

# Navigating the Global Shift: A Qualitative Systematic Review of English as a Medium of Instruction (EMI) in Higher and Secondary Education

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## Abstract

The global proliferation of English as a Medium of Instruction (EMI) has transformed higher and secondary education, driven by the dual imperatives of internationalization and economic competitiveness. Following the PRISMA guidelines, this review synthesizes 26 empirical studies and critically evaluates the impact of EMI, considering attitudes, competencies, classroom interactions, and teacher-student outcomes. This systematic review identifies a tension between the unconditional requirement that English serves as the standard gateway to global civic identity or work mobility and the highly challenging effective implementation of EMI, owing to several pedagogical complications. The review's significant implications are that: (1) "English-only" policies are highly inconsistent with the pedagogical approach of translanguaging; (2) the prerequisite for effective classroom interactions is the teacher's self-efficacy beliefs, rather than linguistic skills; (3) the "content effect" of EMI significantly harms academic outcomes, especially among less academically proficient groups; and (4) inadequate institutional support infrastructure exists for pedagogical retraining, particularly the authorization requirements for valid certification. The review concludes that, to implement EMI effectively, institutions must abandon the instrumental instinct, which serves as the primary driver, and instead acquire appropriate pedagogical skills for content-based learning rather than linguistic learning alone.

## 1. INTRODUCTION

A rapid and widespread linguistic change that has become the current trend in the higher education sector is the transition to English as a Medium of Instruction (EMI) in non-Anglophone settings. This is commonly referred to as a "runaway train" (Wingrove, 2025), whereby the English language is used to deliver academic courses to students in regions where the first language (L1) of the majority is not English (Dearden, 2015; Macaro, 2018). More recent definitions also emphasize that EMI is not a single uniform practice, but a range of educational arrangements in which academic content is taught through English in contexts where other languages have

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traditionally served as the main medium of instruction (Rose et al., 2021). Although in its earliest forms, EMI was a phenomenon of Northern Europe, it is currently a truly global phenomenon, spreading in a predatory manner into Asia, the Middle East, and Latin America (Dearden & Macaro, 2016). This expansion has made EMI one of the most visible consequences of the internationalization, or “Englishization,” of contemporary education, especially in higher education systems seeking greater global visibility (Galloway et al., 2020).

The reason for the linguistic change is complex and operates at both the macro (national/global) and meso (institutional) levels. At the macro level, the trend of globalization and the advent of the so-called knowledge economy have made English the unchallenged lingua franca of science, technology, and business. Governments see EMI as a modernization and economic integration strategy. In this sense, EMI is frequently promoted not only as a language policy, but also as an educational, economic, and symbolic policy through which institutions and nations attempt to position themselves within global academic markets. For example, in the independent countries of the Gulf Cooperation Council (GCC), including Oman and Saudi Arabia, EMI is specifically associated with national development programs and the concept of Omanisation, which is oriented toward substituting expatriate employees with nationalized, bilingual professionals (Al-Riyami & Dayananda, 2022). On the same note, in East Asia, other countries, such as China and South Korea, encourage EMI to enhance their soft power and produce internationally competitive citizens who can navigate global markets (Muthanna & Miao, 2015).

The institutional level is often market- and instrumentally motivated. Universities implement EMI to improve their international rankings (e.g., QS World University Rankings), in which international faculty and student ratio scores are of paramount importance. The growth of EMI is therefore closely linked to institutional branding, student recruitment, and the desire to attract international staff, students, partnerships, and research opportunities. In this context, Wingrove (2025) defines EMI as primarily associated with institutions that are diverse, extensive, globally focused, and research-intensive, and that have the means to signal prestige by offering English-taught courses. Moreover, the loss of domestic student populations in certain areas has compelled universities to internationalize their curricula to attract fee-paying international students (Doiz et al., 2013). As a result, English has ceased to be a subject in foreign languages and has become a survival skill in higher learning institutions. However, the institutional adoption of EMI does not automatically guarantee pedagogical readiness. Richards and Pun (2023) argue that EMI varies considerably across contexts, curricula, teachers, students, assessment practices, and institutional goals, which means that EMI programs cannot be evaluated as though they were a single homogeneous model.

Despite its commonness, EMI remains a fuzzy concept, often conflated with Content and Language Integrated Learning (CLIL). Although CLIL (predominant in European secondary schools) explicitly integrates content and language delivery, EMI in higher education typically emphasizes content delivery, with language acquisition treated as a by-product. This distinction is important because CLIL is usually designed with dual aims—content learning and language learning—whereas EMI often prioritizes disciplinary content while assuming that language development will occur incidentally. This is one of the contested points due to the lack of explicit emphasis on language. According to Sánchez-Pérez (2023), the notion that students will automatically develop proficiency in English merely by attending lectures on the subject matter is widespread, yet it is empirically refuted. One pedagogical gap is that many EMI content teachers do not view language teaching as part of their professional responsibility, which can leave students’ academic language needs insufficiently supported (Airey, 2012; Mancho-Barés & Aguilar-Pérez, 2020). Airey’s study directly reports that lecturers expected students to use disciplinary language but did not see teaching that language as their role, and Mancho-Barés and

[Aguilar-Pérez](#) discuss EMI lecturers' reluctance to teach or correct English. Consequently, EMI creates a tension between disciplinary expertise and language-sensitive pedagogy: content teachers may be academically qualified in their field but insufficiently prepared to support students' academic language development.

The rapid Englishization of academia has outpaced research on the pedagogical implications of this process. Although EMI research has grown substantially in the last decade, the field remains unevenly distributed across regions, disciplines, and methodological traditions. A recent bibliometric study shows that EMI research has expanded rapidly. However, the literature remains shaped by dominant geographical centers and recurring themes, including policy, internationalization, language challenges, teacher preparation, and student outcomes ([Karabay & Durrani, 2024](#)). Opponents, therefore, warn of a potential double deficit, or content penalty: students may struggle to access disciplinary content because English-language difficulties can hamper lecture comprehension and content mastery, while language development may also remain limited when content lecturers provide little systematic correction or language support ([Lin & Lei, 2021](#); [Macaro et al., 2018](#); [Mancho-Barés & Aguilar-Pérez, 2020](#)). [Lin and Lei \(2021\)](#) discuss how English proficiency affects EMI content learning; [Macaro et al.](#) review concerns about whether EMI benefits language learning without harming content learning; and [Mancho-Barés and Aguilar-Pérez](#) address the limited/uncertain correction of English by EMI lecturers. Moreover, the mental impact on stakeholders is substantial. Educators report that they can no longer teach effectively with humor or spontaneity in their L2 ([Tsui, 2018](#)), and students exhibit anxiety, silence, and frustration ([Al Zumor, 2019](#)). The transition from L1-medium secondary education to EMI tertiary education can be characterized as abrupt and unsupported; the sudden change is, in itself, termed a shock by some scholars, which exacerbates educational inequality ([Macaro, 2018](#)). These concerns suggest that EMI should not be treated simply as a linguistic switch from one medium to another. Rather, it represents a major pedagogical transformation that affects curriculum design, classroom interaction, assessment, teacher identity, student participation, and institutional responsibility.

Although individual studies on subtopics of EMI have been presented, including teacher attitudes in Europe ([Dearden & Macaro, 2016](#)) and student outcomes in Turkey ([Civan & Coskun, 2016](#)), it is necessary to synthesize these scattered findings to examine EMI implementation in a global context. The formulation of the present review questions was informed by two closely related strands in the existing EMI literature. The first strand concerns EMI as a classroom process, focusing on how teachers and students negotiate meaning, use English and other linguistic resources, manage interaction, and respond to language-related difficulties during instruction. This strand is important because EMI is not merely a policy decision; it is enacted through classroom discourse, teacher questioning, student participation, translanguaging, and feedback practices ([An & Childs, 2023](#); [Hong, 2023](#); [Thongwichit & Ulla, 2024](#)). The second strand concerns EMI as an educational outcome, focusing on whether English-medium teaching improves or restricts students' academic achievement and language development ([Civan & Coşkun, 2016](#); [Sánchez-Pérez, 2023](#)). These two strands are treated as connected rather than separate: classroom interaction and language use are conceptualized as pedagogical mechanisms that may facilitate or constrain academic and linguistic outcomes. In other words, the way EMI is practiced in the classroom may help explain why EMI produces positive outcomes in some contexts but anxiety, reduced participation, limited language development, or content-related difficulties in others. This systematic review, therefore, aims to address this gap by examining empirical research across various settings. It tries to answer the following questions:

1. How do stakeholders perceive and experience the shift to EMI?

2. How are classroom interaction and language use organized in EMI settings, and how do these practices shape teaching and learning processes?
3. What academic and linguistic outcomes are associated with EMI, and how are these outcomes connected to classroom practices, language support, and stakeholder experiences?

## 2. METHODOLOGY AND DESIGN

### Research Design

This study employs a qualitative systematic review methodology to synthesize empirical evidence on EMI. A systematic review differs from a traditional literature review in that it adheres to a rigorous, replicable protocol for searching, selecting, and analyzing studies, thereby minimizing bias and ensuring a comprehensive overview of the field. This review follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (See [Figure 1](#) for a schematic representation).

### Search Strategy and Data Sources

The data collection process involved a targeted search of major academic databases (e.g., ERIC, Scopus, Web of Science) for peer-reviewed articles published between 2015 and 2025. This time frame was selected to capture the most recent decade of empirical EMI research. This period was considered appropriate because EMI has expanded rapidly during the last decade as part of broader internationalization policies in non-Anglophone educational systems. Restricting the review to this period allowed the study to focus on contemporary EMI implementation rather than earlier conceptual or policy-oriented discussions. It also enabled the review to incorporate recent empirical developments in the field, including classroom interaction in EMI settings, translanguaging practices, teacher self-efficacy, EMI-specific professional development, content-related challenges, and academic and linguistic outcomes. Therefore, the selected time frame was intended to ensure that the review reflects current pedagogical, institutional, and stakeholder realities in EMI research. The search terms included combinations of "English as a Medium of Instruction," "EMI," "Higher Education," "Secondary Education," "Teacher Beliefs," "Student Outcomes," and "Classroom Interaction." The search was limited to studies conducted in non-Anglophone contexts where English is used to teach academic content.

To clarify the relatively small number of initially retrieved studies, the figure of 39 records does not refer to all broad keyword hits returned by the databases. Rather, it refers to the records retained after applying the review's targeted search parameters, including publication period, peer-reviewed empirical status, English-language full-text availability, non-Anglophone educational context, and direct relevance to EMI implementation, stakeholder perspectives, classroom interaction, or academic and linguistic outcomes. The search was conducted iteratively by combining the main EMI terms with context- and focus-related keywords, including higher education, secondary education, teacher beliefs, student outcomes, classroom interaction, translanguaging, teacher self-efficacy, academic achievement, and language development. This iterative process was used to avoid an overly broad set of EMI-related publications that addressed policy, language education, English for Specific Purposes, or internationalization only indirectly, while retaining studies directly aligned with the research questions of the present review.

It should be noted that after the database search was completed, all retrieved records were exported into a single screening file. Duplicate records appearing across multiple databases were identified and removed before the eligibility screening stage. Duplicates were detected by comparing article titles, author names, publication years, DOIs, and journal information. When

two or more records referred to the same publication, only one complete record was retained for screening. This duplicate-removal step was also reflected in the PRISMA flow diagram in [Figure 1](#).

### Inclusion and Exclusion Criteria

#### *Inclusion and Exclusion Criteria*

An initial pool of 39 potential articles was identified. These were screened against the following inclusion criteria:

1. **Empirical Nature:** The study must present original data (qualitative, quantitative, or mixed-methods). Theoretical papers and opinion pieces were excluded.
2. **Publication Type and Quality Assurance:** The study had to be a peer-reviewed journal article. This criterion was applied to ensure that the included studies had undergone editorial and scholarly scrutiny, thereby increasing the trustworthiness and reliability of the evidence synthesized in the review. Non-peer-reviewed sources, such as theses, dissertations, unpublished reports, conference abstracts, and opinion-based publications, were excluded.
3. **Context:** The study must be situated in a context where English is a foreign or second language (e.g., China, Turkey, Spain, Oman).
4. **Focus:** The primary focus must be on the implementation, stakeholders, pedagogy, or outcomes of EMI.
5. **Language:** The full text must be available in English.

Following the screening of titles, abstracts, and full texts, 13 articles were excluded due to lack of relevance, non-peer-reviewed status, or failure to meet the empirical criteria. This resulted in a final corpus of 26 articles included in this synthesis.

### Characteristics of Included Studies

The selected studies represent a wide geographic distribution, reflecting the global nature of EMI as shown in [Table 1](#).

**Table 1: Geographic Distribution of Included EMI Studies**

Region	Countries / Areas	Author(s) & Year
Asia	China, Taiwan, Thailand, Indonesia, South Korea	Muthanna & Miao (2015); Macaro & Han (in press); An & Childs (2023); Pack (2021); Tsui (2018); Hua (2019); Tsai (2025); Tang (2020); Thongwichit & Ulla (2024); Talaue & Kim (2020); Hong (2023)
Middle East / North Africa	Oman, Saudi Arabia, Turkey, Morocco	Ali (2020); Al-Riyami & Dayananda (2022); Al Zumor (2019); Civan & Coşkun (2016); Altay et al. (2022); Yuksel et al. (2021); Ben Hammou & Kesbi (2023)
Europe	Spain, Sweden, Cross-European	Madrid & Julius (2020); Sánchez-Pérez (2023); Malmström et al. (2025); Vander Borghet et al. (2025); Dearden & Macaro (2016); Briggs et al. (2018); Wingrove (2025)
Latin America	Mexico	Santana (2019)

## Data Analysis

The data were analyzed using thematic synthesis. Each article was read repeatedly to identify key findings, participant quotations, and the authors' interpretations. Two independent researchers conducted the coding process to ensure reliability and minimize individual bias. A double-coding procedure was employed, wherein both researchers independently coded the same 26 articles using an inductive approach. Following the initial coding, the two coders met to compare their code applications, discuss discrepancies, and reach a consensus on the final code structure. Inter-coder agreement was calculated at 89%, with all disagreements resolved through collaborative discussion. Codes were generated inductively (e.g., "linguistic anxiety," "translanguaging," "lack of training") and then grouped into overarching themes. The coding scheme moved from initial descriptive codes to broader interpretive categories and then to final themes. Initial codes included, for example, "linguistic anxiety," "instrumental motivation," "stakeholder support," "teacher self-efficacy," "lack of institutional support," "professional development," "teacher-centered instruction," "wait time," "translanguaging," "corrective feedback," "content penalty," "academic achievement," "lexical gains," and "perceived employability." These codes were then clustered into five broader thematic categories: stakeholder perceptions and experiences, teacher development and competencies, classroom interaction and language use, academic and linguistic outcomes, and institutional characteristics/support. This coding scheme allowed the synthesis to connect individual study findings with the three research questions while preserving recurring patterns across educational contexts. To facilitate systematic organization and retrieval of coded data, the qualitative data analysis software NVivo was used throughout the coding and theme development process. Five major themes emerged and are listed below.

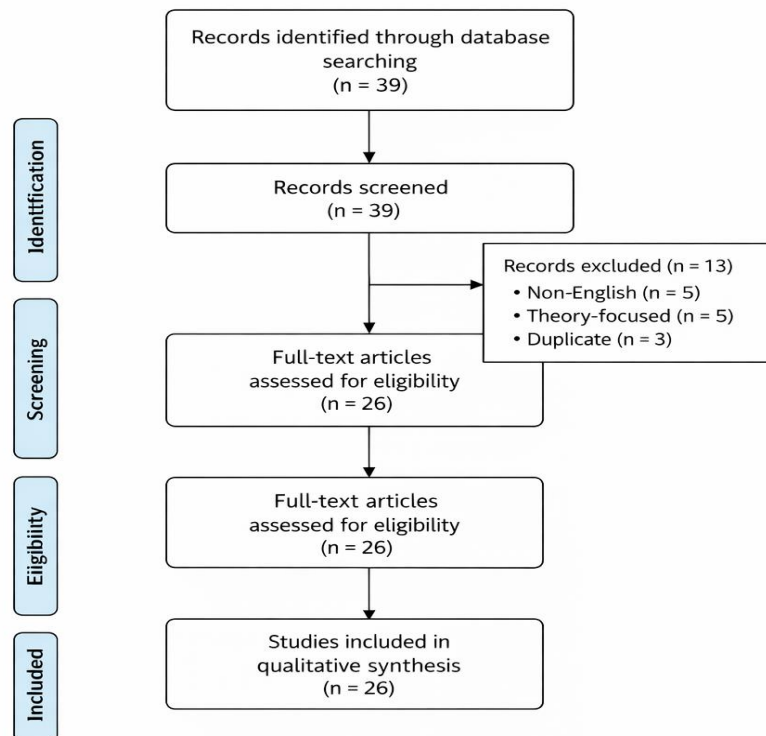


Figure 1: PRISMA Flow Diagram for the Systematic Review of (EMI)

### 3. RESULTS

This section presents the synthesized findings from the 26 empirical studies included in the review. To improve clarity and make the synthesis process more transparent, the results are organized in relation to the three research questions. First, the basic characteristics of the included studies are reported, including geographical context, educational level, participant groups, and research design. Second, the findings are mapped to the review questions: stakeholder perceptions and experiences; classroom interaction and language use; and academic and linguistic outcomes. Third, the synthesis highlights areas of convergence and contrast across studies, showing how classroom-level practices may help explain the academic and linguistic outcomes reported in the literature.

The themes reported in this section were derived through a three-stage thematic synthesis process. First, descriptive codes were assigned to recurring findings across the included studies, such as “instrumental motivation,” “linguistic anxiety,” “language readiness,” “teacher self-efficacy,” “lack of institutional support,” “teacher-centered instruction,” “wait time,” “translanguaging,” “corrective feedback,” “content penalty,” “academic achievement,” “lexical gains,” and “perceived employability.” Second, related codes were clustered into broader analytical categories. For example, codes related to motivation, anxiety, readiness, parental expectations, and teacher confidence were grouped under stakeholder perceptions and experiences; codes related to wait time, translanguaging, classroom participation, and corrective feedback were grouped under classroom interaction and language use; and codes related to GPA, knowledge transfer, vocabulary development, grammar development, and employability were grouped under academic and linguistic outcomes. Third, these analytical categories were mapped onto the three research questions so that each theme directly contributed to answering one or more RQs. Themes were retained when they appeared across multiple studies or when they provided important contrastive evidence about EMI implementation across contexts.

The analysis of the 26 articles shows that the terrain is complex, with the ideological potential of EMI often running chaotically counter to classroom realities.

#### Characteristics of the Included Studies

The 26 included studies represented a wide geographical distribution, reflecting the global expansion of English as a Medium of Instruction (EMI). The studies were conducted across Asia, the Middle East and North Africa, Europe, and Latin America. Asia was represented by studies from China, Taiwan, Thailand, Indonesia, and South Korea. The Middle East and North Africa were represented by studies from Oman, Saudi Arabia, Turkey, and Morocco. European contexts included Spain, Sweden, Austria, Italy, Poland, and broader cross-European institutional comparisons. Latin America was represented by Mexico.

Most studies focused on tertiary education, although several examined secondary education or compared secondary and tertiary EMI contexts. The participants included students, teachers, lecturers, parents, alumni, and institutions. Methodologically, the corpus included qualitative, quantitative, and mixed-methods studies. The reviewed studies used interviews, questionnaires, classroom observations, institutional records, test scores, longitudinal writing data, and large-scale institutional data. This methodological variety allowed the review to synthesize evidence from perceptions, classroom practices, and measurable academic or linguistic outcomes.

In terms of design, the qualitative studies mainly explored stakeholder experiences, teacher beliefs, classroom challenges, and language practices. The quantitative studies examined issues such as attitudes, academic achievement, language development, teaching approaches, institutional characteristics, and motivational variables. The mixed-methods studies helped

connect perception-based findings with classroom or outcome-related evidence. Overall, the study characteristics show that EMI research is empirically diverse, but still more strongly represented in higher education and in Asian, European, and Middle Eastern contexts than in Latin American and African contexts. [Table 2](#) summarizes the basic characteristics of the included studies.

**Table 2: Characteristics of the included studies**

Author(s) & Year	Context	Sample	Methodology	Key Findings
<a href="#">Al-Riyami &amp; Dayananda (2022)</a> .	Oman (Tertiary)	117 Parents	Quantitative (Questionnaire)	Parents support EMI for career benefits, but ~50% fear children's proficiency is insufficient; suggest bilingual options.
<a href="#">Al Zumor (2019)</a> .	Saudi Arabia (Tertiary)	264 Students	Mixed Methods	EMI caused "serious negative impact" on comprehension, anxiety, and frustration; students prefer Arabic for explanations.
<a href="#">Ali (2020)</a>	Oman (Tertiary)	12 Engineering Students	Qualitative (Interviews)	Students use translation, memorization, and peer support to cope; EMI is a barrier to deep understanding.
<a href="#">Altay et al. (2022)</a> .	Turkey (Tertiary)	186 Students	Quantitative (Test Scores)	In the hard sciences, L1 achievement predicts EMI success better than English proficiency; this supports the transfer-of-knowledge hypothesis.
<a href="#">An &amp; Childs (2023)</a>	China (Secondary)	15 Teachers / 30 Lessons	Mixed (Observation/Quant)	Extending "wait time" is more effective than question type for eliciting student output in EMI science classes.
<a href="#">Ben Hammou &amp; Kesbi (2023)</a> .	Morocco (Secondary)	18 Science Teachers	Qualitative (Interviews)	Teachers support EMI but feel unprepared; they rely heavily on translanguaging (L1) to ensure comprehension.
<a href="#">Briggs et al. (2018)</a> .	Global (27 countries)	167 Teachers	Quantitative (Survey)	Secondary teachers view EMI more positively for quality education than tertiary teachers; a lack of clear policy is noted globally.
<a href="#">Civan &amp; Coşkun (2016)</a> .	Turkey (Tertiary)	University Records	Quantitative (Analysis)	EMI negatively impacts GPA ("content penalty") for average students; the effect is reversed for high-performing scholarship students.
<a href="#">Dearden &amp; Macaro (2016)</a> .	Austria, Italy, Poland	25 Teachers	Qualitative (Interviews)	Teachers are concerned about low student proficiency and a lack of institutional support/resources.
<a href="#">Hong (2023)</a>	South Korea (High School/Uni)	6 Classes	Qualitative (Observation)	High school teachers provide more corrective feedback than university lecturers; feedback is generally scarce in EMI.
<a href="#">Hua (2019)</a>	Taiwan (Tertiary)	Psychology Students	Qualitative (Case Study)	Students value EMI for future careers but find it hinders immediate professional

Macaro & Han (in press)	China (Tertiary)	133 Teachers	Mixed Methods	knowledge acquisition. Teachers desire certification and PD specific to EMI (not just general English); they felt current training was insufficient.
Madrid & Julius (2020).	Spain (Tertiary)	216 Students	Quantitative (Survey)	75% had initial difficulties following bilingual classes; satisfaction was generally high, but noted deficiencies in program quality.
Malmström et al. (2025).	Sweden (Tertiary)	STEM Teachers	Quantitative	English proficiency does <i>not</i> correlate with student-focused teaching; low proficiency correlates with teacher-focused approaches.
Muthanna & Miao (2015).	China (Tertiary)	6 Grad Students	Qualitative (Interviews)	Students have very positive attitudes toward EMI for "global friendship" and leadership, despite challenges.
Pack (2021)	China (Transnational)	300 Students	Quantitative (Survey)	A strong "Ideal L2 Self" helps students persist; students who are confident in their abilities and desire integration with the global community.
Sánchez-Pérez (2023)	Spain (Tertiary)	Engineering Students	Longitudinal / Quant	EMI improved vocabulary/lexical accuracy but <i>not</i> grammar, syntax, or fluency compared to non-EMI students.
Santana (2019)	Mexico (Tertiary)	University Class	Mixed Methods	Students perceived <i>a stronger rapport with the teacher in the EMI class than in the L1 class</i> ; shared struggle may build bonds.
Talaue & Kim (2020).	Indonesia (Workplace)	139 Alumni	Quantitative	Alumni perceive EMI as providing a competitive advantage and job effectiveness in the workplace.
Tang (2020)	Thailand (Tertiary)	12 Lecturers	Qualitative (Interviews)	Lecturers face linguistic, cultural, and structural challenges; they believe students cope, but teaching requires major adaptation.
Thongwichit & Ulla (2024).	Thailand (Tertiary)	5 Teachers	Qualitative (Interviews)	Translanguaging is a key scaffolding mechanism; teachers view L1 use positively, as it helps students leverage prior knowledge.
Tsai (2025)	Taiwan (Tertiary)	Teachers & Students	Qualitative	Teachers are less positive than students about the necessity of EMI; teachers lack ESP training and feel unprepared.
Tsui (2018)	Taiwan (Tertiary)	11 Teachers	Qualitative (Interviews)	Novice EMI teachers experienced "weakening of self-efficacy"; training helped restore confidence

Vander Borgh et al. (2025).	Sweden (Tertiary)	Teachers	Quantitative	and perspective. Pedagogical training/efficacy are stronger predictors of interactive teaching than English proficiency alone.
Wingrove (2025)	Europe (Higher Ed)	3632 Institutions	Quantitative (Random Forest)	EMI is associated with large, research-intensive, resource-rich, and discipline-diverse universities.
Yuksel et al. (2021).	Turkey (Tertiary)	143 Students	Quantitative	"Growth mindset" positively predicted academic success in engineering; psychological factors are key to EMI success.

The following subsections present the thematic synthesis of these studies. Each subsection is explicitly connected to the relevant research question, making the relationship between the review questions and the findings transparent.

### The Stakeholder Lived Experience - Ambition vs. Anxiety

This subsection addresses the first research question: How do stakeholders perceive and experience the shift to EMI? This theme was developed from codes related to instrumental motivation, internationalization, employability, language anxiety, stakeholder support, parental expectations, teacher self-efficacy, and perceived lack of preparation. The synthesis shows that stakeholders generally associate EMI with internationalization, employability, prestige, and future mobility. However, this positive orientation is frequently accompanied by anxiety, concern about language readiness, reduced confidence, and dissatisfaction with institutional support.

Students always interpret EMI as an instrument they need to invest in for their future career prosperity. Graduate students in China had stated that they had a very positive attitude towards EMI due to the wish to retain global friendship, secure leadership roles, and secure international scholarship (Muthanna & Miao, 2015). Equally, an Indonesian university alumnus cited that there was a positive relationship between their EMI training and job effectiveness, and they thought the competitiveness of English proficiency in the local and global markets (Talaue & Kim, 2020). The concept of motivation is usually linked to the Ideal L2 Self; students in transnational Chinese universities who imagined themselves as a part of the global professional community were more determined to overcome the problems of EMI (Pack, 2021).

Nevertheless, this aspiration is often checked by extreme anxiety and learning disabilities. Students in Saudi Arabia claimed that EMI had a very adverse effect on their understanding of science-related knowledge, causing them to experience a sense of anxiety, frustration, tension, fear, and embarrassment (Al Zumor, 2019). This sentiment was shared in Taiwan, as psychology students believed that the language barrier prevented them from acquiring professional knowledge in the short term, even though it would be beneficial in the long term (Hua, 2019). In Spain, 75 percent of students enrolled in bilingual degree programs reported difficulties in the first few days after classes, but these improved after the first trimester (Madrid & Julius, 2020). Avoiding the cognitive load of processing complex academic material in a foreign language often leads students to adopt surface-level strategies such as memorization and translation (Ali, 2020).

Teachers often regard EMI as inevitable, yet they are very serious about its implementation. Comparative analysis of university educators in Austria, Italy, and Poland has shown that they are all anxious about the process of universalizing higher education and the poor level of both staff

and students (Dearden & Macaro, 2016). Novice EMI teachers in Taiwan experienced a weakening of self-efficacy that undermined their professional identity; they could no longer be subtle and humorous, and their teaching style became drier and more formal (Tsui, 2018).

Secondary school teachers appear slightly more idealistic in their views than their tertiary counterparts. In a comparison of teachers across 27 countries, secondary teachers reported a stronger belief that EMI was associated with a high quality of education, a finding that may be attributable to the more discipline-oriented character of secondary curricula (Briggs et al., 2018). Nevertheless, at all levels, teachers reported a lack of institutional support. Lecturers in Thailand identified linguistic, cultural, and structural challenges. Although they perceived that EMI was significant for internationalization, they found the teaching process cumbersome and required substantial adjustments (Tang, 2020).

Parents, as important stakeholders, typically welcome the shift to EMI, but with reservations about their children's preparedness. In Oman, whereas parents cited EMI as applicable for their children's future success in the workplace, only about 50 percent reported that their children did not have sufficient English to meet curriculum requirements. As a result, most parents recommended that a bilingual model, or keeping Arabic for specific courses, would facilitate content learning (Al-Riyami & Dayananda, 2022).

Taken together, these findings answer the first research question by showing that EMI is positively valued at the ideological and instrumental levels, but experienced as difficult at the pedagogical and emotional levels. Students, teachers, and parents often support EMI because of its perceived future benefits, yet they also report anxiety, insufficient preparation, and concern about whether English proficiency is adequate for successful content learning and teaching.

### Teacher Development and Competencies

This subsection extends the answer to the first research question while also preparing the link to the second and third research questions. Teacher development and competence emerged as a cross-cutting issue because teachers' beliefs, confidence, training, and pedagogical preparedness influence both classroom interaction and student outcomes.

One of the most important outcomes of this review is the lack of correlation between language proficiency levels and pedagogical quality. The belief is that the more proficient one is in English, the more effective one's EMI teaching; however, this is not the case, as EMI teaching is more complex. Malmström et al. (2025) studied STEM teachers in Sweden and found no association between self-assessed English proficiency and student-centered teaching practices. Interactive teaching was not associated with high proficiency, whereas low proficiency was associated with the so-called teacher-centered (transmission-style) methods. This suggests that although language competence is a threshold that can be used to prevent poor practice, it is insufficient to enhance good practice.

This has been supported by further studies by Vander Borgh et al. (2025), who found that pedagogical training and teaching self-efficacy were more predictive of interactive teaching than language proficiency (only). Teachers who had undergone formal training in pedagogical instruction were approximately 2.5 times more likely to adopt interactive techniques. This questions the usual institutional recruitment process that requires English-language scores as a precondition for hire.

Standard certification for EMI teachers is deficient. Nine out of ten teachers in China reported that they would like to have professional development (PD) and certificate programs that specialize not only in general English but also in teaching in their respective academic fields (Macaro & Han, *in press*). At present, few universities require or offer such training, and teachers

must undergo this pedagogical change through trial and error. The insufficient policy on required proficiency levels is also a global problem, as it applies to both secondary and tertiary settings (Briggs et al., 2018).

Teachers' and students' mindsets also play a significant role in EMI outcomes. In Turkey, students with a growth mindset (i.e., the belief that linguistic ability can be improved) were more likely to achieve good results in engineering-related courses. In contrast, students with a fixed mindset achieved worse results (Yuksel et al., 2021). This underscores the role of psychological factors in the EMI classroom; it is not only about competence but also about the belief in the power to overcome linguistic barriers.

This subsection shows that teacher competence in EMI cannot be reduced to English proficiency alone. Across the reviewed studies, pedagogical training, teaching self-efficacy, and EMI-specific professional development appear central to how teachers manage interaction, support comprehension, and respond to students' language needs. These findings, therefore, connect stakeholder experience with the classroom practices and learning outcomes discussed in the following subsections.

### Practices in Pedagogy and Interaction in the Classroom

This subsection addresses the second research question: How are classroom interaction and language use organized in EMI settings, and how do these practices shape teaching and learning processes? This theme was derived from codes related to teacher-centered instruction, reduced participation, wait time, translanguaging, corrective feedback, language scaffolding, and teacher-student rapport. The synthesis shows that EMI classroom practice is shaped by reduced interaction, teacher-centered delivery, strategic translanguaging, processing time, corrective feedback, and teacher-student rapport.

There is also a well-documented lack of interaction in EMI classrooms, as teachers tend to monopolize the conversation to ensure that the content is covered. However, the following pedagogical moves can reduce this. An and Childs (2023) found in high school science classes in China that the longer the wait time (the interval after the teacher posed a question), the longer and more convoluted students' responses were. Surprisingly, the question type (higher-order versus lower-order) was less influential than processing time. This indicates that simpler pedagogical reforms may be more effective than more complex instructional reforms in an L2 setting.

Translanguaging (the use of the L1) is an inevitable and universal coping strategy, despite official English-only policies in most institutions. The science teachers interviewed in Morocco reported that they used L1 (Arabic/Darija) to understand complex ideas and perceived their limited English proficiency as an obstacle (Ben Hammou & Kesbi, 2023). Similarly, in Thailand, educators used translanguaging as a scaffolding process, enabling students to draw on their L1 resources to construct meaning and alleviate anxiety (Thongwichit & Ulla, 2024). These results indicate that monolingual policies associated with EMI tend to conflict with the cognitive nature of learning.

The EMI teacher's position on providing language feedback is unclear. In Korea, Hong (2023) found that although schoolteachers and university lecturers provided corrective feedback on language errors, schoolteachers provided feedback more frequently and employed a broader range of feedback. Lecturers at the university are content-oriented and therefore less likely to focus on linguistic accuracy. Nevertheless, the unity of the EMI classroom can foster a special connection; in Mexico, students enrolled in EMI courses felt closer to their instructors than those in L1 courses, which suggests that the shared effort to determine how to communicate could improve teacher-student interaction (Santana, 2019).

Altogether, these findings answer the second research question by showing that the tension between English-only expectations and multilingual classroom realities shapes EMI classroom interaction and language use. Interaction tends to be constrained when teachers prioritize content transmission and linguistic control. However, it can be improved through practices such as extended wait time, strategic translanguaging, supportive feedback, and stronger teacher-student rapport. These classroom practices are not isolated from outcomes; rather, they help explain why some students experience EMI as supportive while others experience reduced participation, anxiety, and limited comprehension.

### Academic and Linguistic Outcomes

This subsection addresses the third research question: What academic and linguistic outcomes are associated with EMI, and how are these outcomes connected to classroom practices, language support, and stakeholder experiences? This theme was developed from codes related to content penalty, GPA, academic achievement, prior knowledge, knowledge transfer, vocabulary growth, limited grammatical development, language support, and employability. The reviewed studies show that EMI does not automatically lead to improved academic achievement or broad English development. Instead, outcomes appear to depend on students' prior knowledge, academic ability, English proficiency, mindset, and the degree of pedagogical and language support available in the classroom.

One of the central issues in EMI literature is whether L2 learning has detrimental effects on academic performance. A content penalty has been documented in Turkey. [Civan and Coşkun \(2016\)](#) found that EMI had adverse effects on students' grade point averages (GPAs), whereas Turkish-medium instruction showed no change over four years. This was, however, compensated for by scholarship students, which may indicate that EMI is effective among the brightest students rather than the average student. [Altay et al.](#), in turn, found that in the "hard" sciences (MPLS), success in L1 courses had the strongest predictive impact on EMI success. The results of the study were consistent with the knowledge transfer hypothesis: students who mastered the concepts in L1 could transfer them to their L2 environment.

The findings question the assumption that EMI will automatically enhance English proficiency. In a longitudinal study of engineering students in Spain, [Sánchez-Pérez \(2023\)](#) found that although EMI students increased their vocabulary and lexical accuracy, they did not differ significantly in syntax, grammar, organization, or fluency compared with non-EMI students. This implies that mere exposure to English is insufficient to develop the language in its entirety, unless students are taught the language explicitly; they might become well-versed in terminology, but grammatical standards remain stagnant.

Overall, these findings address the third research question by demonstrating that EMI yields uneven academic and linguistic outcomes. It may support vocabulary growth, international orientation, and perceived employability, but it does not consistently improve academic achievement or broader English proficiency. The outcome patterns are connected to the classroom practices identified in response to the second research question. Limited interaction, insufficient corrective feedback, and weak language support may help explain restricted linguistic gains and content-related difficulties. Conversely, supportive practices such as translanguaging, extended wait time, scaffolding, and EMI-specific teacher training may reduce the content penalty and improve participation and learning.

### Institutional Characteristics

This final subsection provides an institutional-level perspective that supports the interpretation of all three research questions. While the previous subsections focused on stakeholder experience, classroom practice, and learning outcomes, institutional characteristics help explain why EMI is adopted unevenly and why implementation quality differs across contexts.

EMI dispersal is not even. Applying machine learning to study European universities, [Wingrove \(2025\)](#) found that the best-betting institutions to offer EMI were discipline-diverse, large, internationally oriented, and research-intensive. This indicates that EMI is becoming an elite status symbol, which may lead to the introduction of a two-tier system in university education, in which, rather than being excluded, well-endowed universities consolidate their success by using English.

This institutional evidence shows that EMI implementation is shaped not only by classroom-level factors but also by institutional capacity, resources, prestige, and internationalization strategies. Therefore, the effectiveness of EMI depends on the alignment between institutional goals, teacher preparation, classroom pedagogy, multilingual support, and student readiness.

### Cross-RQ Synthesis

When the findings are considered across the three research questions, a coherent pattern emerges. Stakeholders generally value EMI because it promises internationalization, employability, prestige, and access to global academic and professional communities. However, classroom-level evidence shows that these promises are difficult to realize when EMI is implemented without sufficient teacher preparation, language support, and institutional infrastructure.

The findings on classroom interaction and language use help explain the mixed academic and linguistic outcomes. Where EMI classrooms are teacher-centered, monolingual in policy, and weak in corrective feedback, students are more likely to experience anxiety, limited participation, and restricted language development. Where teachers use scaffolding, translanguaging, extended wait time, and supportive feedback, EMI is more likely to function as a productive learning environment.

The synthesis, therefore, shows that EMI should not be understood solely as a policy aimed at changing the language of instruction. Rather, it is a pedagogical transformation that affects stakeholder identity, classroom discourse, content learning, and language development. The reviewed evidence suggests that the success of EMI depends on the alignment between institutional ambitions, teacher preparation, classroom interaction, multilingual language practices, and student support.

## 4. DISCUSSION

The synthesis of these 26 empirical studies offers a critical perspective for deconstructing the global EMI phenomenon. The results indicate an intense conflict between the neoliberal ideals of institutions of higher education and the pedagogical situation in the classroom. The themes examined in this Discussion were developed directly from the thematic synthesis reported in the Results section. Specifically, the Discussion themes correspond to the major result areas identified in the review: stakeholder perceptions and experiences; teacher development and competencies; classroom interaction and language use; academic and linguistic outcomes; and institutional characteristics. These themes were selected because they recurred across the reviewed studies and

because they help explain the relationship among EMI as an institutional policy, EMI as classroom practice, and EMI as an educational outcome.

To maintain coherence between the Results and Discussion sections, the Discussion does not introduce a separate set of unrelated themes. Instead, it interprets the same patterns identified in the Results at a higher level of abstraction. The theme of institutional stratification is derived from the Results subsection on institutional characteristics and stakeholder experience; the theme of teacher agency is derived from the Results subsection on teacher development and competencies; the theme of English-only ideology and translanguaging is derived from the Results subsection on classroom interaction and language use; and the themes of content penalty and linguistic gain are derived from the Results subsection on academic and linguistic outcomes. In this way, the Discussion moves from reporting findings to interpreting their broader theoretical and practical significance.

Five important dimensions will be examined in this discussion: EMI stratification of education, the myth of proficiency in response to teacher agency, dissonance between the policy of monolingualism and the practice of multilingualism, the cognitive cost of content penalty, and the illusion of linguistic gain.

### **Institutional Characteristics and the Stratification of EMI**

The spread of EMI is not a pedagogical decision but a strategic gambit within the marketized higher education environment worldwide. The snobbery of this movement is revealed by [Wingrove's \(2025\)](#) observation that EMI is a predominantly elite domain within universities, characterized by resource-richness and research intensity. EMI is a symbolic capital, a branding tool as a signifier (internationalization) and (quality) to potential students and ranking organizations in the world ([Dearden & Macaro, 2016](#)). This prestige, however, tends to conceal the chaotic reality of implementation. As seen in Thailand ([Tang, 2020](#)) and Saudi Arabia ([Al Zumor, 2019](#)), the pace of EMI adoption often exceeds the infrastructure capacity to sustain this trend. Institutions shift the cost of this transition to teachers and students, who must overcome linguistic, cultural, and structural barriers ([Tang, 2020](#)) without adequate training or preparation. This establishes a system of stratification in which the advantages of EMI, such as global mobility and career efficiency ([Talaue & Kim, 2020](#)), are enjoyed by students who have been highly proficient in the past or have attended elite schools. The disadvantages (anxiety, loss of content) are experienced by the average student ([Civan & Coşkun, 2016](#)).

### **Dismantling the Proficiency Myth of Teacher Agency**

The most common fallacy in the EMI policy is equating English proficiency with teaching competence. The recruitment and evaluation of institutional staff typically focus only on the Common European Framework of Reference (CEFR) levels (e.g., C1 or C2) and assume that a fluent speaker is a competent EMI teacher by default. The findings of this review rigorously refute this assumption. [Malmström et al. \(2025\)](#) and [Vander Borgh et al. \(2025\)](#) present substantial evidence from the Swedish context that high English proficiency is not associated with student-centered or interactive teaching. An educator may be a linguistic genius but pedagogically backward, resorting to transmissive lectures to convey information.

On the other hand, the experience of weakened self-efficacy, as emphasized by [Tsui \(2018\)](#), may indicate that even highly experienced teachers are affected by teaching in a second language, as they feel deskilled. They lose the delicacy, humor, and improvisation that define professional instruction and retreat into strictly scripted instruction to prevent language mistakes. This points

to an acute lack of attention in present-day EMI applications: the failure to account for pedagogical fluency. It is not only the general English classes that teachers in China desire, as [Macaro and Han \(2020\)](#) suggest, but also the specific training in how to teach their discipline in a foreign language. Lack of such certification ([Macaro & Han, in press](#); [Briggs et al., 2018](#)) constitutes negligence in an institutional responsibility. The results suggest that pedagogical training is a more important predictor of quality instruction than language proficiency alone ([Vander Borgh et al., 2025](#)), necessitating a paradigm shift in the training and assessment of EMI teachers.

### **The "English-Only" Fantasy vs. the Reality of Translanguaging**

This contrasts with top-down EMI policies, which are monolingual in ideology, and with classroom multilingual realities. Administrators often impose English-only rules on the false assumption that the more time a student is exposed to a language, the more they will learn (the Time-on-Task hypothesis). Nonetheless, teachers' views in Morocco ([Ben Hammou & Kesbi, 2023](#)) and Thailand ([Thongwichit & Ulla, 2024](#)) indicate that adherence to English-only is not pedagogically sound. Translanguaging, the use of the L1 by students, is a common practice among teachers, not an indicator of failure but a complex scaffolding technique.

Translanguaging enables the explanation of complex concepts, reduces affective filters (e.g., anxiety), and preserves rapport ([Santana, 2019](#)). When institutions demonize the use of L1, they compel teachers to adopt an underground pedagogy in which effective practices are concealed rather than disclosed. The results of [An and Childs \(2023\)](#) regarding wait time also shed further light on this pedagogical black box. The time it takes students to formulate answers in an L2 setting is very long. When teachers do not change their pacing (which may reflect pressure to cover the content), they unwittingly silence their students, leading to passive, noninteractive classes that are criticized in the literature. Thus, the English-only policy impedes deep understanding, as it forces students to choose between comprehending the material in L1 and struggling with the form in L2.

### **The Cognitive Load and Content Penalty**

The most ethically problematic discovery of this review is perhaps the confirmed content penalty. Empirical evidence supporting parents' fears in Oman ([Al-Riyami & Dayananda, 2022](#)) and students' concerns in Taiwan ([Hua, 2019](#)) is provided by [Civan and Coşkun \(2016\)](#) in Turkey, who found that learning a foreign language may undermine comprehension of subject matter. It is not merely a question of translation but also of cognitive load. When working memory is overloaded with decoding linguistic input, fewer cognitive resources are available for processing deep disciplinary information.

Nevertheless, this sanction is not homogeneous. According to [Altay et al. \(2022\)](#), in the hard sciences, a well-developed conceptual background in the L1 may be transferred to the L2 context. This is an affirmation of the Interdependence Hypothesis that predicts that EMI is most effective when developed on a practical L1 academic foundation. This is dangerous because programs provide EMI too quickly, thereby severely disrupting the L1 basis before abstract concepts have been mastered. The positive GPA results for scholarship students, on the other hand ([Civan & Coşkun, 2016](#)), further suggest that EMI may be contributing to educational inequality, as an enrichment program for the academic elite and a barrier for the majority.

### **The Illusion of Linguistic Gain**

Lastly, the data refute the instrumental justification for EMI, namely that it kills two birds with one stone by teaching content and language simultaneously. The longitudinal study conducted by

Sánchez-Pérez (2023) is particularly damaging to the language-learning model of osmosis. The fact that students enrolled in EMI showed a beneficial effect on vocabulary but no substantial improvements in syntax, grammar, or writing structure indicates that EMI can develop receptive and passive fluency but not productive accuracy. In the absence of explicit emphasis on form (Focus on Form), students may develop a pidginized form of academic English that is used only to follow lectures, rather than to communicate accurately and professionally. This is in line with Hong's (2023) observation that university lecturers do not provide corrective language feedback very often. When content teachers fail to rectify language issues, and language teachers are deprived of the situation, students are left in a vacuum of feedback, suggesting that EMI, as currently practiced, is, in most cases, only English-Medium Exposure rather than real instruction.

### Affective Dimensions and Ideal L2 Self

The emotional impact of EMI is also highlighted in the review. Although a student might have a powerful Ideal L2 Self (Pack, 2021), their Actual Self tends to develop a sense of inadequacy as a global professional. The affective filter, as described by Al Zumor (2019), refers to anxiety, frustration, and fear that impede the processing of input. Nevertheless, Santana (2019) offers some light at the end of the tunnel: learning a foreign language together can create a special bond between students and teachers. This may indicate that when teachers are willing to be vulnerable about their own linguistic struggles and adopt a non-punitive, supportive approach, the EMI classroom can become a community practice rather than a place of anxiety.

Overall, the Discussion themes were selected because they synthesize and interpret the same evidence reported in the Results section. The institutional theme explains why EMI is adopted and why it is unevenly distributed. The teacher-development theme explains why English proficiency alone is insufficient for effective EMI teaching. The classroom-interaction theme explains how EMI is enacted through discourse, translanguaging, feedback, and participation. The academic- and linguistic-outcome themes explain why EMI produces uneven effects on content learning and English development. Finally, the affective theme connects stakeholder perceptions with the emotional and motivational dimensions of EMI implementation. Together, these themes demonstrate that EMI is not only a language policy, but also a pedagogical, institutional, and affective transformation.

## 5. CONCLUSION

This qualitative systematic review synthesized 26 empirical studies to examine the implementation and effects of English as a Medium of Instruction worldwide. The review established that the desire for internationalization and career mobility is strong and drives EMI, but its implementation is usually flawed. Stakeholders are faced with a lot of anxiety and the absence of support. They tend to recruit teachers based on their language proficiency rather than their pedagogical competence, even though the latter is more decisive for student learning. Pedagogically, the ideal of English-only conflicts with the need to use translanguaging, and the absence of explicit language assistance results in scant linguistic progress in areas such as grammar and writing. Moreover, there is a physical penalty for content that jeopardizes the very purpose of higher education: knowledge of the subject.

Akin to all research, this review has several limitations. First, this review synthesizes studies conducted in both higher and secondary education. Although this inclusive scope was adopted to provide a comprehensive account of EMI across educational settings, the two levels differ considerably in institutional aims, curriculum organization, teacher roles, learner ages,

stakeholder expectations, and assessment practices. Therefore, the findings should not be interpreted as implying that EMI operates identically in secondary and higher education. Rather, the synthesis should be read as identifying broad cross-contextual patterns, while acknowledging that more level-specific systematic reviews are needed to examine the distinct challenges, classroom practices, stakeholder perspectives, and outcomes associated with EMI in each educational sector. Second, although the geographical area covered is global, it is rather region-focused, with the highest concentration in China, Turkey, and Europe, and the number of studies in South America or Sub-Saharan Africa is lower, which can bias the outcome in favor of particular cultural educational patterns. Third, most studies relied on self-reported data, such as interviews and questionnaires, on proficiency and teaching practices. Beliefs about self-efficacy do not necessarily correlate with actual classroom performance. Fourth, the dataset lacks longitudinal studies on the subject. However, exceptions exist, such as [Sánchez-Pérez \(2023\)](#) and [Civan and Coşkun \(2016\)](#), making it difficult to investigate the long-term effects of EMI on career paths or lifelong learning. Lastly, the content penalty is difficult to disentangle from other confounding factors, such as student background and institutional quality. These findings carry significant implications for policy and practice. In terms of policy, pervasive "English-only" mandates must be abandoned in favor of multilingual or bilingual frameworks that legitimize translanguaging as a valid pedagogical tool. Furthermore, admissions policies require transparency; if effective English-medium instruction (EMI) necessitates a specific threshold of first-language content mastery, this should be an explicit prerequisite. For educational practice, this demands a paradigm shift in teacher training. Professional development should move beyond a narrow focus on general English proficiency and instead prioritize EMI-specific pedagogy, including strategies for scaffolding content, managing classroom interaction in a second language, and providing incidental language feedback.

Concurrently, curriculum design must acknowledge and mitigate the "content penalty" inherent in EMI. Potential solutions include extending degree program durations to accommodate slower processing in a second language or reintroducing first-language tutorials to safeguard conceptual understanding. Future research must now move beyond perception-based studies to robust empirical inquiry. This entails detailed analyses of classroom discourse to identify facilitative pedagogical moves, longitudinal studies tracking the professional outcomes of EMI graduates, and experimental interventions testing the efficacy of specific training models. Finally, comparative research is needed to understand how EMI efficacy varies between "hard" sciences, with their universal visual codes, and "soft" sciences, where nuanced language is foundational.

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