction [38].

Table 1. Learner-centred pedagogical frameworks in HE contexts.

Pedagogical Frameworks in HE	Key Attributes
<i>Principles of good practice in higher education</i> Chickering & Gamson (1987) [18]	<ul style="list-style-type: none"> • Contacts among students and faculty. • Reciprocity and cooperation among students. • Active learning. • Prompt and quality feedback. • Optimal time on task. • High expectations. • Accepting diverse talents and ways of learning.
<i>Keys to change toward learner-centred practice</i> Weimer (2002) [19]	<ul style="list-style-type: none"> • Shifting the balance of power in the classroom. • The function of content teaching. • Changing role of the teacher. • Students' responsibility for learning. • Clear evaluation purpose and processes.
<i>First principles of instruction</i> Merrill (2002) [20]	<ul style="list-style-type: none"> • Learners are engaged in solving real-world problems. • Current knowledge is activated as a basis for new knowledge. • New knowledge is demonstrated to the learner. • New knowledge is applied by the learner. • New knowledge is integrated into the learner's world.

Table 1. Cont.

Pedagogical Frameworks in HE	Key Attributes
<i>Principles of effective teaching in higher education</i> Ramsden (2003) [21]	<ul style="list-style-type: none"> • Clear explanations of complex subjects and stimulation of student interest. • Concern and respect for students and student learning. • Appropriate assessment and feedback. • Clear goals and intellectual challenge. • Independence, control, and engagement. • Learning from students
<i>Framework of ‘Constructive Alignment’</i> Biggs & Tang (2007) [22]	<ul style="list-style-type: none"> • Students construct meaning through relevant activities. • Teacher systematically aligns the teaching and learning activities (curriculum, learning outcomes, teaching methods, assessment tasks) to each other.
<i>Post-2015 standards of learner-centred education</i> Schweisfurth (2015) [23]	<ul style="list-style-type: none"> • Engaging lessons motivating students to learn. • Teacher–learner mutual respect and common ground. • Building on students’ existing knowledge and skills. • Dialogic teaching to support ‘visible’ learning. • Curriculum is relevant to learners’ lives. • Developing skills such as learner autonomy and critical thinking as learning outcomes. • Assessment processes are meaningful for those being assessed so that their learning is improved by it.
<i>Key elements of student-centred learning</i> Jacobs, Renandya & Power (2016) [38]	<ul style="list-style-type: none"> • Students and teachers as co-learners. • Student–student interaction. • Learner autonomy. • Focus on meaning. • Curricular integration. • Diversity. • Thinking skills. • Alternative assessment. • Learning climate. • Motivation.

2.2. Learner-Centred Pedagogy in HE and EMI

Previous research on students’ EMI experiences suggests that many factors can affect the effectiveness of learning content in English in higher education. The existing literature on student-perceived challenges in an EMI classroom can be broadly categorised into three groups. The first group includes studies exploring macro-level factors, such as national as well as institutional policies and practices that guide the implementation of EMI and have an effect on both lecturer and student experiences. Previous studies expose gaps that exist between both national- and institutional-level EMI policies and classroom-level practices [7,39]. These studies highlight contextual constraints on policy implementation [29], and called for more careful curriculum evaluation to inform context-sensitive ways to implement EMI policy [9,16]. Other studies emphasise the importance of teacher training and qualification [7,40] and institutional support for interdisciplinary as well as language instructor–content lecturer collaborations in universities that have increasing linguistically and culturally diverse student populations [41,42], as well as measures to improve students’ preparedness for EMI through effective design and delivery of EAP and ESP courses [43].

The second group of studies tend to focus on meso-level factors that include a wide range of pedagogical and linguistic challenges faced by students. These challenges are often externally driven and are associated with EMI lecturers’ choice of pedagogical strategies and their linguistic competence to provide an inclusive and effective EMI experience. For example, many studies focused on the impact of codeswitching, translanguaging, and bi/multilingual pedagogies on students’ learning and satisfaction [7,10,44–46]. Studies have also provided compelling evidence regarding the multidimensionality of EMI, as seen through different kinds of assessment approaches [28], differences between content-driven

and language-driven EMI [28], and lecturers' profiles, backgrounds, needs, and teaching styles [27,39,47,48].

The third group of studies look at micro-level factors to emphasise a range of personal and externally driven issues shaping students' general satisfaction and learning outcomes in EMI courses. For example, studies have looked into the impact of linguistic and meta-linguistic competence for learning success [15,25,40,49–51] and numerous other factors associated with learners' prior knowledge and schema building [52,53], previous experiences with EMI [31], skills in collaborative and cross-cultural learning [26,54], motivational and socio-emotional regulators [11,55,56], and other issues.

While it is evident that the learner-centric approach can potentially increase EMI students' success and satisfaction rates, to date there have been few attempts in the EMI literature to systematically explore learner-centred pedagogy. One of the confounding factors is that in addition to content learning, EMI brings a critical 'E' factor into play, that is, English. A recently proposed working definition of an EMI course [57] highlighted the critical role of language in designing and delivering content courses, by suggesting that:

"For EMI courses, the delivery of content, whole-class interaction, the learning materials, and the demonstration and assessment of learning outcomes (such as oral presentation, assignments, or tests) should be in English. Other languages may be used in a principled and limited way in specific circumstances, for example, student-to-student and teacher-to-student interaction during pair work and group work may sometimes take place in languages other than English to aid mutual comprehension and idea generation. However, students should be asked to present their discussion outcomes in English and lecturers should ensure that at least 70% of class communication takes place in English".

This conceptualisation has been influenced by the works of other scholars who previously proposed that interaction in the EMI classroom was 'probably the most significant pedagogical resource that contributes to learning' [7]. For instance, stemming from the interaction theories within the Second Language Acquisition (SLA) research, Macaro's model refers to comprehensible input, incidental learning, negotiation of meaning, pushed output, and feedback as key ingredients of an interactive EMI process. Perhaps acknowledging that the use of these strategies may not necessarily indicate the presence of learner-centred pedagogy in an EMI classroom, and based on socio-cultural and constructivist theories of learning, Macaro further developed the notion of 'quality interaction in pedagogy' [7]. Although he did not use the term 'learner-centred', one can observe that the purpose of 'quality interaction' is not only to raise lecturers' awareness of students' diverse abilities and needs in an EMI classroom, but also to help lecturers design and deliver less monologic and more dialogic and interactive content courses in English.

Macaro's measures of quality interaction, as shown in Figure 1, reflect the key role of a constructivist pedagogy in EMI effectiveness by promoting 'the student as an active participant in learning an academic subject, moving from preconceptions and misconceptions of how certain (for example, scientific) phenomena occur to a modification of those conceptualisations as a result of new experience, such as an interaction in the classroom' [7]. Recently, this model has been tested in part in a study involving seven universities in Turkey, revealing significant differences in terms of the proportion of first language (L1) use and teacher–student interaction by university type, with less L1 use and interaction found in EMI classes at elite universities [30]. The study identified four variations of EMI pedagogical implementation with respect to language use and interaction: (1) English dominant and teacher-centred; (2) English-dominant interactive; (3) L1-dominant interactive; and (4) L1-dominant and teacher-centred. While such contributions to the research of learner-centred EMI pedagogy are significant, there is still room for broader empirical validation of such practices and the existing interrelationships within different student populations, disciplines, and institutions. Therefore, this study attempts to provide in-depth qualitative insights into the topic by thematically synthesizing student opinion and perceived challenges from a large body of primary qualitative research.

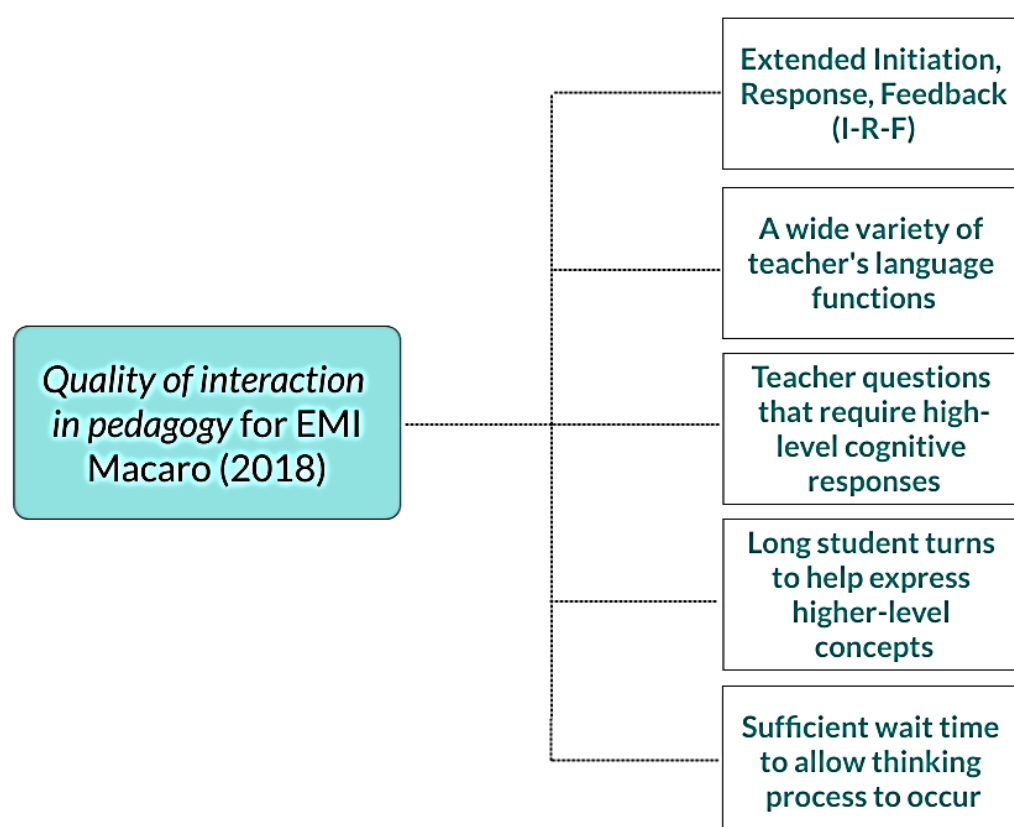


Figure 1. Quality of interaction in EMI pedagogy (adapted from Macaro, 2018 [7]).

Consequently, the main research question that this study addresses is: What are the challenges faced by students enrolled in internationalising universities in different countries and what are the students' views about the obstacles to implementing learner-centred pedagogy in English-medium academic courses?

3. Materials and Methods

This systematic thematic synthesis study aimed to identify the challenges in using learner-centred pedagogy in EMI tertiary programmes from a student perspectives. We used an Enhancing Transparency in Reporting the Synthesis of Qualitative Research (ENTREQ) approach to identify the essential articles for analysis and to report the results [58]. This approach suggested three main processes for article identification: literature search and selection (see Figure 2), quality appraisal, and data synthesis.

3.1. Literature Search and Selection

Comprehensive searches were carried out in the Web of Science's Core Collection, which included Social Sciences Citation Index (SSCI), Arts and Humanities Citation Index (AHCI), Emerging Sources Citation Index (ESCI), Conference Proceedings Citation Index (CPCI), Book Citation Index (BCI), as well as in the Scopus, ERIC, and Google Scholar databases. Given the systematic scope of the study, we conducted additional searches in the ProQuest Dissertations and Theses database, which indexes abstracts and provides full-text access to dissertations and theses. We also searched the reference lists of relevant publications using forward and backward snowballing methods [59]. The search did not set restrictions on the language of publication. Quantitative studies and systematic reviews were excluded.

Author 1 (M.I.) used Boolean rules to build search strings consisting of multiple combinations of search terms. These search terms were further refined and discussed among the team of researchers (M.I., T.K.F.C., Y.Y., N.D.) and grouped into four broad

categories, as shown in Table 2. We used 32 search string combinations in total. Examples of some of the search strings used are given below.

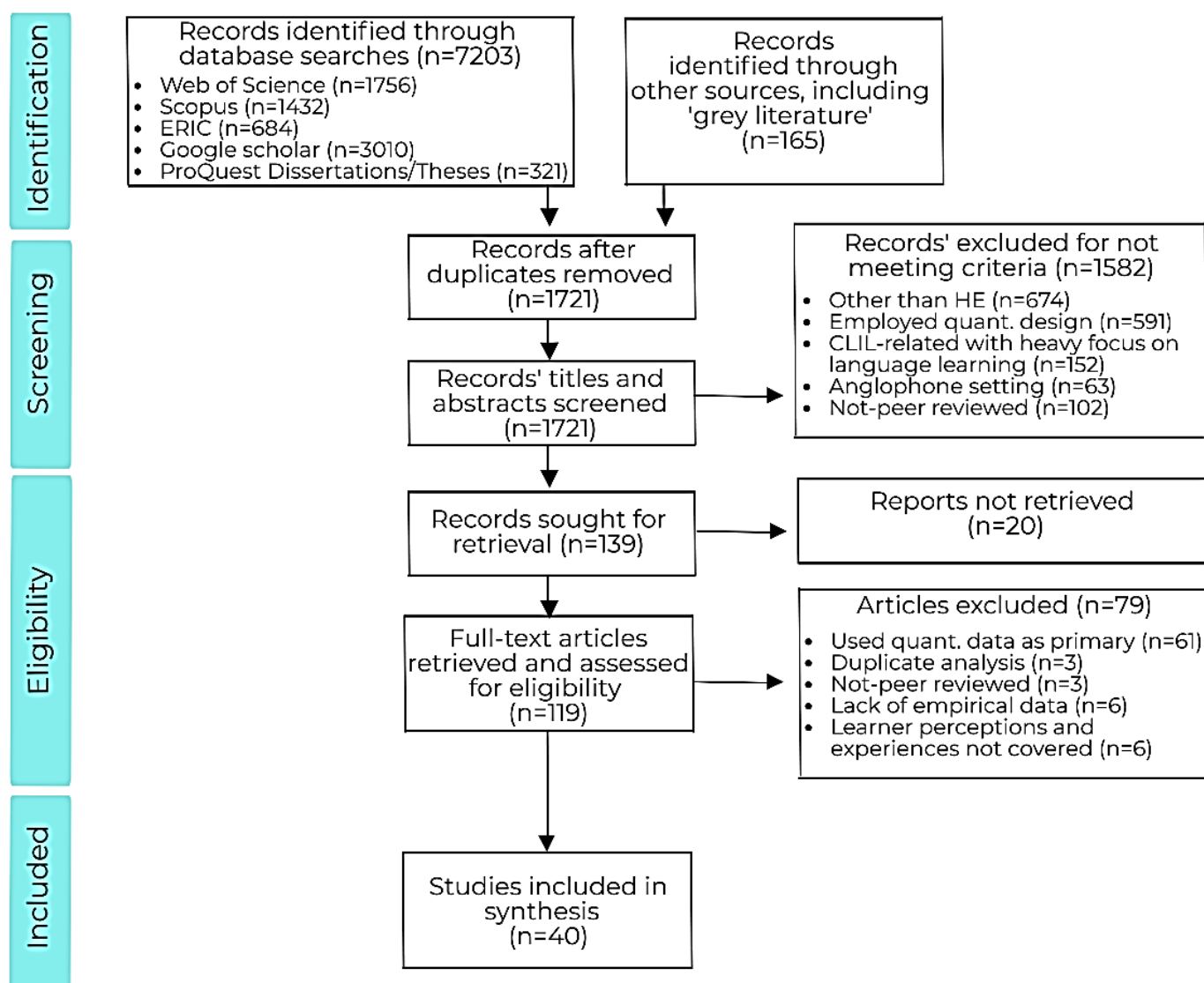


Figure 2. The flow diagram of selection and screening processes.

Table 3 shows the criteria which were used to guide the literature search and selection. Three authors (M.I., Y.Y., N.D.) independently screened the titles and abstracts, removed those that did not meet the inclusion criteria, and assessed full-text versions of the selected studies for eligibility.

- TOPIC: (English medium instruction) AND TOPIC: (teaching) AND TOPIC: (students) AND TOPIC: (perceptions) AND TOPIC: (university).
- TOPIC: (EMI) AND TOPIC: (pedagogy) AND TOPIC: (students) AND TOPIC: (views) AND TOPIC: (higher education).

Table 2. Terms and concepts used as search strings.

Category	Possible Alternatives to be Used in Search Strings
Learning environment	(English medium instruction EMI English-medium instruction English medium of instruction English as the medium of instruction English as a medium of instruction English language as medium of instruction English-medium education English-medium higher education English-medium teaching English-medium university English-medium courses English-medium programmes English-medium programs English as the lingua franca medium of instruction English medium content classes) (CLIL Content and Language Integrated Learning Content-Language Integrated Learning Content-Based Instruction Content-Based Language Teaching Immersion Education English for Specific Purposes English for Academic Purposes)
Pedagogical approaches	(pedagogy pedagogical pedagogic teaching classroom-based interactive didactic learner-centred student-centered student-centred teacher-centered teacher-centred)
Participants	(students learners needs perceptions views challenges experiences obstacles difficulties)
Educational level	(higher education university college tertiary education)

Table 3. Filtering criteria for search, selection, and quality appraisal.

Type	Category	Definition
Search and selection	Participants	Literature addressing student needs when studying academic subjects using English; learners' perspectives on challenges and obstacles (as opposed to faculty or administrator views).
Search and selection	Learning environment	Literature entitled or described as Content and Language Integrated Learning (CLIL) or Immersion, but nonetheless following the 'Country' criterion below.
Search and selection	Publication date	Published or made accessible from database inception to February 2021.
Selection	Country	Literature presenting studies of which the whole research or significant parts were conducted in countries or jurisdictions in which the first language of the population was not English. (For example, the synthesis included studies from South Africa, which may fairly be considered an English-speaking country. However, according to official information (https://www.gov.za/ , accessed on 21 April 2021), the country has 11 official languages, with over one quarter (25.3%) of population speaking isiZulu).
Selection	Education phase	Literature findings focus on students in higher education: undergraduate, graduate, and doctoral levels, excluding professional faculty and continuing education.
Selection	Document type	Published (e.g., journal articles, books, and book chapters which did not duplicate journal articles) and 'grey literature', that is, unpublished or published in non-commercial forms (e.g., conference proceedings, dissertations, and reports).
Selection	Language	No restrictions

3.2. Quality Appraisal

The comprehensiveness of the reporting in each primary qualitative study was assessed in two stages. Initially, independent reviewers (M.I., Y.Y., N.D.) used the CASP Qualitative Studies Checklist [60], a set of ten items designed to be answered with 'yes'/'can't tell'/'no' when critically assessing the comprehensiveness of each article. The studies that received at least 8 out of 10 'yes' answers by two independent reviewers as well as the ones that used interviews and focus groups to examine student experiences were then subjected to an additional check using the Consolidated Criteria for Reporting Qualitative research (COREQ) [61]. This framework allows reviewers to identify explicit and comprehensive reporting of studies that used in-depth interviews and focus groups to collect data and evaluate the transferability of the findings to their own settings. The COREQ's 32 items are grouped into three domains: (i) research team and reflexivity; (ii) study design; and (iii) data analysis and reporting. Three authors (M.I., Y.Y. and N.D.) assessed each eligible study independently using the COREQ framework and resolved any disagreements through discussion. The authors followed a four-stage approach (identification, screening,

eligibility, and inclusion [62]) to select articles for further analysis; this process is illustrated in Figure 2.

3.3. Data Synthesis

This study used Thomas and Harden's systematic thematic synthesis approach to analyse 40 selected articles [63]. This approach integrates the findings of multiple qualitative studies; the following five steps were used in the analysis:

1. All included papers were read thoroughly by three authors.
2. The first author then extracted and summarised the documents regarding their definition and context of EMI, country of research, sample size, characteristics of academic subjects, study design, methods of analysis, and key research questions (see Table 4).
3. The full-text articles and their descriptors were then assessed independently by three researchers (M.I., Y.Y., N.D.) using the CASP Qualitative Studies Checklist [60] and the Consolidated Criteria for Reporting Qualitative research (COREQ) [61], as mentioned earlier.
4. Data from the results sections of the articles were independently and inductively coded by two authors (M.I., Y.Y., N.D.) line-by-line using MAXQDA Ver. 2020TM, a software programme designed for computer-assisted qualitative and mixed-method data, text, and multimedia analysis (see Figure 3).
5. The results of open coding were organised into descriptive themes. Researchers (M.I. and T.K.F.C.) then compared the developed themes inductively and established the primary analytical domains [63].

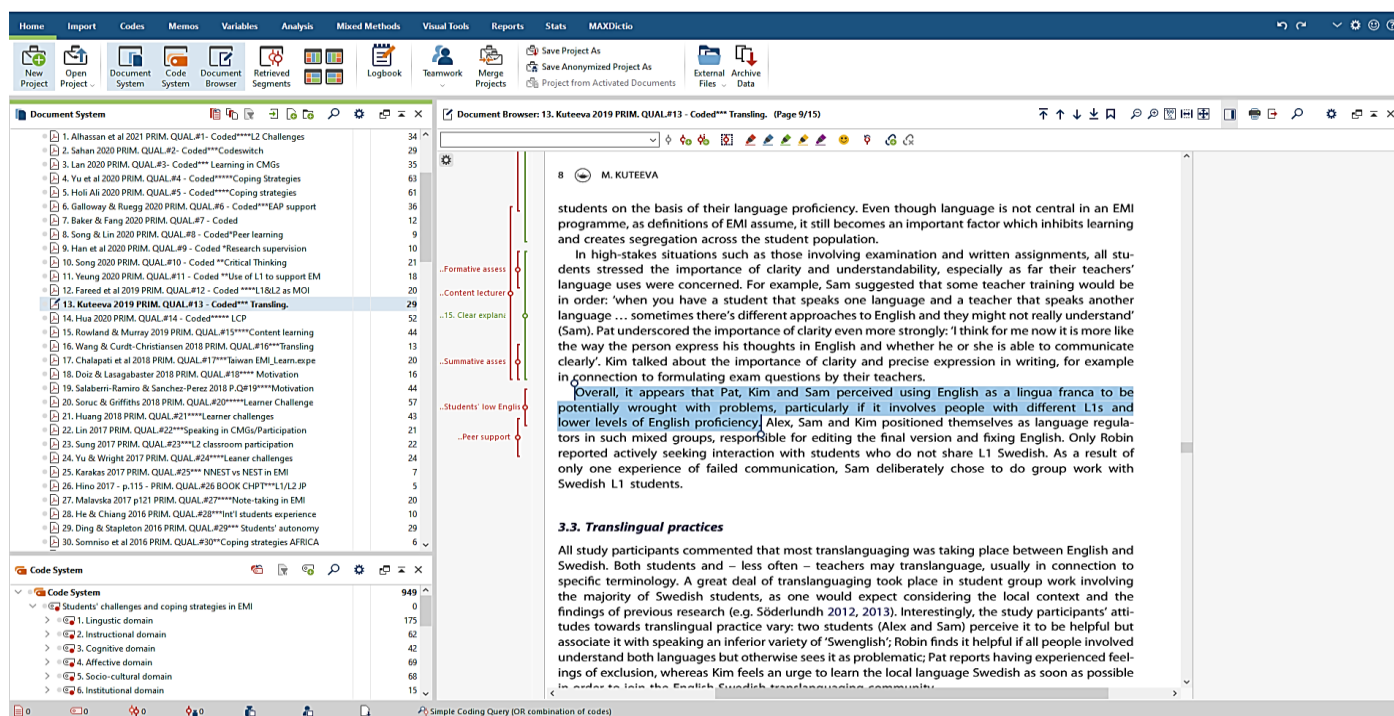


Figure 3. Line-by-line coding in MAXQDA Pro. 2020.

Table 4. A stratified schema of participant quotations and references reporting each domain and theme.

Domain and Themes Names	Sample Quotations/Authors' Comments from Selected Primary Qualitative Studies [Ref.]	N (%) of Total Articles (within Theme)	Articles Reporting the Themes [Ref.]	N (%) of Total Articles (within Domain)
META/LINGUISTIC DOMAIN				
<i>Themes related to the use of medium of instruction (MOI)</i>				
Impracticality of EMI for some content disciplines	"For those of us who study Law, English is not meaningful, and we would rather prefer other languages like Italian that provides a context closer to Spanish law" [64].	11 (28)	[12,53,64–72]	35 articles (88%)
Divergent perceptions of English	"I told one of my [local] lab mates, 'You are good in English, you have many vocabularies. So why you don't speak with me?' He said he is not confident from himself. And, this is why he feels shy to speak in front of me. And, I told to him, 'Also I am Arabic. My native language is Arabic, not English, but I can speak English.' So, he said 'No, you are ... something different'" [73].	5 (13)	[70,73–76]	
Students' low (general) English proficiency	"The major problem I am having now is about my language proficiency ... so I found it difficult to study all the common courses in English by the time I began to study in university. I couldn't even understand what my professor was talking about in the tutorial sessions" [6].	12 (30)	[6,12,64,66,74,76–82]	
Lecturers' low English proficiency	"I sometimes even thought it would be better if she had just let the class be open to whole group discussions rather than giving lectures herself. I know she is a professional in the field but because of her language barrier, it is almost impossible to understand her lecture" [83].	10 (25)	[12,53,72,75,79,81,83–86]	
Lecturers' non-standard language functions	"[The problem is] pronunciation of some specific words because the way they are pronounced by the lecturer differs from how I am used to pronouncing them" [75].	7 (18)	[53,67,75,81,86–88]	
Native vs. non-native English-speaking lecturer preferences	"I'd definitely go for a NEST [native English-speaking teacher]. It is because they have nothing to do with language issues while NNESTs experience troubles in delivering courses." [80]. "I think if it is an engineering course I would probably prefer a Turkish lecturer/ ... /because the other one is a "native speaker" he often speaks too fast without realizing it/ ... /especially he frequently uses unfamiliar terms" [80].	4 (10)	[53,71,80,88]	
Lecturers' poor language awareness and support	"Because the professor is from Hong Kong, many students just spoke Cantonese to respond to questions. But the professor required us to speak in English. The students didn't seem to like it and stuttered so much when they spoke" [74].	9 (23)	[53,68,69,74,78,83,88–90]	

Table 4. Cont.

Domain and Themes Names	Sample Quotations/Authors' Comments from Selected Primary Qualitative Studies [Ref.]	N (%) of Total Articles (within Theme)	Articles Reporting the Themes [Ref.]	N (%) of Total Articles (within Domain)
META/LINGUISTIC DOMAIN				
<i>Themes related to the use of medium of instruction (MOI)</i>				
Extensive code-switching and translanguaging	"Sometimes like even during the lectures when you're like commenting on- on something, I usually do that in Swedish. It's not necessarily English. It's like switching back and forth. It really depends, so [. . .]" [78]. "If we needed to say something and the subject was a bit more difficult, we spoke in Italian" [53] (code-switching). "They get caught up with their own language. That happened to me in my Civil Engineering practical work. We were a group of nine people and I was the only non-local and everyone just spoke Cantonese" [6] (translanguaging).	12 (30)	[6,12,53,64,66,67,74–76,78,89,91]	
Extensive use of L1 in classroom	"Yes, our mother tongue was a great help for us in translation and interpreting technical terms and concepts. I use dictionaries to help me translate technical words into Arabic . . . The teacher was an Arabic speaker and I used to understand and comprehend 97% of the lectures" [65].	6 (15)	[13,65–67,78,90]	
Speaking and oral presentation skills	"It may already be difficult to talk about a graph in Spanish, so what do I say now in English? Yes, I'm twice as nervous" [68].	14 (35)	[6,12,52,53,64,66,68,73,74,81,82,89,91,92]	
Inadequate English vocabulary	"I used dictionaries to look up every word in the lesson when I did not understand what the professor was saying" [13].	10 (25)	[12,13,65,67,68,81,90,91,93,94]	
Academic writing skills	"I think people have got problems with writing. People can't write. They know for instance, the word and they pronounce it but they can't write it. This is a real problem. You find someone talks about the topic and understands the topic and when it comes to writing they make mistakes. You feel there are problems with structure, grammar, and clarity" [91].	9 (23)	[6,53,65,72,81–83,90,91]	
Lecture comprehension	"If the lecture is held in our first language, even when we are doing our own things, we can still get the content . . . However, it is totally different when the language changes to English . . . Thus, if I do not focus on the lecture, then the lecture becomes a background sound, like birding humming in the background. I wouldn't care what the content is" [52].	11(28)	[12,52,53,66,75,81,82,86,88,90,91]	
Bilingual instructional materials	"We sometimes translate the whole handout [into Arabic] to understand it in a better way" [65]. "Wordy and complex texts" [67].	6 (15)	[12,13,53,65,67,79]	

Table 4. Cont.

Domain and Themes Names	Sample Quotations/Authors' Comments from Selected Primary Qualitative Studies [Ref.]	N (%) of Total Articles (within Theme)	Articles Reporting the Themes [Ref.]	N (%) of Total Articles (within Domain)
INSTRUCTIONAL DOMAIN				
<i>Themes related to content lecturer competence and instructional strategies</i>				
Monologic, non-interactive lecturing	"I think the lecturer's teaching approach is very rigid, and inflexible, with the same pattern all the time. She just literally reads from the textbook and covers the material in the textbook. Nothing special for her teaching approach. This results in the class atmosphere being completely dead [literal translation "Dead Air"]" [52].	10 (25)	[6,12,52,53,64,67,79,84,86,87]	21 articles (53%)
Assessment issues	"[Course Title] has multiple choice questions . . . So if you can do exercises, it'll be okay. And for [Course Title], you need to do every exercise. The test questions are similar (to those in the textbook) . . . Just memorise the test questions, and input, output. I forgot after the exam" [84].	10 (25)	[6,53,64–67,72,78,84,88]	
Attending to students' diverse needs/abilities	"So . . . in the first class we took SAT test, and it was not difficult for us [local students]. Just a few words we don't understand . . . I think it's for talented junior high students . . . So what the instructor taught is not difficult for us, but rather difficult for international students. The instructor needs to make a balance" [84].	6 (15)	[6,12,52,79,82,84]	
Non-attending to students' personal qualities and cultural sensitivities	"The professor, like: 'Come on, say something.' 'You have, you have something to say, right?' And you're like, really? Nothing (laughs). [. . .] I think they are more soft with the local because the local don't speak, they think that the international would do it, so they put you in the corner" [73].	4 (10)	[6,73,82,83]	
Lecturers' speaking rate	"There was a problem in the accounting courses. For instance, we couldn't understand from the teacher of Financial Accounting course in semester one. Even those who graduated from the school here and who have business backgrounds faced a problem with understanding the teacher . . . she was fast" [91].	5 (13)	[12,52,75,90,91]	
Lack of clarification and corrective feedback from lecturers	"I think EMI leaves too much pressure on Korean students, and I feel like I have to survive on my own. I am sure my assignments submitted in English are full of grammar errors, but I don't get any feedback on my writing from the instructor. I sometimes feel frustrated that there is little support for Korean students whose mother tongue is Korean and who is not familiar at all with learning in English" [83].	5 (13)	[13,65,75,83,90]	

Table 4. Cont.

Domain and Themes Names	Sample Quotations/Authors' Comments from Selected Primary Qualitative Studies [Ref.]	N (%) of Total Articles (within Theme)	Articles Reporting the Themes [Ref.]	N (%) of Total Articles (within Domain)
SOCIO-CULTURAL DOMAIN				
<i>Themes related to students' learning in CMGs and out-of-class environments</i>				
Communication among home/international students	"... we have a [Mainland] Chinese girl in our class, and she has a bit of problems with English, so she doesn't understand what I'm telling her so when we, we were in the same group and she didn't understand what I wanted from her so we had a misunderstanding in the group work which resulted in a worse grade" [78].	9 (23)	[6,12,77–79,81–83,85]	21 articles 53%
In-group pressures	"Similarly, following just one incident of working in a mixed group which included two students from [Mainland] China, Sam had avoided working in such groups in the EMI programme: 'since then I have sort of tried to find at least people who speak Swedish or English' [78].	6 (15)	[73,74,77,78,84,95]	
Multiple and/or unfamiliar accents	"At first, I did have great difficulties in understanding international students from Pakistan or India. They had a very good grasp of knowledge and spoke quite fluently, but I did not understand what they said due to their accents" [95].	6 (15)	[6,12,71,77,85,95]	
Peer support	"Even in peer learning groups they preferred to work together as Rwandans. One reason for this ... was that South African students looked down on them because they were not proficient in English" [82].	4 (10)	[78,82,88,95]	
Divergent attitudes toward class participation	"I mean my basic think is there is a question, the teacher is asking, and I'm, like, thinking, 'Do I have anything to say, regardless of who is there and what they do and think?' [...] And if I feel like I have something to say, I say it." [73].	5 (13)	[73,74,84–86]	
Collaborative learning and teamwork	"If a student in my secondary school refused to do anything when s/he was doing a project, they would be caught and punished. But in university, professors won't care about which student is a free rider. They only care about how good their students' group project is and give marks based on the quality of the project" [6].	5 (13)	[6,78,96–98]	

Table 4. Cont.

Domain and Themes Names	Sample Quotations/Authors' Comments from Selected Primary Qualitative Studies [Ref.]	N (%) of Total Articles (within Theme)	Articles Reporting the Themes [Ref.]	N (%) of Total Articles (within Domain)
META/COGNITIVE DOMAIN				
<i>Themes related to students' content learning and comprehension</i>				
Processing and comprehension of difficult content	"[When concepts were complex to explain] 'even for the lecturers, it sometimes became a bit tricky' [53]. 'Like in the textbook a section requires us to reflect on the theory Provide examples But the instructor skipped it But with reading by myself, I can take time to think' [84].	11 (28)	[12,52,53,65,67–69,75,76,79,84]	19 articles (48%)
Poor background knowledge	" . . . Students with weaker English, coupled with a weaker background in science, could sometimes struggle with the extensive reading required on the MSc" [53].	4 (10)	[52,53,88,91]	
Over-simplification of content	"What is taught [via EMI] will be relatively easy and the test is easier" [84]. "The emphasis on learners' inadequate English proficiency compels the instructors to lower their expectations about student performance" [88].	3 (8)	[74,84,88]	
Extensive use of technical language	"It is common that we don't know what is being taught in the lecture so we need to spend a lot of time on looking up the meaning of some technical words so we understand what will be taught before the lecture begins" [6].	7 (18)	[6,12,72,75,88,91,94]	
Lack of practical demonstration/application of knowledge	"Seriously, for the content of the course, I have no idea how it influences me . . . I feel like I am still a test-taking machine, studying those theories. I can barely see how it makes my life better; it's kind of no use to my daily life" [84].	3 (8)	[67,74,84]	
Poor rhetorical and critical thinking skills	"When it comes to discussion, it's usually just silence and until someone breaks it, it's always really reluctant. From my experience in the UK, people are a lot more engaged and argumentative, so that's one thing that really stands out [6]. "Everyone expected you to give a critical opinion, but nobody trained you how to do a critical assessment. The school system that I went through didn't train you how to be critical, like outside the box" [97].	3 (8)	[6,83,97]	

Table 4. Cont.

Domain and Themes Names	Sample Quotations/Authors' Comments from Selected Primary Qualitative Studies [Ref.]	N (%) of Total Articles (within Theme)	Articles Reporting the Themes [Ref.]	N (%) of Total Articles (within Domain)
AFFECTIVE DOMAIN				
<i>Themes related to students' socio-emotional responses toward EMI</i>				
Lack of confidence	"I feel shy. Embarrassed. I can't catch up with the teacher because my English is not good, and my memory is not so strong to keep all information" [12].	6 (15)	[12,13,52,64,79,82]	16 articles(40%)
Fear of losing face	"My English is not so good, so I find myself suffering a lot when sitting in EMI classrooms. I did not ask questions in class because I was afraid that I cannot make myself understood. When the instructors asked "are you with me"? I would always say "yes", even though I was not. If I said "no", I was afraid that I could not understand the instructors' further explanations." [13].	5 (13)	[12,13,64,68,74]	
Teacher–student rapport	"Yet this is not the case with teachers who are native speakers of English. We dared not ask them for clarification after class because we cannot understand their English" [13].	2 (5)	[13,95]	
Frustration	"Some students do not understand what the teacher says and that interrupts the flow of the class that becomes really slow and some of us feel frustrated" [64].	6 (15)	[6,12,64,74,79,95]	
Dissatisfaction	"Though those who earn the first place in the department will attend classes, showing their passion, but in general . . . I see classmates are using smartphones. I don't want to be like that [skip classes], but I feel it boring and cannot listen to anything" [84].	5 (13)	[68,74,79,84,87]	
Anxiety and stress	"I could understand only 10%–20% of the lectures in the first few weeks. The teacher for our core course speaks English with a strong Hong Kong accent. I was very nervous. But the more nervous I was, the harder it was for me to understand the teacher" [81].	5 (13)	[6,52,64,68,81]	
Boredom	"It's just like senior high school, listening during the class, one-way delivering, and back to home study, finally aiming to score high on the test. I cannot figure out what's the difference between college and senior high school. This kind of feeling continues in [Course Title]" [84].	3 (8)	[12,52,84]	
Fatigue	"What made the situation worse is that the lecturer would continue the lesson without any breaks" [52].	2 (5)	[12,52]	
Intrinsic motivation	"In addition to the academic reasons such as getting a "certificate" because it is essential for the future, I also like listening to "music" "in English," and I watch TV "in English" more" [68].	5 (13)	[13,65,66,68,84]	
Extrinsic motivation	"They [parents] are always telling me that English is extremely important". "They are a drag, a pest" [68].	4 (10)	[12,53,68,84]	

Table 4. Cont.

Domain and Themes Names	Sample Quotations/Authors' Comments from Selected Primary Qualitative Studies [Ref.]	N (%) of Total Articles (within Theme)	Articles Reporting the Themes [Ref.]	N (%) of Total Articles (within Domain)
INSTITUTIONAL DOMAIN				
Ineffective curriculum designs and planning	<i>Themes related to university-wide EMI policies and conditions affecting students' learning</i>			
	<i>"It [EMI course] was generally not effective; for some it was too short, for others the methodology was not suited to beginners and others considered the level of the course too low or 'irrelevant' to postgraduate students" [82].</i>	4 (10)	[74,79,82,87]	
Inadequate self-access support	<i>Both staff and students criticised support with regard to its availability, effectiveness, or, in one case, price. "While "special TOEFL classes" are sometimes offered, Sandra (Domestic student, University C) doesn't "go to these classes as they are expensive. They are not free. 30,000 Yen" [89].</i>	4 (10)	[53,82,89,93]	8 articles (20%)
EAP courses not meeting students' needs	<i>"I took one such course offered by the university in order to improve my spoken English and grammar use. However, I found the instructor simply taught the course in English, pretty much like the way other marketing major-related classes were taught, rather than really targeting my spoken and grammar problems" [13].</i>	3 (8)	[13,82,89]	

The final process resulted in the inclusion of 40 studies that qualified for the synthesis. Detailed descriptors of the studies included in the synthesis are given in Appendix A.

4. Results

The selected 40 studies included 1769 participants from 20 countries and jurisdictions (see Figure 4). The six main analytical domains related to the issues and obstacles faced by students during their content learning with EMI were identified. These were the meta/linguistic (reported by 35 studies), instructional (21 studies), socio-cultural (21 studies), meta/cognitive (19 studies), affective (16 studies), and institutional domains (8 studies), as illustrated in Figure 5. Selected quotations illustrating each descriptive theme are provided in Table 4.

4.1. Meta/Linguistic Domain

First, we explored the themes related to the students' attitudes toward content learning through EMI. Students referred to the **impracticability of EMI for some content disciplines** in 11 studies. Some students expressed concerns and negative feelings [64,65,68,70], while in other studies they voiced mixed or positive views regarding the practical utility of EMI for studying content [12,53,67,69,71,72]. In addition, students seemed to have **divergent perceptions of English** in content classrooms, especially when it comes to comparisons among international and home students [70,73–76]. Some international students believed they were 'as much non-native English speakers' as home students, however, they regarded English as 'just a medium for communication' and 'felt no need to be concerned about making mistakes' [73,74], whereas home students expected native-like English from teachers and peers alike [73]. Other students perceived English as 'an imposed lingua franca' that limited the possibility of 'having courses delivered in both the local and other foreign languages' [70].

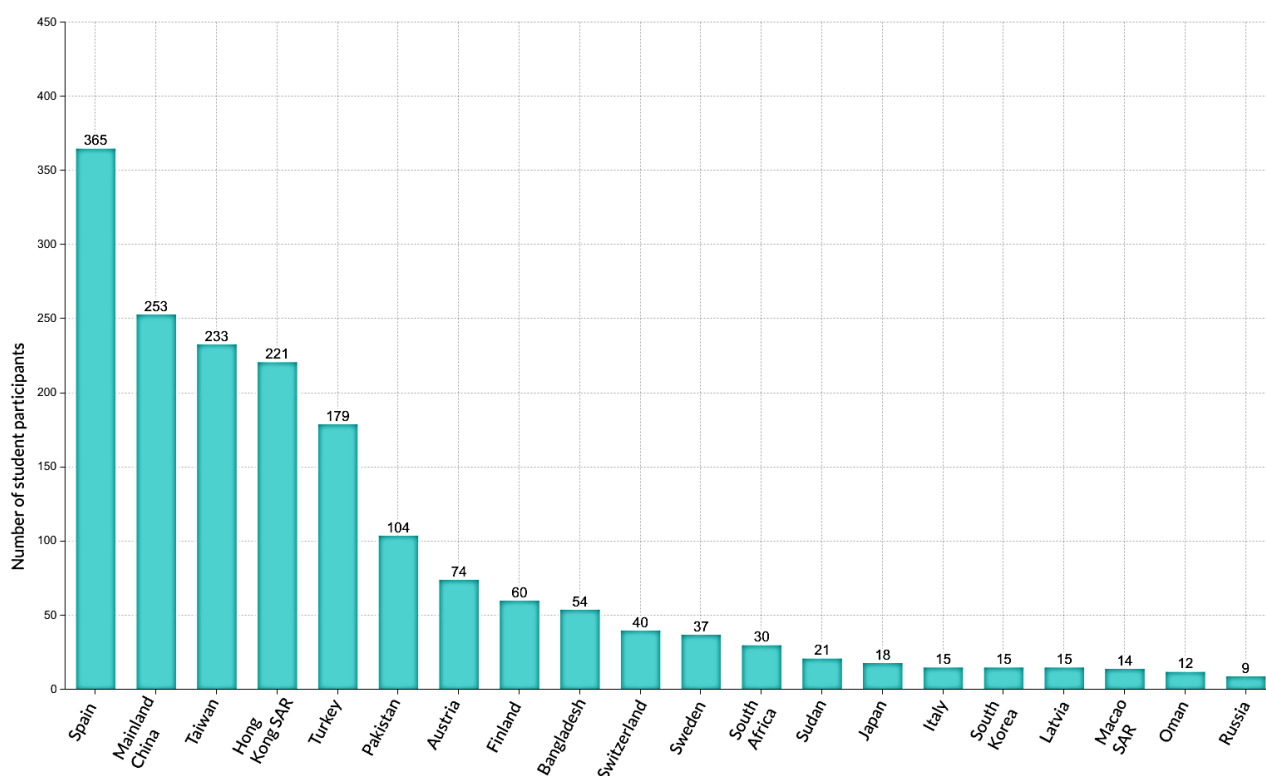


Figure 4. Representation of student participants by country or jurisdiction ($N = 1769$).

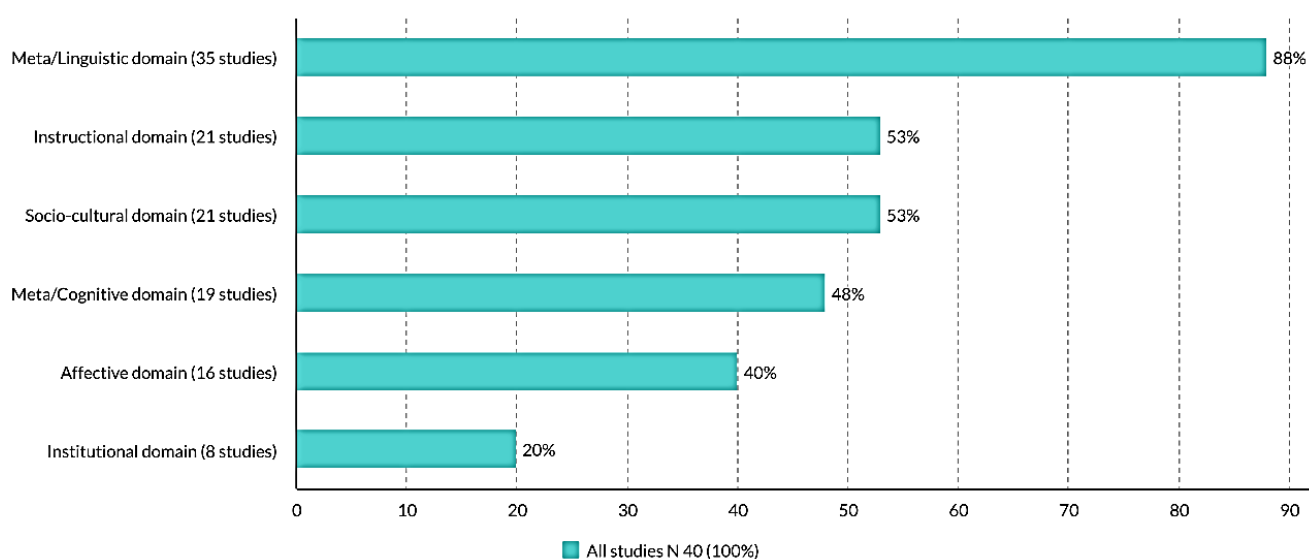


Figure 5. Distribution of studies across six analytical domains.

Next, we examined a group of themes related to students' and lecturer's English proficiency, the strategies used, and their effects on learning. For both home and international students in at least 12 studies, concerns stemmed from adapting to a bilingual academic environment in which students had **low general English proficiency**. Students believed that their inadequate English was one of the leading causes of poor content comprehension [6,12,64,66,78], and as such this had a negative effect on their confidence 'to speak in front of classmates' [6,79] and their motivation to learn [82]. Many students pointed to the weaknesses of their academic English skills and attributed it to the lack of prior experience with English Medium Instruction [6,76,82]. Students' use of coping strategies such as 'looking for gestures, some verbs, some phrases' in order to understand lecturers'

speech further highlights the depth of the problem [12]. The latter also seemed to influence students' preference for non-native-speaking lecturers because native-speaking faculty 'often speak too fast without realizing it' [80]. Students with higher English proficiency believed that when the class has many students with low levels of English, some professors tended to 'teach at an average level' [74].

The participants in 10 studies believed that **lecturers' low English proficiency** was another major hurdle for content comprehension [12,53,72,84], and that it prevented course instruction 'in a deeper way' and jeopardised class facilitation and engagement [12,84]. As some instructors were not properly trained to teach or communicate in English, this led to their committing noticeable grammatical and vocabulary errors when using spoken English [75,86]; thus, they often resorted to their L1 to teach courses [79]. Students suggested that universities should 'test teacher's levels of English' or establish 'certain language standards' for EMI lecturers to help students perform better in their EMI courses [83,86]. This was perceived as a two-dimensional problem, in that 'not only students find it hard to understand their teachers' English, but it may be equally hard for content instructors to understand international students' English' [83,86]. Another related theme pointed to **the lecturers' non-standard language functions**. Students referred to their inability to understand lectures due to lecturers' English pronunciation, intonation, accent, or dialect [53,75,81,86,87] which 'created difficulty in comprehension and caused the loss of concentration after 15 min of listening' [75]. The lecturers' accent especially seems to have affective and cognitive impacts on student learning [53,67,81,88]. On the contrary, when lecturers could successfully engage with students in 'much the same way as they do in their native language' the students mentioned that non-standard language functions became a secondary issue [87]. Some students 'felt that the use of English did not impair their ability to understand course content delivery . . . due, in part, to the fact that their teachers are non-native speakers of English with more familiar accents and intonation' [53]. The latter two themes provide some context for the recurrence of a theme related to **native vs. non-native English-speaking lecturer preferences** [53,71,80,88]. In one study, Turkish EMI students chose native speakers because of 'better command of English and quality of education system', while 'better communication opportunities and better comprehension of lectures' were reasons for preferring non-native-speaking lecturers. Other students had no specific preferences, provided lecturers showed 'fluency and intelligibility' and 'expertise in the subject matter' [80]. One could also relate this theme to **the lecturers' poor language awareness and support**, reported in nine studies. Although in some studies students 'felt that it is not the role of lecturers to help them with English' [53], students also shared their 'dissatisfaction with an EMI class that had little language support' from instructors, and to a lesser degree, from their respective departments [74,78,83,89,90]. In most other cases, students made it clear that effective learning in an EMI course is not only about the quality of content and its delivery, but also the effective use of the primary medium of instruction, and that lecturers should be aware of their use of English [68,69,78,88–90].

Twelve studies have systematically addressed **extensive code-switching**, which refers to the alternation between languages in a specific communicative episode in an EMI classroom, such as an oral presentation or responding to a lecturer's question [99]. On the one hand, due to their insufficient level of spoken English, lack of vocabulary knowledge or due to the difficulty of the content subject, many students welcomed the possibility of using their first language (L1) when they felt the need [12,53,67,74–76,91]. This practice was especially expected and tolerated when used by lecturers with unclear pronunciation and who lacked the ability to 'put everything together' in English [53,64,66,67,76,89,91]. On the other hand, extensive code-switching in class caused a backlash from international and a few home students who either did not speak the L1 (such as Spanish or Mandarin) or expected their EMI course to support their 'genuine' English learning [64,74]. In some cases, code-switching was intertwined with the act of **translanguaging** that brought together different dimensions of students' personal history, experience, attitudes, and identities [100]. Switching to Swedish [78] or Cantonese [6] in the EMI lecture or team project allowed

‘peer communication on a different level’ and ‘to join the ‘elite’ group’ of L1 speaking students’ [78], or, conversely, was used by home students to disregard the needs of minority international students [6]. Indeed, the interrelationships between language fluency and codeswitching/translanguaging are not always linear. However, one can observe implications stemming from lecturers’ and students’ ‘abandonment of English’ in an EMI course altogether, preferring **extensive use of L1 in the classroom** instead, as reported in some studies [13,65–67,78,90].

Finally, we explored themes related to specific problems in an EMI classroom that exposed students’ problems and necessitated student-centred interventions. Students in nearly half of the studies had encountered problems with **speaking and oral presentation in English**, which affected their learning in various ways. The data specifically highlighted problems related to the lack of skills to ‘speak in English in class’ [12,66,68,91], participation in discussions [53,66,74,82,91], answering questions in English [12,52], pronunciation and peer reactions [68], ‘finding the right word’ [53], memorizing slides [81], ‘producing absurd sentences’ [12], and switching to L1 when unable to express an idea in English [74]. Some lecturers’ poor English and/or monologic teaching did not provide opportunities for practising speaking skills [64]. Students also mentioned that universities provided help with English writing skills, but there was no support for oral communication [89]. Some students attributed their poor speaking to cultural norms that encouraged more ‘listening’ than ‘speaking and arguing’ in class [73,81], whereas others felt ‘pressured by peers and teachers to participate in discussions’ due to their higher English fluency [6]. Students believed that oral participation played a key role in their acceptance in the peer group [92]. Another critical issue for many students was **inadequate English vocabulary** (10 studies) which manifested itself in specific issues such as understanding vocabulary used in the class, understanding themes, inferring vocabulary from context, decoding vocabulary while listening, remembering key vocabulary, and the need to constantly look up vocabulary using dictionaries and translation tools [12,13,65,68,90,91,93]. Another related subtheme that emerged pointed to the problem of **academic writing in English** (nine studies) which could be seen from poorly written assignments [90], students’ inability to compose longer essays [81], their weak knowledge of referencing and plagiarism-avoidance practices [6,81], and confusion caused by ‘different requirements at a new university’ [82]. Students pointed to various aspects of academic writing that presented a challenge, including format, structure, grammar, presentation, choice of words, and clarity [65,72,83,90,91]. Some mentioned the ‘need to do research, a lot of analysis, and discussion’ [6].

Eleven studies have systematically reported instances of students facing problems with **EMI lecture comprehension**. Namely, students had trouble when prioritizing listening and/or taking notes at the same time [12,91], with lecturer’s speech rate being too fast [75,91], in addition to learning and revising content that required more time, prolonged concentration, and additional energy compared with studying courses in the students’ native language [52,53,81,82]. Other factors included lecturers failing to explain terms or not adequately using discourse markers and logical connectors [75,86,88], as well as inability to comprehend and reflect on course materials in English [81]. Some students, especially those with no prior EMI experience, seemed to be especially worried about their comprehension in the first few weeks of their courses [81]. Poor lecture comprehension seems to be linked with incomprehensibility of instructions and tasks during examinations as well [66]. The use of comprehension strategies such as recording and listening to lectures several times [53], extensively using online translation tools [90], taking elaborate notes [12], printing out PowerPoint slides, and checking unfamiliar words and spelling [81,82] point to the students’ needs to cope with these problems on their own. Some other themes, such as **bilingual instructional materials**, could also relate to the problem of EMI lecture comprehension and course performance [12,13,53,65,67,79]. As some English textbooks and handouts were ‘wordy and complex’ [67], and as ‘understanding a new concept in written English takes a bit longer and you have to read a sentence more than once’ [53], students would prefer reading additional materials in their native language ‘to gain in-

depth knowledge of the subject contents delivered in English' [13]. However, in some settings where students were more fluent in English, they 'preferred reading authentic rather than simplified or abridged materials' in English [53]. In addition, some students were critical about 'an imbalance in the use of teaching materials' [79], in other words, lecturers' overreliance on textbooks disregarded the students' need to support learning with additional teaching materials such as videos.

4.2. Instructional Domain

This domain includes themes related to students' views of content lecturers' competencies and the instructional strategies used in EMI classrooms. Data extracts from 21 studies (53%) were synthesised into six themes. The most prevalent theme within the domain is related to students' frustration with '**monologic**' [84,87], **non-interactive lecturing**, which negatively affected students' concentration, motivation and learning in an EMI classroom [6,12,52,53,64,67,79,84,86]. According to students, the EMI courses did not result in any learning when the classes were 'teacher-fronted' with 'little opportunity to communicate with either teachers or peers' [67], especially when 'teachers narrated exactly what has been written in the textbooks' or 'just read from the PowerPoint slides that had already been uploaded to the Moodle [6,12,64,79,84,86]. Such an instructional approach had rendered 'the class atmosphere completely dead' [52]. Students were often disappointed to have 'little or no discussions in class' [86]. Such monologic teaching styles were often described by students as 'traditional,' 'dull,' 'one-way delivery,' 'teacher-fronted,' or 'not internationalised'. [67,79,84]. Monologic instruction encouraged resistant behaviours, such as sleeping in class, using smartphones, chatting, and absences [52,84]. International students and some home students faced the need to adapt to classes that were more didactic and less interactive compared to what they had previously experienced [6]. Therefore, many students stressed the effectiveness of dialogic instruction, such as when lecturers encouraged informal discussions or 'faced the students and kept them busy with questions [87]. Students referred to this approach as 'useful,' 'active' 'engaging,' and 'interactive' [64,84]. Students especially praised the use of group work and other strategies for classroom management and participation that compensated for the low language proficiency of lecturers and students [64]. Although there were students who thought that the interactive nature of the classroom represented a stark contrast with their prior education experiences, nonetheless these students did not necessarily consider it an instructional deficiency [6], pointing yet again to their own lack of oral communication skills. In addition to 'interactive lecturing' students also favoured 'clear' presentation of slides and explicit communication of each lesson's objectives [87].

Along with lecturing style, students were also concerned with **assessment issues** when attending EMI content subjects (10 studies). In some cases, students found it 'stressful' that subject learning through EMI 'might have an influence on their final marks because they have difficulties to express themselves in English' [53,64] and some suggested that tests and exams should be flexible in allowing the use of students' L1 [64,66]. Generally, students expected that formative and summative assessments should 'obviously ... assess subject knowledge rather than knowledge of English' [53]. Occasionally, students felt it was unfair that the examinations in English 'cater only for students who have either English-medium background or have good command over the language' [66]. This was a serious concern 'when classroom participation was part of the assessment criteria' [6]. In other cases, students pointed to difficulties with lecture comprehension and the lack of 'room for negotiating grades' when lecturers did not speak students' L1 [88]. The need to constantly use L2 also negatively affected the time management of some students for exam and graded assignment preparation [72]. Students who worked hard to complete their courses in English also expected to receive reports that certified their English proficiency in order to help them secure competitive jobs [67]. Students stressed the need for clarity and comprehensiveness, especially when lecturers' English was not advanced [65,78]. Assessment issues were also raised in other contexts. On one occasion, students were

concerned that their peers' poor English explained the lecturers' use of 'easy' and 'non-challenging' assessments [84]. In the same study, students pointed out that when lecturers failed to 'demonstrate relevancy' of the content, learning was reduced 'merely to surviving in examinations' [84]. Some students struggled to come to terms with many assessment varieties, such as 'a mid-term test, a group project, an online discussion' or often 'heavily weighting towards written examinations' which was too much of a burden, especially when students had no prior experience [6].

Students also felt that because a typical EMI course brings together students from all kinds of linguistic, cultural, and educational backgrounds, **attending to students' diverse needs and abilities** when teaching course content would significantly enhance learning outcomes [6,12,52,79,82,84]. In one study, students pointed out that less proficient learners thought that 'they do not receive the attention that they need from the lecturer' [52]. In the perfect scenario, students expected that the 'lecturers would listen to the students' problems and advise and help in finding solutions whenever possible, encourage and appreciate their efforts, extend deadlines for the submission of assignments, respond positively to students' weaknesses, and take care of each student individually . . . ' [12,79,82]. Students believed that EMI programmes should be designed to 'offer flexibility in choice of courses and cater to students who learn at different paces' [79]. Students also stressed the need for lecturers to **attend to students' personal and cultural sensitivities** [6,73,82,83]. Some international students with higher levels of English 'felt the pressure to speak in class when they have nothing to say' [73]. This study pointed out that some lecturers indeed ignored 'the fact that international students desire to remain silent at times and that some [home] students do develop a desire to speak.' In another study, it was reported that the 'lecturer publicly ridiculed the Rwandan students, indicating that they did not deserve to be studying' on the programme for their poor critical thinking skills [82]. The disregard of cultural sensitivity in a multicultural EMI classroom may indeed lead to students' attrition, as one Japanese student in South Korea had experienced [83]. In addition, students in five studies mentioned **the lecturers' speaking rate** as a double obstacle for lecture comprehension [12,52,75,90,91] reported as 'keeping up with the teacher and the topic'. The **lack of clarification and corrective feedback from lecturers** was another problem faced by students in five studies [13,65,75,83,90]. For example, some students failed to 'complete assignments without clear guidelines and rubrics' [65] or because of a lack of explanation of 'unclear terms' [75] and 'subject-specific vocabularies' [83]. As for corrective feedback, some students voiced concerns that their written assignments had many shortcomings, and the lack of feedback from lecturers only increased students' anxiety [83].

4.3. Socio-Cultural Domain

This domain includes themes related to students' learning in collaborative, culturally mixed and out-of-class environments. Data from 21 studies (53%) were synthesised and grouped into seven descriptive themes. One of the major recurring themes in this domain was the challenge of **communication among home and international students**. Although this and the following themes may not be directly related to EMI pedagogy, they significantly impact EMI lecturers' pedagogic repertoires when implementing interactive assignments. In particular, communication breakdowns between home and international students were explained by poor or non-standard spoken English [12,77,78]. For example, local students expressed frustration about the difficulty of understanding international students' 'heavily accented' English [77]. Conversely, both home and international students encountered difficulties 'when interacting with native English speakers due to the fast pace of discussion and use of colloquial terms' [6]. Other students complained that communication was sometimes impossible since the 'students from the same country always sat together so they could speak their own language' [79]. Language barriers also seemed to increase **in-group pressures** noted by students in several studies [73,74,77,78,84,95]. For example, some home students felt that 'international students might have used their lack of language proficiency as an excuse to seek and receive more help from teachers' [95].

Another critical issue that students brought forward to express their frustration when studying in culturally mixed groups was **multiple and/or unfamiliar accents** [6,12,71,77,85,95]. Studying in such environments violated some students' expectations that 'in such groups they could learn and speak standard varieties of English such as American or British English' [77]. When speaking in class it was noted that the accent, stress, intonation, and general English proficiency of some home and international students made it difficult to follow class discussions [6,12,71,85,95]. Some students felt that in such situations lecturers were of little help; thus, students stressed the importance of **peer support** [78,82,88,95]. For example, some students expressed their willingness to help international students, and often played an important role in bridging the gap between EMI lecturers and international students [95].

Another theme that further highlights the importance of socio-cultural factors is linked to home and international students' **divergent attitudes toward class participation** [73,74,84–86]. For instance, in one study local students sought to limit their talk in class and would rather wait until after class to talk to the lecturers privately. Such practices were alien to most international students [73], who were often 'just too active' and tended to 'dominate the class discussions' [74]. Some home students 'didn't feel comfortable competing with international students for opportunities to contribute to the discussions', which led to their gradual withdrawal [74]. Varied cultural and educational backgrounds of students and lecturers in one course had both benefits and challenges for **collaborative learning and teamwork** [6,78,96–98]. According to some students, one of the benefits of diversity on collaborative learning is being 'freer' to express one's opinion 'because another person's ideas might be way crazier than yours' [97]. On the other hand, some students reported difficulties when collaborating with students with different personalities, which manifested itself in 'frustration over free-riders or a perception that some group members would not pull their weight in completing the required tasks' [6]. For example, some international students perceived that their higher English proficiency was used in an instrumental way by home students to pressure them to take the lead in finalizing a team project [6].

Finally, one of the important recurring themes within the socio-cultural domain was **out-of-class learning**, reported in at least eight studies [6,13,53,65,79,81,90,93]. An important aspect of this related to learner autonomy, i.e., the challenges of adapting to what students referred to as an 'independent learning culture' at English-medium universities [6]. These students reported being previously more accustomed to close relationships with lecturers and peers, but in the absence of these 'core sources of information and advice' they had to cope with day-to-day learning on their own [6,81,93]. Some students stressed that when universities offered a mentoring support, these sessions tended to be rather ineffective [79]. As a result, some students actively sought outside help (e.g., 'a ladder to climb' [81]) from former classmates, friends and family members in order to cope with difficulties studying content subject in English [65,81].

4.4. Meta/Cognitive Domain

This domain focuses on themes related to students' cognitive and metacognitive affordances for EMI content subject learning and comprehension. Findings and quotes from 19 studies (48%) have been synthesised and categorised into six themes. Given the complexity of studying content subjects in L2, students in at least 11 studies (28%) pointed to the problem of **processing and comprehension of difficult content**. Some students suggested that the concepts were 'too overwhelming and difficult' not only for students to learn [79], but even for lecturers to teach [53]. In many studies, students believed that compared with regular classes in L1, taking an EMI course 'required extra effort, more work and time' for students [68,69], while during classes 'keeping up with the teacher and the topic,' 'understanding lecture content in English,' 'lacking examples to scaffold understanding abstract concepts', 'lecturer not explaining the new concept' or failing to grasp when 'the lecturer starts a new idea and where they finish it' [12,75,84] proved

stressful and challenging. The most widely used strategy to ‘keep up with the course’ was to use the L1 as much as possible for notetaking, clarifications, cross-checking, and discussions [76].

One of the factors that further complicated the processing of new or difficult concepts was students’ **poor background knowledge** or schema building [52,53,88,91] especially in the fields of STEM subjects, psychology [52,91], and various research methods. The students’ experiences suggested that lecturers should have taken into consideration not only learners’ prior EMI experiences or English proficiency levels but also their current subject knowledge [88]. On the other hand, when it came to students who had stronger background knowledge and advanced English levels, the problem turned out to be a perceived **over-simplification of content by lecturers** [74,84,88]. Since lecturers were aware of their own and most students’ problems with English [88], they seemed to have simplified the course delivery and materials, resulting in ‘easy’ and ‘non-challenging’ lectures, discussions, and exams [84]. This sparked frustration and resistance from students with advanced background knowledge and language skills [74,84].

Another hurdle related to this cognitive domain and reported by students was the lecturers’ **extensive use of technical language** (reported in seven studies). Students complained that when they encountered technical jargon ‘everything became confusing’ and ‘challenging’, partly because ‘they had not learned technical terminology in their English language support classes’ [72,94]. In the absence of support from lecturers, students sought to employ their own strategies, such as guessing from context, regularly using technical dictionaries and Wikipedia, and searching for visual descriptors [12], all of which negatively affected their overall time management and planning for thorough reading of course books or completing other assignments [6,88]. According to students, another barrier to effective comprehension of content was the lack of **practical demonstration and/or application of knowledge** by content lecturers, as reported in three studies. Since many students seemed to have ‘prioritised disciplinary learning’ [67] ‘acquiring content knowledge and being able to put it into practice’ was the most essential perceived learning outcome [84]. However, according to students, and partly due to lecturers’ language deficiencies or monologic lecturing, practical demonstration or application of course content was not possible, which increased students’ dissatisfaction and disengagement [67,74,84].

Finally, one emerging theme that negatively affected engagement, especially during seminars and discussions, was students’ **poor rhetorical and critical thinking skills** [6,83,97]. Students pointed to their lack of prior training in criticism and content discussion (e.g., ‘grasping and reflecting on author’s reasoning and proposing alternative methods/perspectives’) during lectures, presentations, team projects, and when writing essays [97]. Some students believed that lecturers’ teaching style by default limited the opportunities for participating in ‘engaged and argumentative’ [6] as well as ‘discussion-centred’ sessions [83].

4.5. Affective Domain

This domain includes themes related to students’ socio-emotional and motivational responses toward EMI. Data from 16 studies (40%) were synthesised and grouped into 10 descriptive themes. Students in at least six studies reported a **lack of confidence** when taking EMI courses [12,13,52,64,79,82]. Specifically, they felt ‘shameful’ about their poor spoken English, resulting in their avoiding communication with teachers and peers [12,13,52,79]. In some situations, even when students were ‘courageous enough’ to overcome their shyness and participate in discussions, the ‘one-way teaching environment’ undermined such efforts [82]. Although many themes in this domain were closely intertwined, some themes, such as **fear of losing face** [12,13,64,68,74], were strongly linked to one another. This theme covered situations when students were to interact with native English-speaking lecturers [12,13] and present or speak in front of the class [12,74], as well as with problems of pronunciation [68] and perceived overall ability ‘to get through’ the course [64].

Fear of losing face in the context of communication among students with poor English and their native English-speaking lecturers seemed to negatively affect the building of

teacher–student rapport [13,95]. Students expressed their **frustration** [6,12,64,74,79,95] with having to follow local cultural norms and refrain from disagreeing with faculty [95], or being required to attend courses with poor relevance to their academic majors [74,79], with poor comprehension of content in English, with having to collaborate with other students [6] with lower English proficiency [64], and with lectures being too ‘teacher-centred’ [6]. Although the level of student dissatisfaction with the EMI courses fluctuated from study to study, some articles reported increased **dissatisfaction** due to linguistic, instructional, and socio-cultural reasons [68,74,79,84,87]. Elevated **anxiety and stress** were explicitly reported in five studies [6,52,64,68,81] when students felt anxious and stressed at the beginning of the course [81], and when ‘speaking in public’ or answering questions in English [52,68]. Stress levels due to perceived poor English skills were heightened during major summative assessments [64], when reading difficult course materials [6], or when trying to come to terms with lecturers’ strong accents [81]. Some students also reported an increased sense of **boredom** when lecturers conducted monotonous classes and when topics were either non-challenging or irrelevant to students [12,52,84]. Some students thought that **fatigue** was ‘a typical state of body and mind’ when attending classes on complex topics in a foreign language [12,52], especially when there was no break [52]. Related to the affective domain, students explained their participation in EMI courses by **intrinsic motivation** [13,65,66,68,84].

Despite having low levels of English, they sought to attend EMI courses and interact with their teachers and ‘like-minded peers’ [84] as a way ‘to boost their academic learning’ [13], ‘to improve their language skills’ and ‘to maintain the international standards’ [66,68]. They also ‘proactively and creatively developed coping [strategies] that worked for them’ [65]. However, some students’ interest in the course and motivation to learn were negatively affected when lecturers did not demonstrate linguistic fluency and pedagogical competence [66]. Data also pointed to the presence of **extrinsic motivation** [12,53,68,84] to explain students’ desire to attend EMI courses. In some studies, students believed that EMI experience would better prepare them for future jobs at multinational companies and the growing role of English in the world [12,53,68,84]. In other cases, they took up the courses because of their ‘friends who were enrolled in the same classes,’ ‘because parents insisted’ and due to a perceived need to ‘take an internship abroad and become an Erasmus student’ [68].

4.6. Institutional Domain

This domain includes themes related to university-wide policies and conditions affecting learning in EMI classrooms. Compared to the previous five domains, the institutional needs were less evident in student responses. Eight studies (20%) in total referred to these needs, which were then synthesised and grouped into three themes. Somewhat implicitly, students mention **ineffective curriculum design and planning** in their universities [74,79,82,87] as affecting the ways in which EMI classes were conducted and classroom experience was affected. Some students stressed that compulsory EMI courses did not take into consideration students’ content needs and language levels, thus increasing disengagement [74,79]. The courses were designed and delivered with the expectation that all students would successfully cope with the linguistic and academic aspects, which often proved incorrect [82]. Some students complained about poor communication channels (often in local languages) regarding the courses offered [79].

Another theme focused on **inadequate self-access support** [53,82,89,93], i.e., access to facilities and programmes organised by home institutions to help students improve their academic English skills. Some students were ‘critical of the lack, or limited availability’ of support centres or classes [82] and, when available, of the relevance of these to their needs [89]. Although many students were already too overloaded with their EMI classes and assignments to attend additional classes, some students felt the need to attend such programmes improved their composition and spoken English skills [53,93].

Finally, like support centres, some of the **English for Academic Purposes (EAP) courses did not address students' needs** [13,82,89]. For example, some students complained these courses were 'irrelevant' and 'of little value' because lecturers taught the courses in English in the same way other content classes were taught [13,89], or 'used methodologies that did not suit the beginners' [82]. Overall, even from this limited number of studies a strong connection can be seen between institutional policy implementation and classroom experiences.

These findings highlight several crucial factors which might affect the ways in which learner-centred EMI is researched and practiced in the future. This synthesis suggests that the process of adopting learner-centred EMI pedagogy may not be as uniform and standardised as one might expect.

5. Discussion: Empirical and Pedagogical Implications

The aim of this study was to identify the challenges to the implementation of learner-centred EMI pedagogy by synthesizing and analysing student experiences as reported in primary qualitative research. The findings reveal that teaching practices and learning environments can create obstacles to promoting learner-centred experiences in the EMI setting. These obstacles are summarised and presented in Figure 6. Five factors are further discussed in this section: (1) context-dependency; (2) multi-dimensionality; (3) domain interdependence; (4) teacher-centredness by default; and (5) sustaining the effectiveness of EMI on all levels.

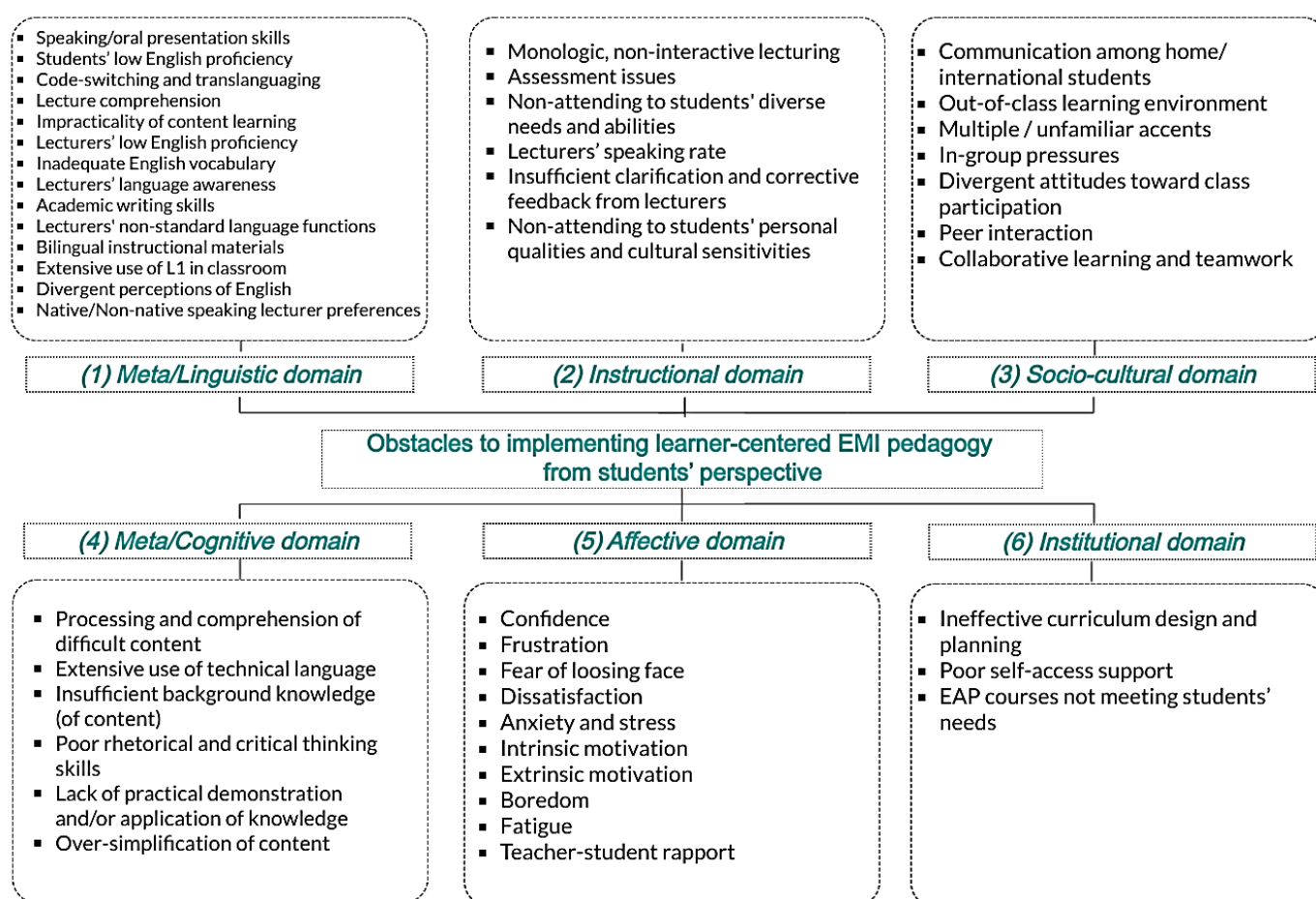


Figure 6. Summary schema of analytical domains and descriptive themes.

5.1. Context-Dependency

Perceived obstacles to the implementation of learner-centred pedagogy vary between countries, institutions, disciplines, and teacher and student bodies. For instance, while some studies explained EMI's 'dynamism and context dependency' by reference to institutional factors [29,89], other studies associated it with differences in lecturer profiles (e.g., age, experience, English proficiency, subjects taught, country of residence) and, crucially, access to faculty development and EMI certification [47]. EMI's context-dependency is reflected especially vividly in the differences among student experiences and perceived challenges across classrooms in different countries and jurisdictions [40,49,50,55,78,96,101]. While researchers stress the importance of 'context-sensitive ways to implement EMI' and 'EMI curriculum innovation' amidst growing multilingualism in HE [16,89], an important question that remains to be tackled by future research is: whether, in the absence of clear goals and objectives due to the varying contexts, conceptualisations and purposes of EMI among faculty and students, learner-centred pedagogies can be sustainably implemented in diverse EMI classrooms around the world, and if so, how is this to be accomplished?

While answers to this question will depend on the extent and targeted nature of future studies (i.e., by using learner-centred pedagogy as their primary focus, which is scarce in the current EMI literature), we are nonetheless beginning to understand that the high contextuality of EMI is a natural and an inevitable process and not necessarily an impeding issue for EMI's success. Evidence from the studies synthesised here suggest that every one of the six analytic domains could also be seen as a 'different context' and could serve as a blueprint for implementing learner-centred pedagogy along with promoting teacher training, certification, and pre-enrolment support programmes for students [43,46,102].

5.2. Multi-Dimensionality

The six suggested domains are multiple dimensions of EMI pedagogy, which is supported by related studies [7,54,103–109]. For example, Macaro's measures of quality interaction in pedagogy place emphasis on the meta-linguistic aspects of interaction (e.g., the use of a wide variety of teacher language functions), while the remaining four measures seem to have been designed as instructional (e.g., extended Initiation–Response–Feedback) as well as (meta)cognitive interventions (e.g., teachers posing questions that require high-level cognitive responses from students, allowing long student turns to help them express higher-level concepts, and giving students sufficient time to allow the thinking process to occur). In addition, lecturer–student and student–student interactions in the EMI context indeed transcend linguistic and metacognitive territories [54,103–106,110], and may be closely linked to other realms such as the socio-cultural and affective [50,108,109,111–114]. For example, several studies explored Asian university students' perceptions of their reluctance in verbal EMI classroom participation, often claiming shyness and poor speaking skills as key determinants [55,115]. It was found that such students used silence as a tool to quietly yet attentively participate and 'as a way to harmonise with the environment which is the cultural norm' in their countries [55,115]. Our synthesis reveals that all dimensions related to learner-centred EMI pedagogy might need equal attention, since some are still less well-researched than others. In particular, future studies should examine the impact of socio-cultural, (meta)cognitive, affective, and institutional issues which, according to students, affect their EMI learning experience.

Moreover, most studies thus far have focused on investigating how linguistic and meta-linguistic issues impede student learning in EMI and highlighted the importance of English proficiency for both lecturers and students. This demonstrates how critical the 'E' is in successful implementation of learner-centred pedagogical EMI [9,14,44,78,116]. This is echoed by growing research in language comprehension (e.g., how linguistic and metalinguistic ability affects student learning). However, this also means that other factors of the learning environment such as meta/cognitive, instructional, affective, socio-cultural, and institutional factors have been somewhat neglected and need to be studied in much more depth.

5.3. Domain Interdependence

While our synthesis identified six broad domains, their analysis exposed numerous connections between the domains. Domain interdependence is also evidenced by the quotations from students, which often fitted more than one domain. This indicates that learner-centred EMI pedagogy can be understood as a dynamic web of domains which are closely intertwined and affected by one another; Figure 7 provides a sample schema to support this view. From the diagram, one can see that the socio-cultural and affective domains may well be impacted if the institutional domain has not created adequate conditions to prepare students linguistically and cognitively to enroll in EMI courses or, for the same reasons, not trained lecturers to deliver learner-centred classroom experiences.

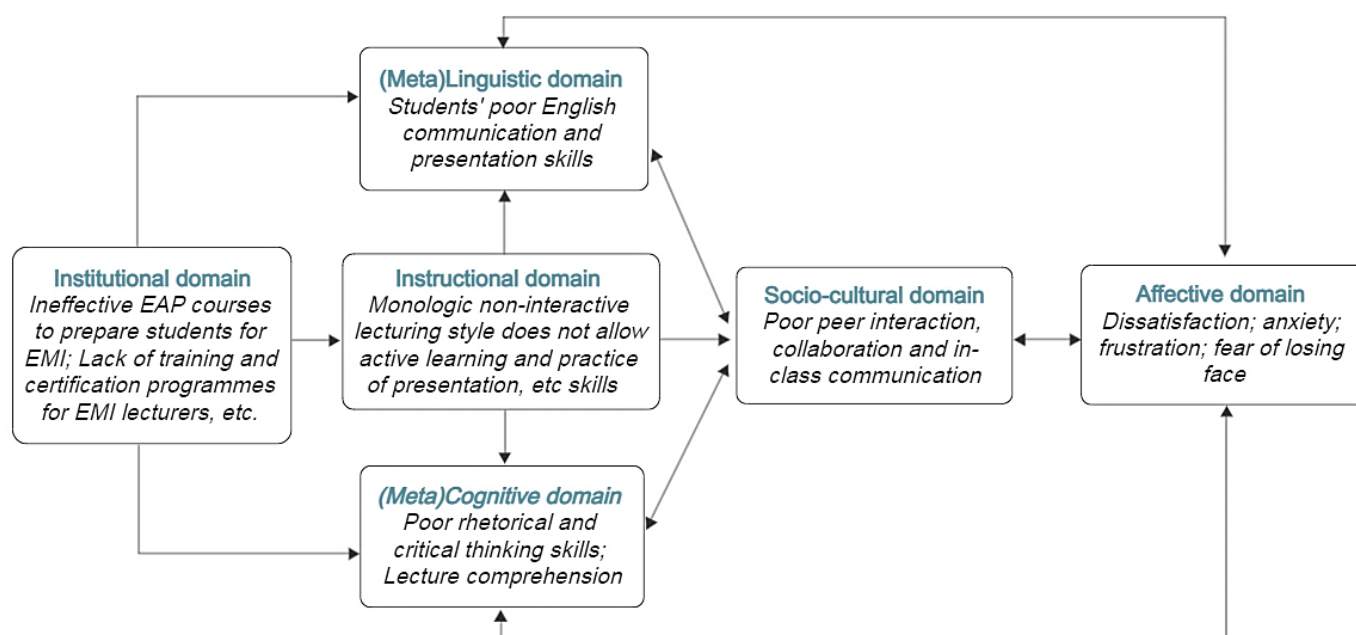


Figure 7. A sample schema of interdependence among domains and themes.

In addition, while observing various ways in which the reviewed studies labelled and classified students' perceived obstacles to implementing learner-centred pedagogy in EMI, we found that the content of quotations from the different studies were often similar, suggesting that despite varying geographic and institutional contexts [5,51] students often voiced similar experiences and concerns [6,12,64,84,86,87]. This strongly suggests that even under very diverse interpretations of EMI there is something universal in the expectations of learner-centred experiences for students taking EMI content courses.

5.4. Teacher-Centredness by Default

This study found that despite growing awareness in recent years among EMI scholars about the needs and anxieties of students attending EMI courses in HE, in most of the reviewed contexts English Medium Instruction continues to be associated with a teacher-centred learning experience. One possible explanation is that, by default, many EMI lecturers in the selected studies prioritise transmitting content knowledge primarily through monologic lectures, in some cases with limited classroom interaction [12,30,52,53,64,67,79,84]. Participant students in the reviewed studies voiced their concerns with teacher-centred classrooms and the fact that the quality of their learning was evaluated based on their ability to correctly reproduce knowledge provided by teachers [6,65,66,72,78,84,88]. This synthesis has found strong evidence pointing to lecturers' overuse of didactic modes of teaching and the resulting negative impact on the (meta)cognitive, affective, and socio-cultural aspects of students' content learning in English.

It is understandable, given the nature of EMI courses with a focus on content delivery rather than language learning and the fears that lecturers have about their own language proficiency, that lecturers may tend to fall back on a monologic approach. Teacher-centred pedagogies have traditionally been associated with formal and hierarchical relationships among lecturers and students [36,117,118], with students perceiving themselves as the ‘consumers’ and lecturers as the ‘providers’ of knowledge [52,53,66,90,91,119,120]. However, it is clear that EMI institutions and lecturers need to find effective solutions in order to integrate learner-centred pedagogy into EMI course design and delivery.

5.5. Sustaining the Effectiveness of EMI on All Levels

Finally, our results have implications for sustaining the effectiveness of EMI on three levels:

1. On a micro-level, the success of both HE internationalisation and EMI pedagogy depends on how effectively such programmes can create inclusive environments to sustain students’ learning, motivation, and classroom engagement. As we observed from numerous studies, even ‘small’ issues such as ‘fear of losing face’ or ‘multiple accents in multicultural EMI classrooms’ can impair student learning and satisfaction in the long run when not addressed [13,68,77,95].
2. On a meso-level, implementing an effective and learner-centred EMI pedagogy requires a sustainable institutional strategy to train and possibly certify content lecturers. Crucially, such measures could also focus on facilitating collaboration and coordination between content lecturers and language instructors in a systematic manner [3–6].
3. On a macro-level, the success of EMI ultimately depends on how faculty and university administrators perform on the previous two fronts, as they are critical for sustaining international student mobility and inter-university partnerships as strategic objectives of the internationalisation of HE [2].

6. Conclusions

6.1. Overview of Findings

This synthesis has confirmed the findings of previous research in that many students believe in the usefulness of the EMI experience in terms of gaining new content knowledge, enhancing English language skills, and improving the chances of future employment and career growth. The key obstacles to such successful participation can be categorised into many themes, including teacher-centred pedagogical approaches, lack of language awareness by lecturers, and students’ own unpreparedness to effectively participate in EMI courses, among many others. The findings of this synthesis are consistent with previous studies that highlight the critical role of language and academic skills from the perspective of both students and lecturers [9–11], as well as the need for dialogic, interactive, and multimodal pedagogical approaches in order to ensure the effective implementation of EMI [7,42,56,121,122].

Consequently, this study has made several important contributions to the literature on EMI. First, by synthesizing qualitative evidence, we have identified six types of challenges for implementing learner-centred EMI pedagogies across diverse geographic and institutional contexts. Second, this study discussed five strategic points which EMI faculty and administrators can use to design effective interventions, improve student satisfaction, and promote the internationalisation of university programmes. Third, the study has found many micro-level pedagogical issues within these six domains, some of which require further research and validation. Finally, this study contains useful implications with regard to sustaining the effectiveness of EMI on three levels in the context of HE internationalisation.

6.2. Strengths and Limitations

An extensive primary qualitative literature search was conducted in order to achieve the study’s goals. In addition, this is the first study to use a systematic thematic synthesis of primary qualitative research to examine students’ views and experiences of EMI. The review process was transparent, systematic, and included empirical studies from a variety

of academic subjects and geographies. Furthermore, rigorous article eligibility criteria allowed for stronger internal validity. We thoroughly followed the ENTREQ, CASP and COREQ protocols in conducting this synthesis.

However, since we did not attempt to stratify our findings using various EMI models and typologies such as different purposes of EMI, diverse curriculum models, EMI introduction and access models, etc. [7,28,30], the findings of this study may not be readily applicable to specific EMI contexts. Therefore, future review studies in specific and unique contexts may be warranted. Additionally, while the overall findings from this synthesis are based on insights gathered from a large sample of 1769 university and college students in 20 countries and jurisdictions, the findings from several articles included in this review were themselves limited by small sample sizes [74,78,84,85].

Another limitation of this study is that all 40 studies that met the inclusion criteria were primary qualitative studies (i.e., they used in-depth interviews, classroom observation, focus groups, student journals, and open-ended surveys as their primary data). In doing so, our study has strictly followed the guidelines [63]. However, since the term ‘primary’ remains ill-defined in this context, we excluded papers ($N = 61$) which used mixed methods even though they featured smaller-scale interviews and focus groups to triangulate their primary quantitative results. Since several previous synthesis studies in other fields have included mixed methods studies [123,124], future EMI synthesis studies might consider adopting a similar approach.

Finally, the samples from the included studies were selected from very diverse student populations, covering both home and international students as well as those studying in undergraduate, graduate, postgraduate and doctoral EMI programmes. Although we recognise that this diversity of respondents and samples may affect the characterisation of challenges for the implementation of learner-centred pedagogy, our aim was to define the commonalities among this diverse population. Therefore, we focused on the content of respondents’ quotations, not their personal characteristics. Given that diverse populations were included in the synthesis, we are convinced that our findings cover a wide range of student views on the challenges in implementing learner-centred EMI.

Author Contributions: Conceptualisation, M.I.; writing—original draft, M.I.; methodology, M.I., T.K.F.C. and J.D.; data curation, M.I., Y.Y. and N.D.; visualisation, M.I.; software, M.I.; investigation, M.I. and T.K.F.C.; writing—review and editing, M.I., T.K.F.C., J.D. and Y.Y.; project administration, M.I. and Y.Y.; funding acquisition, M.I. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the Japan Society for the Promotion of Science (JSPS) Grant-in-Aid for Scientific Research Category C; number 21K00701.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: All data presented are available in the paper.

Acknowledgments: The authors would like to thank two anonymous reviewers for their helpful suggestions and comments.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Descriptors of empirical studies included in the synthesis.

#	Author Year [Ref] Document Type	Location	Sample Size, EMI Subject	Design (Data Collection; Data Analysis)	Key Research Question(s)	Quality Appraisal	
						CASP 10-Item Check List [60]	COREQ 32-Item Check List [61]
1.	Alhassan et al. 2021 [91] Journal article	Sudan	N = 21 Business	Ethnographic research (Semi-structured Interviews, observations, and collection of documents; Content analysis).	What challenges do Sudanese EMI business students experience in EMI courses? To what extent do these problems impact students' academic performance?	Passed	Passed
2.	Baker & Fang 2020 [98] Journal article	Mainland China (and UK)	N = 45 Various EMI courses	A qualitative interpretive design (Open-ended questionnaire responses, interviews and focus groups; Thematic framework approach).	To what extent do students develop an awareness of and/or identity as an intercultural citizen because of undertaking EMI programmes in a university abroad?	Passed	Passed
3.	Chalapati et al. 2018 [79] Journal article	Taiwan	N = 64 International tourism and hospitality	A qualitative design (Semi-structured, focus group interviews; Thematic framework approach).	What are the learning experiences of local and international students, and what barriers do they face in an EMI degree programme at a private university?	Passed	Passed
4.	Ding & Stapleton 2016 [81] Journal article	Hong Kong SAR	N = 9 Various EMI courses	A qualitative multiple case study design (semi-structured interviews, classroom observation; Thematic framework approach).	What major problems do students encounter while adapting to the EMI education?	Passed	Passed
5.	Doiz & Lasagabaster 2018 [68] Journal article	Spain	N = 28 Various EMI courses	A qualitative interpretive design (Focus group interviews and discussions; Thematic framework approach).	How are teachers' and students' ideal L2 self-manifested in EMI? What are the teachers' and students' reflections on the EMI experience?	Passed	Passed
6.	Doiz et al. 2013 [70] Journal article	Spain	N = 27 Various EMI courses	A qualitative interpretive design (Focus group discussions; Thematic framework approach).	What does internationalisation mean to the university community? How much does the community value EMI?	Passed	Passed

Table A1. Cont.

#	Author Year [Ref] Document Type	Location	Sample Size, EMI Subject	Design (Data Collection; Data Analysis)	Key Research Question(s)	Quality Appraisal	
						CASP 10-Item Check List [60]	COREQ 32-Item Check List [61]
7.	Fareed et al. 2019 [66] Journal article	Pakistan	N = 104 Various EMI courses	A qualitative interpretive design (In-depth interviews; Thematic framework approach).	What are the perceptions of school, college and university teachers and students about the medium of instruction?	Passed	Passed
8.	Galloway & Ruegg 2020 [89] Journal article	Japan and Mainland China	N = 29 Various EMI courses	A qualitative interpretive design (Open-ended questionnaire responses, interviews and focus groups; Thematic framework approach).	What are the core principles of EMI? How can students studying through the medium of English be supported? What are the needs of the international student body?	Passed	Passed
9.	Hamid et al. 2013 [76] Journal article	Bangladesh	N = 54 Various EMI courses	A qualitative interpretive design (semi-structured interviews, classroom observations; Inductive content analysis).	How do teachers and students develop language practices, ideologies and institutional othering in a private university in Bangladesh?	Passed	Passed
10.	Han et al. 2020 [95] Journal article	Mainland China	N = 25 Various EMI courses	A qualitative interpretive design (In-depth interviews; Thematic framework approach).	What challenges do local students experience when working with international students?	Passed	Passed
11.	He & Chiang 2016 [86] Journal article	Mainland China	N = 60 Various EMI courses	A qualitative interpretive design (Open ended reports; Thematic framework approach).	English-medium education aims in accommodating international students in Mainland Chinese universities, and how well are they working?	Passed	N/A (No inter- views/focus groups used)
12.	Henry & Goddard 2015 [69] Journal article	Sweden	N = 32 Various EMI courses	A qualitative discourse analysis (Semi-structured interviews; Discursive analysis).	Does identity play a role in explaining Swedish students' enrolment in an EMI programme?	Passed	Passed
13.	Hino 2017 [85] Book chapter	Japan	N = 4 Various EMI courses	A qualitative interpretive design (Case studies, class observation, class video recording, open-ended questionnaire; Content analysis).	How could EMI help students acquire communicative abilities in EIL, including linguistic, sociolinguistic, and interactive?	Passed	N/A (No inter- views/focus groups used)
14.	Holi Ali 2020 [65] Journal article	Oman	N = 12 Engineering	A qualitative interpretive design (Semi-structured interviews; Inductive content analysis).	How did Omani engineering students respond to EMI challenges?	Passed	Passed

Table A1. Cont.

#	Author Year [Ref] Document Type	Location	Sample Size, EMI Subject	Design (Data Collection; Data Analysis)	Key Research Question(s)	Quality Appraisal	
						CASP 10-Item Check List [60]	COREQ 32-Item Check List [61]
15.	Hua 2020 [52] Journal article	Taiwan	N = 30 Psychology	A qualitative interpretive design (Qualitative open-ended questionnaire and focus group discussions; Content analysis).	What are the factors facilitating or hindering local students' EMI learning? What are their suggestions to facilitate EMI experiences?	Passed	Passed
16.	Huang & Jhuang 2015 [88] Journal article	Taiwan	N = 11 Various EMI courses	A grounded theory (Classroom observations and semi-structured interviews; Thematic framework approach).	What types of affordances do students in these two types of EMI contexts perceive and accept? What factors might inform these affordances?	Passed	Passed
17.	Huang 2018 [84] Journal article	Taiwan	N = 4 International Business, Accounting	A qualitative multiple-case study design (semi-structured interviews, learning stories and class observations; Reconstructive thematic analysis).	What constitutes learner resistance during studying at an EMI course? Why do learners construct their resistance, and in what ways?	Passed	Passed
18.	Karakas 2017 [80] Journal article	Turkey	N = 20 Various EMI courses	Mixed methods with qualitative data as a primary instrument (Semi-structured interviews; Thematic framework approach).	Do students prefer NESTs, NNESTs, or both for content and language-focused courses? What factors influence students' preferences towards NNESTs and NESTs?	Passed	Passed
19.	Kuteeva 2019 [78] Journal article	Sweden	N = 5 Various EMI courses	A qualitative interpretive design (In-depth interviews; Content analysis).	What are local and international students' conceptualisations of English and positioning in the context of an English-medium university?	Passed	Passed
20.	Lan 2020 [77] Journal article	Taiwan	N = 42 Various EMI courses	Narrative approach (Semi-structured interviews and reflective journals; Thematic framework approach).	How did the participants invest in non-native speaker intercultural interaction? What were the participants' imagined communities?	Passed	Passed

Table A1. Cont.

#	Author Year [Ref] Document Type	Location	Sample Size, EMI Subject	Design (Data Collection; Data Analysis)	Key Research Question(s)	Quality Appraisal	
						CASP 10-Item Check List [60]	COREQ 32-Item Check List [61]
21.	Lin 2017 [73] Journal article	Taiwan	N = 82 Various EMI courses	Ethnographic research (semi-structured interviews; Thematic framework approach).	How do local and international students perceive, interpret, and adapt their in-class behaviours in multicultural EMI classrooms?	Passed	Passed
22.	Malavskaja 2017 [75] Journal article	Latvia and Russia	N = 24 Various EMI courses	A qualitative interpretive design (Open ended questionnaire, Semi-structured interviews; Thematic framework approach).	To what extent does the note-taking process depend on students' skills or lecturers' competence in delivering coherent and cohesive EMI lectures?	Passed	Passed
23.	Pitkänen et al. 2013 [71] Journal article	Finland	N = 60 Various EMI courses	A qualitative interpretive design (open-ended electronic questionnaire; Content analysis).	Why do Finnish students apply to study in graduate EMI programmes? What challenges, advantages and disadvantages do they perceive when doing so? Do they feel linguistically able to cope with their studies?	Passed	N/A (No inter- views/focus groups used)
24.	Rowland and Murray 2019 [53] Journal article	Italy	N = 18 Biomedical sciences	A qualitative interpretive design (Semi-structured interviews and focus group discussions; Content analysis).	What are lecturers' and students' perceptions concerning the adequacy of their own and each other's English language proficiency?	Passed	Passed
25.	Sahan 2020 [94] Journal article	Turkey	N = 120 Engineering	Classroom observation (Audio recording and observation; Thematic framework approach).	How do teachers and students use code-switching to support content learning in an ELF classroom setting?	Passed	N/A (No inter- views/focus groups used)
26.	Salaberri- Ramiro & Sánchez-Pérez 2018 [64] Journal article	Spain	N = 310 Various EMI courses	A qualitative interpretive design (Open ended questionnaire survey; Thematic framework approach).	What are the factors that motivated students to participate in a bilingual course? What changes would they introduce to feel more motivated to participate in bilingual courses in the future?	Passed	N/A (No inter- views/focus groups used)

Table A1. Cont.

#	Author Year [Ref] Document Type	Location	Sample Size, EMI Subject	Design (Data Collection; Data Analysis)	Key Research Question(s)	Quality Appraisal	
						CASP 10-Item Check List [60]	COREQ 32-Item Check List [61]
27.	Sibomana 2016 [82] Journal article	South Africa	N = 21 Education	A grounded theory (semi-structured interviews; assignment tasks, lecturer feedback; Thematic framework approach).	What is the nature of challenges faced by the students? What are the students' coping strategies? What are the effects of support offered by the university?	Passed	Passed
28.	Somniso et al. 2016 [93] Journal article	South Africa	N = 9 Various EMI courses	A qualitative interpretive design (semi-structured interviews; Thematic framework approach).	What coping strategies do students from the DRC employ to overcome their learning challenges in English Medium Instruction?	Passed	Passed
29.	Song & Lin 2020 [96] Journal article	Mainland China	N = 20 Various EMI courses	Ethnographic research (Observation and interviews; Content analysis).	How do students in EMI programmes engage in translingual practices in different social spaces?	Passed	Passed
30.	Song 2020 [97] Journal article	Mainland China	N = 51 Political studies	Grounded theory (Classroom observations, Semi-structured interviews; Thematic framework approach).	How has being critical been understood and practiced in relation to students' intercultural experiences in EMI Master's degree programmes?	Passed	Passed
31.	Soruç & Griffiths 2018 [12] Journal article	Turkey	N = 39 International Relations, Psychology	A qualitative interpretive design (videorecording, open-ended questionnaire, stimulated-recall interviews; Thematic framework approach).	What difficulties do students generally have in an EMI classroom? What strategies do they use to deal with difficulties? What are their views regarding the EMI phenomenon in Turkey?	Passed	Passed
32.	Studer 2014 [87] Journal article	Switzer-land	N = 40 Natural Resource Sciences	A qualitative interpretive design (Focus group discussions, stimulated recall method; Thematic framework approach).	What are German-speaking students' perceptions of their lecturers' L2 (EMI) competence in the science classroom?	Passed	Passed
33.	Sung 2017 [74] Journal article	Hong Kong SAR	N = 1 Various EMI courses	A narrative inquiry approach (in-depth interviews, elicited written self-reports, class observations; Content analysis).	How did the student negotiate her identities in the L2 university classroom when participating in various classroom oral activities? How did the student's classroom participation change over time?	Passed	Passed

Table A1. Cont.

#	Author Year [Ref] Document Type	Location	Sample Size, EMI Subject	Design (Data Collection; Data Analysis)	Key Research Question(s)	Quality Appraisal	
						CASP 10-Item Check List [60]	COREQ 32-Item Check List [61]
34.	Tatzl 2012 [72] Journal article	Austria	N = 74 Business, Engineering	A qualitative interpretive design (open-ended questionnaire; semi-structured interviews; Content analysis).	What are Austrian lecturers' and students' attitudes towards EMI-based master's programmes? What are the perceived best practices? How do they perceive the challenges of EMI implementation?	Passed	Passed
35.	Trent 2008 [92] Journal article	Hong Kong SAR	N = 8 English for business and economics	Ethnographic study (semi-structured interviews, class observations and recordings of classroom interaction; Content analysis).	How can oral classroom participation by undergraduate students be promoted in English-medium universities?	Passed	Passed
36.	Wang & Curd- Christiansen 2018 [67] Journal article	Mainland China	N = 37 Business management	Ethnographic research (Semi-structured Interviews, classroom observations, and collection of documents; Content analysis).	What are the contexts and pedagogical realities that gave rise to translanguaging practices in EMI programmes? How are students as individual agents engaged in translanguaging practices?	Passed	Passed
37.	Yeon 2018 [83] Doctoral thesis	South Korea	N = 15 Various EMI courses	A qualitative interpretive design (semi-structured in-depth interviews; class observation; Content analysis).	How do learners accept and act on the identities, practices and resources available to them in EMI courses at a large public university in South Korea?	Passed	Passed
38.	Yeung 2020 [90] Journal article	Hong Kong SAR	N = 79 Various EMI courses	A qualitative interpretive design (Focus groups and in-depth interviews; Thematic framework approach).	Do teachers and students have difficulties using EMI? How do they cope with these difficulties?	Passed	Passed
39.	Yu & Wright 2017 [6] Journal article	Hong Kong SAR	N = 124 Various EMI courses	A qualitative interpretive design (Focus group interviews; Content analysis).	How do local, Mainland Chinese and international students perceive the main challenges to academic adaptation?	Passed	Passed
40.	Yu et al. 2020 [13] Journal article	Macao SAR	N = 14 Various EMI courses	A qualitative interpretive design (Semi-structured interviews and reflective journals; Thematic framework approach).	What are the perceived benefits and losses of Mainland Chinese students during EMI learning?	Passed	Passed

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