Journal of letters and Social Sciences (JLSS) مجلة الآداب والعلوم الاجتماعية
https://www.asjp.cerist.dz/en/PresentationRevue/4

English-Medium Instruction in Algerian Medical Higher Education: A Systematic Review from 2022 to 2026

التعليم باللغة الإنجليزية في التعليم الطبي العالي الجزائري: مراجعة منهجية من 2022 الى 2026

Dr. Djihane Mellit
د. جيهان مليط
Research Laboratory on Language Didactics (RLLD)
ENSS, Setif, Algeria
d.mellit@ens-setif.dz

Informations about Article
Date de réception: 18/03/2026
Date d'acceptation:07/05/2026

Key Words
Algerian Medical Higher Education
English as medium of instruction
Non-English speaking students and teachers
PRISMA guidelines
SLR

Abstract

This systematic review synthesizes empirical studies examining how English Medium Instruction (EMI) is enacted and experienced within Algerian medical faculties between 2022 and early 2026. Its primary aim is to capture the perceptions of non-English-speaking medical students and teachers regarding the integration of EMI in the Algerian higher education context. The review also highlights stakeholders' specific needs and the practical implications for teaching and learning practices in this setting. Following the PRISMA guidelines, the review ensured transparency and rigour in the identification, screening, and selection of relevant studies. Data were collected from five research articles retrieved from electronic databases, including ASJP, Google Scholar, and Research Gate, that directly addressed the study objectives. The findings show that while there is broad agreement among researchers on the benefits of EMI such as improving access to international medical literature and enhancing students' English proficiency yet participants consistently report challenges that may hinder its effective implementation. These include insufficient teacher preparation, limited language support for students, and curricula that are not fully adapted to local educational realities. Consequently, the findings suggest that successful EMI implementation in Algeria depends on targeted institutional support, structured professional development for instructors, and thoughtful pedagogical adjustments to overcome language barriers and improve learning outcomes. This review contributes to the broader EMI research literature in Algeria as it attempts to provide a context-specific insights and recommendations for future research and practice, particularly regarding strategies to address the linguistic and pedagogical challenges identified in medical higher education.

Introduction

The global landscape of medical education is currently experiencing a significant linguistic shift, propelled by the growing use of English as a Medium of Instruction (EMI). This transition is largely linked to the emergent status of English as the lingua franca of modern medicine. In contemporary medical practice and research, English plays a central role in accessing high impact scientific publications, participating in international research collaborations, and supporting professional mobility within an increasingly interconnected healthcare market (Hamzaoui, 2024; Smith et al., 2023). For non-English speaking countries, incorporating EMI into medical programs is no longer an optional teaching method but

a vital requirement to internationalize local educational systems and rising scientific visibility.

In this sense, Algeria presents a unique and complex case study for this linguistic transition. Historically, Algerian medical higher education has been deeply dominated by Francophone practise, a legacy of the colonial era that has persisted in the training of healthcare professionals for decades. However, beginning in 2022, the Algerian Ministry of Higher Education and Scientific Research launched an ambitious "Anglicization" initiative. They mandate a nationwide shift toward English for teaching and research in technical and scientific domains, including medicine. This policy aims to align Algerian universities with international standards, enhance the global competitiveness of its graduates, and break the linguistic isolation often associated with the exclusive use of French in scientific discourse (Hamane, 2024; Hamzaoui, 2024; Mansouri, 2025; Rouaghe, Idri & Assassi, 2025).

Despite this strong policy momentum, the practical implementation of English-Medium Instruction (EMI) in medical faculties has generated nuanced and sometimes conflicting reactions among key stakeholders. On the one hand, many students acknowledge the strategic value of English for accessing international medical literature, participating in global research networks, and improving future professional mobility (Hamzaoui, 2024). On the other hand, concerns persist regarding the potential academic risks associated with learning complex biomedical content through a language in which many students have limited proficiency (Sahki & Afia, 2025). Studies on EMI in higher education have repeatedly shown that insufficient language preparedness can increase cognitive load and negatively affect content comprehension, particularly in highly specialized disciplines such as medicine (Bououden & Rouaghe, 2025).

Research also have proven that teachers often report comparable tensions given that the majority of Algerian medical instructors received their academic training entirely in French. As a result, the shift toward English requires not only linguistic adaptation but also pedagogical adjustments in teaching materials, classroom interaction, and assessment practices (Ghouali & Haddam Bouabdallah, 2024; Bououden & Rouaghe, 2025). Furthermore, teachers frequently express the need for structured professional development, particularly in English for Medical Purposes (EMP) and in EMI-specific teaching strategies that support both content delivery and student comprehension (Bououden & Rouaghe, 2025). They also emphasize the necessity of institutional support, targeted language training, and gradual implementation strategies to ensure that the transition toward English does not compromise the quality of medical instruction. These concerns often reveal a friction between top-down administrative directives and bottom-up classroom realities (Hamzaoui, 2024; Mansouri, 2025; Senouci et.al 2024;

While a number of exploratory studies and needs analyses have appeared since the policy shift of 2022, the emerging research base remains relatively limited. Much of the literature examining EMI in Algeria continues to focus on broader language policy debates or on stakeholders' attitudes toward the expanding role of English in different academic disciplines (Amara, 2022; Benrabah, 2019, Ouarniki, 2023). Empirical studies that specifically examine the medical education context are still relatively scarce and often confined to small-scale investigations conducted within individual institutions (Bououden & Rouagh, 2025; Ghodban et. al, 2025; Hamzaoui, 2025). Consequently, these studies provide only partial insights into how the shift toward English is being interpreted, implemented, and negotiated within Algerian medical faculties.

This gap is particularly significant given the intricate nature of medical training itself. Medicine is one of the most linguistically and cognitively demanding domains of higher education, where the language of instruction directly affects students' ability to grasp complex biomedical concepts and engage in clinical communication. Research conducted in other EMI contexts has shown that the success of such reforms depends not only on policy decisions but also on the interaction between linguistic preparedness, pedagogical practices, and institutional support during the early phases of implementation (Dearden, 2015; Macaro et al., 2018). Without a systematic synthesis of the emerging Algerian studies, it remains difficult to identify recurring challenges, evaluate early implementation practices, or draw informed conclusions about how this transition is unfolding.

In response to this gap, the present study aims to

systematically review research published between 2022 and early 2026 that addresses the introduction of EMI in Algerian medical higher education. This review seeks to map the current state of implementation, examine the experiences and perceptions of key stakeholders, and identify the needs and implications reported across studies. Bringing these dispersed findings together provides a clearer picture of the early stages of EMI in Algerian medical faculties and offers a more reliable basis for future research and policy development. Therefore, it addresses the following questions:

- RQ1: How do Algerian medical students and faculty perceive the adoption of EMI?
- RQ2: What specific requirements do medical stakeholders identify as crucial for the shift from French to English?
- RQ3: what potential implications are suggested in these articles?

1–Literature review

1–1–ESP, EMP, and EMI in Algerian Medical Education

English for Specific Purposes (ESP) is a branch of language education that focuses on teaching English tailored to learners' academic, professional, or disciplinary needs. Unlike general English, ESP emphasizes the vocabulary, communicative strategies, and genres relevant to a specific field, linking language learning directly to professional objectives (St John & Dudley-Evans, 1998; Johns, 2013, as cited in Paltridge & Starfield, 2013). In medical education, ESP equips students with the ability to comprehend and produce discipline-specific texts, participate in professional discussions, and apply critical thinking in both academic and clinical contexts. The emergence of ESP after World War II, particularly English for Science and Technology (EST), reflects the global demand for English as a lingua franca in academic and professional domains (Ferguson, 2013). ESP has since expanded into various subfields, including English for Academic Purposes (EAP), English for Occupational/ Professional Purposes, English for Business and Economics (EBE), and most notably, English for Medical Purposes (EMP) (Master, 2005).

EMP, as a specialized subfield of ESP, focuses on the language of the medical and healthcare domains. It addresses understanding medical terminology, interpreting scientific literature, developing academic writing skills, and communicating effectively in clinical and academic contexts (Ferguson, 2013). In Algeria, EMP serves as a critical bridge between students' existing proficiency in French or Arabic and the increasing integration of English Medium Instruction (EMI) in medical faculties. EMP courses provide students with the linguistic tools and confidence to navigate EMI-based programs, ensuring they can access, interpret, and produce medical knowledge accurately (Amara, 2025; Belhoul, & Benmoussat, 2023; Hamzaoui, 2025)

EMI refers to the delivery of academic content in English in contexts where English is not the official language (Dearden, 2014; Macaro et al., 2018). Unlike ESP or EMP, EMI is not primarily focused on language teaching; it involves teaching subject content while simultaneously requiring students to develop language proficiency. In Algeria, the adoption of EMI in medical higher education represents a major policy shift, particularly since the 2022 decree by the Ministry of Higher Education and Scientific Research (MESR) establishing English as a medium of instruction. EMI provides students with access to international medical literature, research opportunities, and professional networks, but also introduces challenges such as language comprehension difficulties, cognitive load, and the need for pedagogical adaptation for both students and instructors (Chenini, 2025; Kaid, & Labed, 2025; Mansouri, 2025)

The effective implementation of EMI in Algeria relies heavily on the integration of ESP and EMP. ESP provides discipline-focused language skills, EMP delivers targeted medical terminology and communication strategies, and EMI offers the platform to apply these skills in authentic academic learning. Studies indicate that students achieve better comprehension, engagement, and academic performance when EMP or ESP instruction is provided before or alongside EMI courses. Likewise, teachers benefit from professional development grounded in ESP/ EMP principles, which enables them to design instruction that balances content delivery with language support (Khalili, 2025; Moussedek, 2020; Saidani & Belmihoub, 2025). Together, ESP, EMP, and EMI create a coherent framework that addresses linguistic challenges, enhances comprehension, and promotes academic success in Algerian medical higher education.

1–2–Implementation Challenges and Stakeholder Experiences in EMI Contexts

The transition to English Medium Instruction (EMI) in Algerian medical education reflects a complex interplay between policy ambition, stakeholder experiences, and classroom realities. Recent studies indicate that both students and faculty recognize English as essential for accessing international research, engaging in global medical discourse, and enhancing professional mobility. Yet, they also report a strong reliance on French as the language of comprehension, comfort, and cognitive efficiency, a legacy reinforced by decades of French-medium instruction following the partial failure of Arabization policies (Ghouali & Haddam Bouabdallah, 2024; Belaskri, 2018). Students often experience anxiety over mastering highly specialized medical content in a non-native language, while teachers report a "readiness paradox," feeling supportive of EMI policies yet underprepared for spontaneous classroom interaction and pedagogical adaptation (Hamzaoui, 2025; Toufaha Sahki & Afia, 2025).

Practical requirements for the shift are substantial. Students emphasize the need to improve oral communication, pronunciation, and professional English tailored to clinical contexts, while faculty highlight the importance of structured support in lesson design, scaffolding complex concepts, and mastering medical terminology (Amrouche & Idri, 2025; Mizab & Boumediene, 2025). International EMI research mirrors these findings: instructors worldwide frequently lack formal preparation, rely on informal learning, and struggle with classroom management in English, whereas students often confront difficulties with comprehension, technical vocabulary, and learner-centered engagement (Dang, Bonar, & Yao, 2021; Wang, Yuan, & De Costa, 2025; Ismailov, Chiu, Dearden, Yamamoto, & Djalilova, 2021). Structured interventions, including ESP and EMP support, targeted vocabulary training, and phonetic practice, are consistently shown to improve both teaching efficacy and student performance (Musty, 2025).

The implications of these challenges extend across cognitive, pedagogical, and institutional dimensions. Cognitive overload, arising from the simultaneous processing of content and language, can compromise comprehension and academic performance, particularly in intensive disciplines like medicine (Feng, He, & Yiganmu, 2023). Faculty require sustained professional development such as in-service EMI training, peer mentoring, and psychological support to address anxiety, build confidence, and foster interactive pedagogy (Ghouali & Haddam Bouabdallah, 2024). International evidence emphasizes that EMI success depends not only on policy adoption but also on teacher readiness, multimodal classroom strategies, and adequate institutional support, including access to English-language textbooks, digital resources, and well-equipped language labs (Macaro et al., 2018; OECD, 2022; UNESCO, 2023).

Overall, the Algerian experience aligns with global patterns observed in EMI implementation: high ideological support and institutional ambition are tempered by linguistic, pedagogical, and psychological barriers. Addressing these challenges requires integrated strategies that combine targeted training, resource provision, and careful curricular planning, thereby facilitating a gradual and sustainable transition to English-medium medical education.

1–3–EMI Systematic Reviews and Meta-analyses abroad and the Gap for Algeria

A growing number of systematic reviews and meta-analyses have attempted to synthesise research on English Medium Instruction (EMI). A work by Williams (2015), largely centred on South Korea, showed that EMI research tends to cluster around specific national contexts, often examining student experiences and policy implementation rather than classroom practice. Similar patterns are observed in the mapping conducted by Réka Jablonkai and Jing Hou (2023), which reviews empirical studies in Chinese higher education and highlights a strong emphasis on student perceptions, language issues, and implementation models, with limited attention to teachers' practices and classroom interaction. In a different context, Yin Ling Lo and Yuen Yi Lo (2014) compared English-medium and first-language instruction in Hong Kong, showing that EMI does not automatically produce better academic outcomes, particularly when linguistic readiness is insufficient. This aligns with broader conclusions drawn by Ernesto Macaro et al. (2018), whose large-scale review of EMI in higher education demonstrates that outcomes are highly dependent on contextual factors such as proficiency levels, teacher preparation, and pedagogical

adaptation.

More recent syntheses reinforce and extend these findings. A systematised review by Nadia Musty (2025) shows that EMI can enhance learner motivation, but that motivation alone is not sufficient to ensure academic success in the presence of linguistic gaps, which often require targeted support through ESP or EMP. Similarly, the review of 40 qualitative studies across 20 non-Anglophone contexts by Makhmud Ismailov et. al, (2021) identifies recurring challenges across six domains, particularly difficulties with English comprehension and the persistence of teacher-centred pedagogy. On the teaching side, large-scale reviews by Dang et al. (2021) and Kehan Wang et al. (2025) consistently show that EMI instructors are often underprepared, with formal training that does not fully address classroom realities. In parallel, Li Feng et al. (2023) identify English proficiency, disciplinary vocabulary, and self-efficacy as key predictors of success in EMI environments.

Despite the breadth of this literature, these reviews are concentrated in Asian and European contexts, with little to no representation of North African or Algerian higher education. As a result, there is currently no systematic synthesis of how EMI is experienced in Algerian universities, particularly in medical education, nor any consolidated evidence on stakeholders' attitudes, needs, or the implications of recent policy changes. This gap provides the rationale for the present study, which seeks to extend the global EMI literature by offering a context-specific, systematically grounded analysis of Algerian medical stakeholders.

2–Research Methodology

In this study, we relied on a systematic review to explore recent empirical literature on the status quo of EMI in the Algerian Medical Faculties. According to Petticrew & Roberts (2008), "Systematic reviews provide a key source of evidence-based information to support and develop practice". Therefore, this study aims to cast for stakeholders' attitudes and needs regarding EMI in the Algerian medical context to comprehensively assess and understand its status. Also, to guide and direct language educational policies towards the best practices. The rationale behind selecting a span of 4 years (2022-early 2026) for this review is to capture the latest changes in EMI integration given that it was officially adopted in Algeria as top down policy starting from 2022. The review relied on the Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) guidelines as framework to ensure a transparent, replicable, and rigorous research process (Page & Moher, 2017). The PRISMA is one of the most commonly used structured roadmap in educational research including four stages identification, screening, eligibility and inclusion to maintain relevance of the reported literature (Ramalingam, et al., 2022) and the transparency of the summarized and analysed review findings (Moher et al., 2009). To comply with the PRISMA guidelines, we first formulated two research questions that direct the research, and then we identified keywords to be used in the search process. The next step was to outline the literature search and selection procedures in four phases including a clear search strategy, a set of inclusion/exclusion criteria in each phase, a study screening and selection process and inclusion studies. The relevant articles were then summarised and thematically discussed based on their contribution to the research questions.

2–1–Search Strategy (Identification Phase)

To find relevant articles, a comprehensive database search was conducted across the following databases: Google scholar, the Education Resources Information Centre (ERIC), and Algerian Scientific Journal Publication (ASJP). These databases were chosen because they are easily accessible and they include many academic publications across different fields in Algeria and abroad. The search was limited to peer reviewed articles written in English published between 2022 and January 2026, a period when EMI officially adopted and integrated in the Algerian HE context. The research process was initiated in all databases using the following strings and key terms: ("English Medium Instruction" OR "EMI" AND "Algerian higher education" AND "medical faculties" or "EMI in Medical faculties" AND "Algerian HE context" AND "stakeholders' attitudes and needs"). This search yielded a combined total of 130 entries of publications for possible inclusion. In addition to database searching, backward reference checking of the retrieved studies was

conducted to identify further relevant publications that were not captured through the initial search strategy. This process did not lead to the inclusion of any additional studies. This approach was adopted to enhance the comprehensiveness of the review while maintaining methodological transparency. Predetermined inclusion and exclusion criteria were then applied to filter relevant articles (as shown in Figure 1). The paper search was conducted on 2 February 2026.

2-2- Inclusion and Exclusion Criteria Phase (Eligibility Phase)

Before conducting a systematic search, clear inclusion and exclusion criteria were designed to ensure the relevance of the retrieved articles. Table 1 summarizes all the criteria applied to include or exclude articles during all phases.

Table 1. The inclusion and exclusion criteria applied in study selection

Inclusion Criteria	Exclusion Criteria
1. Studies related to EMI in Algerian Medical Higher Education context	1. Studies that do not focus on EMI in Algerian Medical Higher Education context.
2. Studies in peer reviewed journals	2. Thesis, books, conference proceedings, book chapters.
3. Studies published between 2022-early 2026	3. Studies published before 2022.
4. Studies written exclusively in English.	4. Studies in other languages (French or Arabic) rather than English.
5. Studies with Open access	5. Studies with limited or no access.
6. Studies examining English for Medical Purposes (EMP) that meet research objectives (providing empirical evidence regarding stakeholders' readiness, and needs directly linked to the implementation of EMI in Algerian medical faculties.	6. Studies focusing on English for Medical Purposes (EMP) not linked to EMI in the Algerian medical HE context
7. empirical or conceptual studies in nature, employing quantitative, qualitative, or mixed-methods research designs	7. Studies that don not provide actual research data (quantitative, qualitative, or mixed methods).

2–2– Study Selection Process (Screening Phase)

Following the identification and Eligibility phase, the screening phase was conducted in two rounds: the first round is abstract screening and the second is full-text screening complying with the inclusion and exclusion criteria mentioned above. The initial search retrieved 130 publications, 50 from Google scholar, 65 from ERIC and 15 from ASJP. In the first round of screening, we excluded 119 studies including duplicated articles, articles published outside the time period and other non-peer reviewed journal articles. The remaining 11 articles were rescreened through a full-text assessment (second round) to narrow down the scope and focus on the content relevance of the articles (e.g., methodology, Algerian medical higher education contexts, and actual evidence of EMI implementation). During this reviewing process, three articles were excluded for eligibility reasons, two were not at university context with direct stakeholders (i.e. medical students and teachers), and one was theoretical in nature. The final selection comprised five studies that fully met the inclusion criteria to form convenient database that can provide key themes related to the research objectives focusing on EMI within Algerian medical higher education

To ensure the reliability and trustworthiness of the review, we implemented several measures based on the guidelines of conducting systematic review proposed by reputable EMI researchers (Gough et al., 2012; Macaro et al., 2012). Two researchers independently conducted the article research process through different databases by relying different research strategies including the use of different synonyms to account for all articles possible. These searchers were screenshot

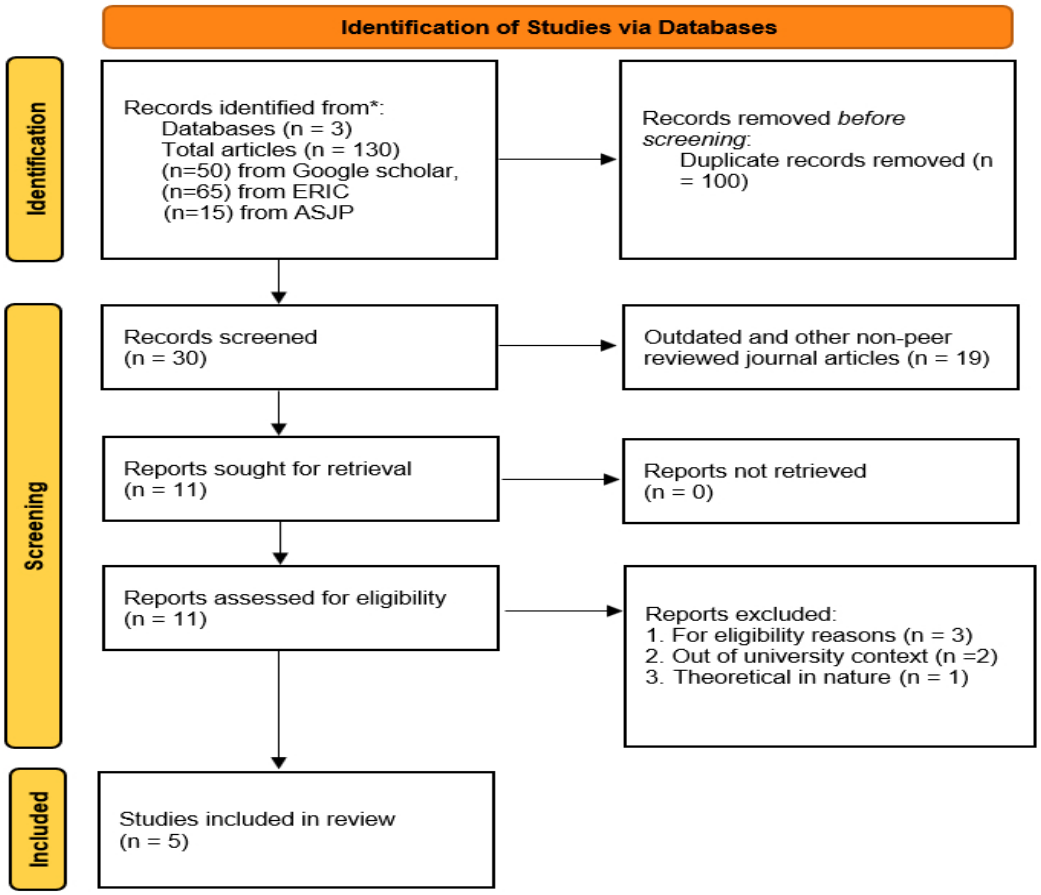
to save details related to timing, and result entries. This aligns with Macaro's (2012) quote "a systematic review is always carried out by more than one reviewer". Both researchers worked collaboratively to set explicit inclusion and exclusion criteria for articles selection. Then, they independently evaluated these articles for inclusion through a data extraction-coding sheet across all studies to avoid data bias. We utilized a PRISMA flow diagram (Figure 1) to map out the study selection phases.

2–3–Article Inclusion, Extraction, and Analysis

Ultimately, five empirical studies were included in the review, as detailed in Table 2 & 3. Although some these articles do not explicitly use the term EMI in their titles, they provide significant insight into English as Medium of Instruction implementation and possible implications within the context of Algerian medical higher education. In the extraction stage, both researchers used a structured data-coding sheet that captured key information related to the article (title, author(s), year of publication, research setting), methodological approach (including study design, sample details, and data collection and analysis), and the main findings (including attitudes, needs and implications). To analyse the research studies, we opted for a collaborative approach using both descriptive and thematic analysis. Each selected article was independently reviewed to identify recurring patterns with a particular focus on how medical stakeholders perceive EMI implementation, their needs and pedagogical implications to answer the study questions. This rigorous and dual analysis process helped ensured that the qualitative evaluation of the studies remains comprehensive and systematic.

3–Result Analysis

In this section, we aimed to collect, review and group five (5) articles that met the objective of this study. This review covers studies published within 2022 to 2026 frame time. This selection intended to corroborate the



relevance of the study to help us answer the research questions.

Table 2. The details related to each article: data analysis techniques, data collection method, research design, and sample size.

Research Titles, Author(s) and Year of Publication	Analysis Techniques	Data Collection Method	Research Design	Sample Details
1: Perception on EMI amidst medical university students: A bane or a boon? By Dr. Chahrazed Hamzaoui in 2025	Qualitative analysis and thematic analysis of open-ended answers then classified based on relevance to research questions.	An Online trilingual questionnaire (Arabic, French and English) through Google Forms. It was distributed via Moodle trilingual	Qualitative research design	The research sample is represented by 150 male and female medical students enrolled in 1st–5th year in the Faculty of Medicine, University of Tlemcen; only 63 valid responses were analysed (87 were excluded for incomplete questionnaires)
2: Accompanying Subject-Matter Teachers in their English-Medium Instruction Journey: A Report of Medical English Training by Dr. Manel Mizab and Dr. Houda Boumediene in 2025	Thematic analysis used for focus group data, while descriptive statistical analysis was applied to post-training survey assessments. A reflective/action-based evaluation is also included.	1. Focus Group Discussion to account for Needs analysis) 2. Post-Training Satisfaction Survey through Google Forms.	Action research design	The sample includes 43 doctors (SMTs) from the Faculty of Medicine at Medea University participated in focus group discussions; 15 medical educators completed the post-training survey;
3: English for Medical Purposes: Identifying Learning Needs of Second-Year Medical Students at the University of Bejaia, Algeria By Bououden Fouad And Dr. Rouaghe Fouzia in 2025	1. The data collected were analysed quantitatively via Descriptive statistics (SPSS) including frequencies, percentages, mean, and standard deviation). 2. In addition to Thematic analysis (Braun & Clarke's six-step model) for open-ended answers.	The researchers relied on a Self-administered online questionnaire through Google Forms).	Using a Mixed-methods research design (quantitative + qualitative approach);	148 (20 males and 128 females) second-year medical students purposely selected, enrolled in the Faculty of Medicine at University of Bejaia during the academic year 2023–2024).

4: Integrating Multimodal Approaches in English for Medical Purposes: Student Needs, Attitudes, and Implications A Pilot Study at the University of Bejaia By Amrouche Ghiles, Prof. Idri Nadia In 2025	The researcher opted for two approaches of data analysis: 1. Descriptive statistics (SPSS v27) including frequencies, percentages. 2. Thematic analysis (Braun & Clarke, 2006) for open-ended answers.	A self-administered questionnaire with 20 items in 4 sections validated by ESP specialists.	Using Mixed-methods design (quantitative + qualitative).	32 out of 40 randomly selected sample of respondents enrolled in second-year medical students at the Faculty of Medicine, University of Bejaia during the academic year 2023–2024.
5: Needs Analysis of Medical Educators' Readiness and Perspectives on EMI-Based In-Service University Training at the Faculty of Medicine, Batna 2 University By Dr. Nacira Ghodbane; Dr. Fouzia Rouaghe; Dr. Shafiq Ur Rehman in 2026	They analysed the data through descriptive statistics including frequencies, percentages, means, standard deviations, and numerical coding of categorical variables.	A structured questionnaire comprising likert-scale, Yes/No, multiple-choice, ranking items). They also used pilot focus group in instrument preparation	Using Cross-sectional quantitative research design	160 medical educators from the Faculty of Medicine, Batna 2 University.

Table 2 provides a thorough and in-depth summary of the research techniques and methodologies used in each publication. It also describes the participants, the techniques and tools to analyse the collected data.

As shown in this table, within the Algerian medical higher education landscape, most of the research on ESP/EMP, which are considered as preparation for EMI, adopt mixed-method designs that combine quantitative tools including questionnaires and statistical analysis with qualitative approaches such as focus groups and thematic analysis. This proves the complexity of integrating English as Medium of Instruction in medical faculties where linguistic competence, pedagogical readiness and institutional support come together. Therefore, it necessitates both descriptive and numerical data for accurate analysis. Moreover, the included studies examined the needs, attitudes, and perspectives of a ranged sample of stakeholders across Algerian universities including medical students and subject matter teachers through different research tools and methods including questionnaires, training evaluations, and needs analysis surveys (studies at the Universities of Bejaia and Medea). This demonstrates that EMI in the Algerian context is regarded as data-informed reform rather than a top down policy driven linguistic shift to include all key actors within the medical education context.

Table 3. The key findings including stakeholders' perceptions, needs toward EMI and potential implications.

Study No	Key findings related to stakeholders' attitudes and perceptions	Identified Needs	Possible implications
1	-High Esteem for English, but Preference for French and Reluctance towards EMI Implementation: The majority of medical students generally hold positive attitudes towards, recognizing its importance as the language of science and technology, and its utility for communication, job opportunities, and international studies. However, they still prefer using French in their studies, feeling more comfortable and acquainted with it. Therefore, many find it hard or impossible to switch to English, especially given their prior French-medium instruction. They expressed concerns about their low English proficiency and fear academic failure if EMI is immediately adopted. -Negative Attitudes from Content Teachers: Content teachers, who were educated in French, may instil negative attitudes towards EMI given that their education was French based. -Optimism for Future Generations: There is optimism that future generations, who start learning English at a primary level, will face fewer difficulties studying medicine in English.	-Improving English Proficiency: The targeted students acknowledge their low proficiency in English and the difficulty they would have understanding medical content in English. Therefore, they require intensive language training to understand lectures content -Qualified Teachers and Resources: Students perceive a lack of qualified teachers for medicine in English and note that most medical books and sources are currently available in French, indicating a need for more English-language resources and instructors -Gradual Implementation: There is a strong need among stakeholders for a wise and gradual implementation of EMI, rather than a sudden shift, to allow students to adapt and avoid negative repercussions on their studies and careers.	-Risk of Academic Failure and Reduced Quality: Immediate or poorly planned EMI implementation could lead to academic failure, emotional threats (fear, anxiety, tension), and a decline in academic performance due to students' low English proficiency and difficulty with scientific content. Students believe it may worsen their academic level rather than improve it. -Need for Comprehensive Planning: The implementation of EMI requires a comprehensive plan involving subject matter instructors, English language teachers, policymakers, and language planning experts. This synergy is crucial for enhancing EMI in higher education, particularly in medical sciences -Importance of Teacher Training: University teachers need appropriate training abroad to create a motivating academic atmosphere for medical students using EMI, which can boost student confidence and positive attitudes. -Awareness and Support: Raising medical students' awareness about the importance of EMI and providing adequate support are essential for successful adoption.

2	-Attitudes toward EMI: Medical educators perceive EMI as both a demanding reform and a necessary step in medical education. Despite the pressure linked to adapting their teaching practices, they remain broadly optimistic about its role in expanding academic and professional opportunities internationally. -Linguistic and Cognitive Challenges: Participants experience difficulties with spontaneous English use, particularly in speaking fluency, vocabulary retrieval, and confidence. Concerns also extend to students' English levels, creating additional pressure in classroom communication, even though writing skills are relatively stronger. -Pedagogical Challenges: EMI implementation is viewed as methodologically demanding. Educators report uncertainty in lesson planning and delivery in English, especially in relation to scientific terminology, accurate content transmission, and managing classroom interaction effectively. -Training Satisfaction: The training program was evaluated very positively, with 80% of participants stating it exceeded expectations and 20% indicating it met expectations, reflecting strong overall approval and perceived relevance. -Impact on Confidence and Practice: A significant majority (93.4%) reported increased confidence in teaching through English. The effectiveness of the training was attributed to its practical orientation, including microteaching, collaborative tasks, and interactive group work. -Psychological and Professional Support: The training also played an important role in reducing anxiety by providing a safe and supportive environment for expression. This contributed to improved psychological readiness and better preparedness for EMI implementation.	-Urgent Need for EMI Training: Teachers strongly emphasized the necessity of specialized training to develop both English proficiency and pedagogical skills for teaching medicine, particularly in relation to new student generations. -Continuous Professional Support: There is a clear demand for ongoing assistance in lesson planning, assessment, classroom management, and adapting materials to EMI. Support for academic writing, research publication, and conference participation was also highlighted. -Gradual Implementation Requirement: Educators view EMI as a long-term process that requires gradual adoption, adequate coordination, and progressive development of both language and disciplinary terminology rather than immediate implementation. -Concerns about Students' Readiness: Participants expressed uncertainty about students' preparedness for studying medicine in English, noting possible gaps in specialized medical English despite expected motivation from digitally oriented learners. -Overall View of EMI Transition: EMI is perceived as a complex institutional change requiring structured preparation, sustained training, and continuous academic and linguistic support for both teachers and students	-Complementary Role of ESP Practitioners: The report emphasizes that English for Specific Purposes (ESP) practitioners play a crucial role as psychological, linguistic, and pedagogical allies, complementing EMI instructors' tasks and ensuring SMTs are not isolated in their EMI journey. -Need for Context-Sensitive Resources and Interdisciplinary Collaboration: To support the EMI policy effectively, other Higher Education Institutions (HEIs) should develop context-sensitive resources, institutionalize interdisciplinary partnerships, and enhance linguistic competence and pedagogical practices among all SMTs, not just doctors. -Recommendations for Future Programs: For future EMI programs, it is recommended to integrate simulation exercises as a central element, foster reflective peer comment to develop supportive communities of practice, and provide ongoing opportunities for SMTs to train and develop EMI delivery in discipline-related environments

3	Perceived Importance of English: 80.4% of students recognize English as essential for their medical studies and future careers. Only 0.7% considered it unimportant, with 18.9% undecided. -Time Allotted to English Learning: Most students (64.9%) prefer to study English for 1 hour and 30 minutes per week, with 25.0% preferring 3 hours. Only a minority opted for longer durations (4 hours 30 minutes or 6 hours). This reflects a desire for frequent but moderate language exposure that can be accommodated within their demanding medical studies.	-Need to Develop English Language Competency: the majority of the students identified speaking as the most important skill to improve (87.2% of cases), indicating a critical need for oral communication development in medical contexts. Listening (45.3% of cases) and writing (44.6% of cases) are also significant concerns for students, though less prioritized than speaking. Reading is the least prioritized skill (37.2% of cases), possibly due to greater exposure to written healthcare content. Another language aspect that was the most frequently cited to be improved is pronunciation (68.2% of cases), indicating a critical need for phonetic training and oral practice in medical English. Moreover, they stressed the need to develop their vocabulary (64.9% of cases) to master specialized medical terminology and general academic English. -Need for Communication Skills (21st Century) and Practical Communication: Communication skill is perceived as the most crucial 21st-century learning skill to improve (87.2% of cases), with particular focus on speaking and oral proficiency. The students also expressed a strong interest in improving their functional language tools to communicate effectively in medical contexts, emphasizing practical application over theoretical knowledge.	-English as Medium of Instruction: Some students suggested integrating English as a medium of instruction for medical studies, indicating potential for broader institutional language policy changes. -Focus on Oral Communication: Given the overwhelming emphasis on speaking (87.2%) and pronunciation (68.2%), EMP courses must prioritize oral communication activities, including presentations, discussions, role-plays, and simulations of medical scenarios. -Curriculum Alignment with International Standards: The EMP syllabus should be aligned with international medical discourse and standards to prepare students for global medical practice, research collaboration, and access to international medical literature -Infrastructure Development: The preference for language labs (42.2%) and technology-based materials suggests a need for investment in appropriate infrastructure, including computer facilities, language laboratories, and access to online learning platforms.

4	Recognition of En--glish Importance: 91% of participants consider English "important" (47%) or "very important" (44%) for academic and professional success, viewing it as a profes-sional asset rather than merely a curricular .requirement Motivation for-English Learn-ing: Primary motivations include achieving fluency for effective communication (31.3%), understanding new concepts and research (31.3%), and future career prospects ((25% Self-Assessed Pro--ficiency Levels: 50% rated their English proficiency as B2 (upper intermediate), 21.9% as C1 (advanced), and 18% as B1, reflecting the multilingual context of .Algerian students Perception of Current-Course Effective-ness: 46.9% rated the existing English course as "somewhat effective" and 37.5% as "effective", with only one participant rating it "very effective", indicating potential for curriculum enhancement	Medical Content Priorities: Highest priority-areas include general medical terminology (78.1%), anatomy and physiology (68.8%), diseases and conditions (65.6%), and medi-cations, procedures, treatments, professional communication, and medical documentation ((56.3% each Communication Challenges: Predominant-challenges include spontaneous self-expression (34.4%), composing papers in medical English (34.4%), preparing oral presentations (28.1%), and producing academic texts (25%). Gram-mar, speaking, and vocabulary consistently .present difficulties Practical Application Focus: Students need-English skills that directly apply to clinical and academic settings, emphasizing real-world .medical communication scenarios.	Adoption of Multimodal Pedagogy: The-study demonstrates that multimodal pedagogy effectively addresses real-world linguistic requirements of Algerian medical students and facilitates the national .transition to English-medium instruction Needs-Based Curriculum De sign: Findings underscore the importance of designing English courses tailored to students' specific academic and professional contexts, integrating engaging, interactive, and practical learning strategies with discipline-specific terminology and patient .communication techniques Integration of Data-Driven Learning-(DDL): Exploration of corpus tools to provide students with hands-on analytical experience with medical discourse, further aligning language training with real-world needs.

5	• Favourable Attitudes toward EMI: A large majority of medical educators (76.3%) support the shift toward EMI, recognizing its long-term academic and professional value in Algerian medical education. • Preparedness Gap: Despite this positive stance, only around 50% feel adequately prepared, revealing a clear mismatch between support for EMI and actual readiness for implementation. • Moderate English Proficiency: Participants self-report average proficiency levels, with reading (M = 2.56) and writing (M = 2.41) as relatively stronger skills, while speaking (M = 2.04), pronunciation, and interactive communication are weaker areas. • Perceived Role of English: English is mainly valued as a professional academic tool for teaching, research publication, and conference participation, while its relevance to personal or clinical practice is considered less central. • Implementation Challenges: Key difficulties include low confidence in spoken English, fear of making errors in front of students, limited teaching resources, reduced classroom interaction, and challenges in responding spontaneously to students in English. • Learning Preferences: A dominant majority (97%) prefer auditory and communicative approaches, especially lecture-based listening activities, while preferences for speaking, writing, and collaborative learning are more moderate or mixed.	Need for Structured In-Service-Training: Educators urgently need structured in-service training programs that focus on Medical English and EMI-specific pedagogy for both teachers and students. Most participants (67.6%) have not received formal EMI training Need for Comprehensive Professional-Development: Successful EMI implementation requires comprehensive professional development, institutional support, and policy alignment. Training should go beyond general English to include medical-specific language, real classroom scenarios, and culturally .responsive pedagogy Need for Continuous Support and-adequate resources: EMI is not a one-time adjustment; it requires continuous learning through regular workshops, seminars, and peer mentoring and reflective teaching practices. In addition, they need institutional support that should include access to quality teaching materials and reduced workloads during .the transition Need to Focus on Productive Skills:-There is a clear need for intensive targeted instruction to support their productive skills, particularly writing and speaking, as well as focused teaching of grammar and vocabulary in medical contexts.	-Improving Teaching Quality: Comprehensive training and support can enhance teaching quality and elevate academic standards, aligning with global educational practices. -Enhancing Academic Visibility: Successful EMI implementation can bridge institutions globally, enhance research quality, and elevate Algerian universities by meeting international standards. -Student Competitiveness: EMI can improve students' career prospects and facilitate international education and employment opportunities. -Policy and Institutional Alignment: The transition requires balancing global academic demands with local educational realities. This necessitates a systemic institutional support and sustainable training programs. -Addressing the Readiness Paradox: Tailored support, motivation-building strategies, and professional development can help shift less enthusiastic attitudes into a more positive direction. -Curriculum Improvement: Educators might emphasize the broader benefits of English proficiency beyond academic use to improve curriculum relevance.

Table (3) presents a comprehensive of the studies examined, which focus on the attitudes of stakeholder toward English Medium Instruction (EMI) in Algerian medical higher education. It integrates three key analytical dimensions derived from the literature: stakeholders' perceptions and attitudes, the needs identified by these actors, and the potential implications for policy and educational practice. The studies included in the table examine different groups within the Algerian HE medical setting, mainly medical students and subject-matter teachers, and explore how they perceive the increasing role of English in medical learning and teaching. In addition to reporting attitudes, the table also emphasizes the linguistic, pedagogical, and institutional needs expressed by these stakeholders, such as language training, pedagogical preparation, and access to appropriate learning resources. Finally, the table summarizes the broader implications suggested by the studies, including recommendations for gradual implementation strategies, professional development programs, and the urgent need for institutional support that could facilitate the transition toward EMI in the Algerian medical faculties. All in

all, the table provides a structured synthesis of how EMI is currently perceived and discussed within the Algerian medical higher education context

4–Discussion

In this section, we discuss the results presented in the previous table (3) in relation to the research questions of the study. The findings that have emerged from the systematic literature review are examined in order to identify the main patterns and insights highlighted across the selected studies related to the implementation of English as a Medium of Instruction (EMI) in Algerian medical faculties. Although the studies differ in their contexts, approaches, and methodologies, they converge around a number of key aspects that shape the EMI experience in this educational setting. These include attitudes toward the use of English in medical education, the linguistic and pedagogical needs of both teachers and students, and the broader implications of adopting EMI within the Algerian higher education.

4–1–RQ1 (Attitudinal Alignment): How do Algerian medical students and teachers perceive the adoption of EMI?

The findings indicate a consistent but internally divided position among Algerian medical students and teachers regarding the shift to English Medium Instruction (EMI). Across the studies reviewed, participants clearly recognize the academic and professional value of English. Between 80% and 91%, associate it with access to scientific publications, international collaboration, and improved career opportunities (Ghouali & Haddam Bouabdallah, 2024; Hamzaoui, 2025; Rouaghe, Idri & Assassi, 2025). This perception is not specific to Algeria. Research in other non-Anglophone contexts shows similar patterns. For instance, Lasagabaster (2022) and Jenkins (2024) both report that English is widely viewed as the dominant language of science and a necessary tool for global academic participation. Reports by the OECD (2019) on higher education internationalization also confirm that English proficiency is increasingly linked to research visibility and employability. In this sense, the strong support for English observed in the present study reflects a broader global trend rather than a local exception.

However, this recognition does not lead to full acceptance at the classroom level. Both students and teachers continue to rely on French as the main language for learning and teaching medical content. This reflects what Macaro et al. (2018), in their review published in *Language Teaching*, describe as a gap between policy support and actual practice. In systems where another language has historically structured access to knowledge, that language tends to remain the primary cognitive resource. In Algeria, this is reinforced by the long-standing use of French in scientific and medical education (Belaskri, 2018). The preference for French, therefore, is better understood as a strategy to maintain comprehension and stability rather than resistance to English itself.

Students' concerns about academic failure are also consistent with findings reported in international EMI research. British Council reports (2015; 2021) indicate that limited proficiency in the language of instruction can negatively affect understanding in content-heavy disciplines such as medicine. Similarly, Doiz, Lasagabaster, and Sierra (2017) show that studying through a second or third language increases cognitive load, particularly when dealing with specialized terminology. The fear expressed by Algerian students reflects this documented difficulty: the issue is not the value of English, but the risk of reduced comprehension during the transition phase (Hamzaoui, 2025; Toufaha Sahki & Afia, 2025).

Among teachers, a comparable pattern emerges. While many support the introduction of EMI, fewer feel ready to implement it. This confirms findings by Macaro et al. (2018), who identify teacher preparedness as a central challenge in EMI contexts. Evidence from European Commission reports (2014; 2020) also shows that instructors often report confidence in reading and writing but difficulties in oral communication, especially in spontaneous classroom interaction. The concern about making mistakes in front of students, noted in the present study, has been widely documented and is known to limit classroom interaction and maintain lecture-based practices (Hamzaoui, 2025).

The role of training appears critical in addressing these issues. In the current study, most participants evaluated recent training programs positively, which aligns with British Council recommendations that effective EMI training should combine language development with pedagogical support and confidence building. Research in teacher education also stresses the importance of low-pressure environments where instructors can practice and

gradually develop fluency in teaching through English. Finally, the expectation that future cohorts will adapt more easily to EMI is supported by international evidence on early language learning. UNESCO (2016) reports that earlier exposure to a foreign language improves later academic use of that language. With English now introduced earlier in the Algerian school system, it is likely that future students will face fewer difficulties than current cohorts, although this remains to be confirmed empirically.

Overall, the situation does not reflect rejection of EMI but a transitional phase. There is clear alignment with the goals of internationalization and scientific access, but implementation remains constrained by linguistic preparedness, prior educational experience, and classroom realities. This combination of strong support and practical hesitation closely matches what has been observed in other EMI contexts worldwide.

4–2–RQ2 (Needs Analysis): What specific requirements do medical stakeholders identify as crucial for the shift from French to English?

Medical stakeholders in the Algerian context converge on the idea that shifting from French to English cannot be reduced to a change of language, but requires coordinated development at several levels. At the linguistic level, the most urgent need concerns productive skills rather than receptive ones. While students and teachers generally manage reading largely due to prior exposure to English-language medical sources both groups report difficulty with speaking, particularly in spontaneous situations. In the present data, 87.2% of students identify oral expression as the main priority, alongside pronunciation (68.2%), especially in view of future clinical interaction. This pattern is consistent with findings reported in EMI contexts by Macaro et al. (2018), who note that oral fluency is the weakest skill among both learners and instructors, and by British Council reports (2015; 2021), which highlight spoken communication as a key barrier in content-based instruction. In the Algerian studies, this takes a specific form: teachers refer to difficulty "thinking in English" during lectures, which directly affects pacing, clarity, and interaction (Ghouali & Haddam Bouabdallah, 2024).

Alongside this, there is a clear shift in expectations from General English to English for Medical Purposes. Stakeholders repeatedly emphasize the need for control over technical lexis rather than general grammar. Mastery of terminology in anatomy, physiology, and pharmacology is identified as essential (78.1%), not only for comprehension but also for accurate professional communication. This aligns with international research in ESP/EMP, where authors such as Doiz, Lasagabaster, and Sierra (2017) show that disciplinary vocabulary is central to reducing cognitive load in EMI settings. In the Algerian case, the issue is reinforced by the fact that students previously acquired this knowledge in French, which creates a double burden conceptual understanding and lexical transfer (Hamzaoui, 2025). Pronunciation training is also viewed as more than a linguistic detail; it is linked to credibility and intelligibility in clinical contexts, a point also raised in medical EMI studies in Europe and Asia.

At the pedagogical level, teachers highlight the need for concrete classroom-oriented preparation rather than abstract language training. Many report difficulty in adapting content to English without oversimplifying it, pointing to a lack of training in scaffolding techniques. This includes breaking down complex medical concepts, managing code-switching when necessary, and maintaining student engagement in a less familiar language. Assessment is another concern: designing exams in English raises questions of fairness when students' language proficiency remains uneven. These concerns reflect what the European Commission (2020) identifies as a core issue in EMI implementation, namely the gap between subject expertise and the ability to teach that content through English. In addition, teachers link EMI to research expectations, noting the need for support in academic writing and conference communication in order to participate in international publication networks.

At the institutional level, stakeholders stress that these changes require sustained structural support. This includes access to English-medium textbooks, digital platforms, and updated language laboratories that allow for practice in listening and speaking. The current dominance of French resources is seen as a practical constraint on immersion (Belaskri, 2018). Training is also expected to be continuous and practice-oriented. Rather than short workshops, teachers call for in-service programs that include microteaching, peer feedback, and mentoring, combined with attention to the psychological dimension

of language use, particularly anxiety and self-confidence (Ghouali & Haddam Bouabdallah, 2024).

Across all studies, there is a clear preference for a gradual implementation strategy. Stakeholders reject a sudden shift and instead support phased adoption, beginning with selected modules or pilot programs. This position reflects a realistic assessment of current conditions, including limited training and resource availability. Similar recommendations appear in international EMI literature, where phased models are considered more effective in contexts undergoing language transition (Macaro et al., 2018; OECD, 2019). In the Algerian context, gradualism in EMI implementation appears as a deliberate approach aimed at maintaining academic standards during a high-stakes language-policy shift. This interpretation is supported by the broader North African perspective provided by Rouaghe et al. (2025), which highlights how such paced transitions are deeply embedded in regional historical trajectories, language hierarchies, and institutional constraints. Within this framework, gradualism is not a resistance to EMI, but rather functions as a quality-assurance strategy that seeks to balance linguistic reform with pedagogical effectiveness.

4–3–RQ3 (Possible Implications): What potential implications are suggested in these articles?

The implications suggested by the reviewed Algerian studies can be better understood when situated within recent empirical EMI research. Taken together, they point to a transition that carries both measurable benefits and identifiable risks, depending on how it is implemented.

A first implication concerns academic performance and cognitive pressure. Algerian data (Hamzaoui, 2025) suggest that students may struggle with disciplinary understanding when instruction shifts abruptly to English. This is supported by recent work on EMI and cognitive load in STEM contexts, which shows that students and teachers often rely on multilingual practices (e.g., code-switching) to reduce the mental effort required to process content in a non-native language (Settari, & Melouah, 2025). Similarly, research in healthcare EMI contexts indicates that linguistic overload can lead not only to comprehension difficulties but also to emotional strain and disengagement if adequate support is not provided (Huang, 2024). These findings reinforce the idea that EMI, if poorly scaffolded, may affect both learning outcomes and student well-being.

At the same time, more recent large-scale evidence complicates the assumption that EMI necessarily harms academic performance. A multi-level meta-analysis by Rose et al. (2025) shows that students in EMI programs achieve **comparable content learning outcomes** to those studying in their first language, while significantly improving their English proficiency. This suggests that the risk identified in the Algerian context is not inherent to EMI itself, but linked to conditions of implementation particularly language preparedness and instructional design.

A second implication relates to pedagogical transformation. The Algerian findings call for more interactive and multimodal teaching, which is consistent with recent EMI research showing that learning outcomes are shaped not only by language but also by factors such as prior knowledge, effort, teaching methods, and resource availability (Guo, He, & Wang, 2022). In addition, studies on learner cognition highlight that difficulties in pronunciation, terminology, and discourse processing directly affect how students construct knowledge in EMI settings (Zheng, 2023). This explains why stakeholders emphasize simulations, visual support, and practice-based learning: such strategies help redistribute cognitive load and make disciplinary content more accessible.

A third implication concerns teacher development and institutional support. Algerian studies stress the need for sustained professional training, which is strongly supported by recent research showing that EMI teaching quality improves when instructors receive structured, practice-oriented development. For example, a 2025 study on EMI professional development demonstrates that targeted training programs can significantly enhance teachers' self-efficacy and classroom practices, particularly when they integrate technology and collaborative learning frameworks (Lin & Tsou, 2025). This directly addresses the "readiness gap" observed in the Algerian context.

At a broader level, the transition also implies **institutional and strategic change**. EMI is widely linked to the internationalization of higher education, and its expansion has been documented globally across thousands of studies, reflecting its role in knowledge production and global academic exchange (Karabay & Durrani, 2024). In practical terms, this means increased access

to international research networks, publications, and mobility opportunities for both students and faculty. The Algerian expectation of enhanced global visibility and competitiveness is therefore consistent with a well-established international trajectory.

Finally, the studies point to the necessity of a gradual and structured implementation model. Research on learner cognition and EMI adoption emphasizes that successful programs are those introduced progressively, with clear support systems and adaptation phases rather than abrupt transitions (Zheng, 2023). This directly supports the Algerian stakeholders' rejection of a "sudden immersion" approach and their preference for phased implementation. In sum, the implications identified in the Algerian context are strongly aligned with recent empirical research: EMI can support both content learning and language development, but only under conditions of adequate linguistic preparation, pedagogical adaptation, and institutional investment. Without these, the same reform may generate cognitive strain and uneven learning outcomes.

Conclusion, Recommendations, Limitations and Future Research

The integration of English Medium Instruction (EMI) in Algerian higher medical education represents not only a linguistic shift but also a strategic reaction to the demands of globalization and the internationalization of academic standards. This transition which involves introducing English as a third key language, challenges established bilingual practices including the use of Arabic and French, which were for ages (since 1962) the sole medium of instruction in higher education and in medical sciences in particular. This complexity arises from balancing the preservation of national linguistic identities and cultural heritage with the practical necessity of aligning medical education with global scientific discourse, which predominantly occurs in English. Consequently, EMI adoption in such a multiliguistic context entails managing institutional resistance, resource constraints, and the different levels stakeholders' language proficiency. All these factors may influence the pace and effectiveness of this reform, particularly in relation to the timeline and expectations set by the Algerian government. In this sense, this review offers an inclusive picture to understand how the shift towards English is being debated and analysed within the national academic landscape, particularly in relation to stakeholders' attitudes, the needs that emerge from this shift, and the implications for its implementation. The studies reviewed suggest that the move toward EMI raises practical and pedagogical questions for both teachers and students including variation in language proficiency, preparedness, and institutional support. These findings underline the importance of examining the local realities of Algerian higher education rather than approaching EMI only as part of a global trend in medical learning and teaching.

Based on these findings, this study aims to provide a number of recommendations stemmed from the review, through which EMI can be implemented more effectively in the Algerian medical faculties. First, it is true that the integration of EMI in the Algerian higher education is based on a top-down policy decreed by the AMHE since 2022, but the actual implementation and use needs to be a gradual and phased process. That is, instead of replacing French abruptly, universities could introduce English progressively through bilingual resources, English-based lectures in selected modules, and parallel language support courses. This transitional approach would allow both teachers and students to adapt without jeopardizing academic outcomes. Second, the language support courses provided to stakeholders should focus on authentic medical communication tasks that promote their English linguistic proficiency, pronunciation and oral communicative skill in real situations such as patient interaction, case presentations, research reading, and academic writing, which students and teachers frequently identify as their most urgent needs. In line with this, medical tteachers require targeted and extensive training that combines language development with EMI pedagogy. It is high time Algerian HE institutions across the country arranged continuous wworkshops on classroom interaction, multimodal teaching strategies, and the use of English in disciplinary discourse. This could help teachers feel more confident when teaching medical content in English. To achieve this, institutions should eencourage collaboration between English language specialists and medical faculty. To elaborate, ESP practitioners can play a crucial role in supporting EMI implementation through helping content teachers to design teaching materials, co-develope courses, and assist them in adapting lectures and assessments to their English-medium teaching context.

Furthermore, Algerian uuniversities should provide access to English-language medical resources, digital learning platforms, and language laboratories that allow students to practice communication skills in realistic academic contexts.

This review provides a comprehensive synthesis of the current EMI situation within Algerian medical higher education, while also highlighting various parameters of study design to guide future research. The selection process focused mainly on English-language empirical publications to ensure international scope. However, in the context of the multilingual context of Algeria, a significant body of pedagogical discourse does exist in French and Arabic language publications. Future bibliometric review could potentially build on the current study by including these multilingual sources to provide a more detailed view of the French-to-English paradigm shift within Algerian medical instruction. In terms of maintaining a high level of peer-reviewed publication standards, this review synthesizes four articles published from 2022 to 2026. While this review highlight the current phenomenon of EMI in Algerian medical higher education context, it excludes grey literature sources, such as institutional reports, conference proceedings and doctoral theses from local Algerian medical faculties. Future review could potentially include these practitioner-generated documents to bridge the gap between theoretical research and classroom real experiences of Algerian medical stakeholders. Finally, it is recommended that future studies explore the long-term implications of these proposed strategies, particularly in terms of the integration of technology in Algerian medical schools and their comprehensive adoption of the EMI model.

Ultimately, the shift towards English as a Medium of Instruction (EMI) in Algerian medical education should be seen not merely as a change in language policy but as a component of a larger strategy to integrate Algerian universities with the global medical community. To accomplish this, it is essential to find a balance between international academic standards and the linguistic and educational traditions unique to Algeria. With careful planning, ongoing training, and robust institutional backing, EMI can gradually transform from a challenging policy measure into a valuable opportunity to enhance medical education and research in Algeria.

References

1. Alqarni, O., Mahdi, H., & Ali, J. (2024). English Medium Instruction in Saudi Arabia: A Systematic Review. *Language TeachingResearchQuarterly*. https://doi.org/10.32038/ltrq.2024.42.02.
2. Amara, N. (2025). Implementing English as a Medium of Instruction in Algerian Higher Education: Facts and Challenges. *ATRAS journal*. https://doi.org/10.70091/atras/vol06no01.2.
3. Amrouche, G., & Idri, N. (2025). Integrating Multimodal Approaches in English for Medical Purposes: Student Needs, Attitudes, and Implications—A Pilot Study at the University of Bejaia. (4)*10* ,مجلة الرسالة للدراسات والبحوث الإنسانية .21-43 ,
4. Belaskri, K., & Drew, P. (2023). Arabic–French code switching in medical consultations in Algeria: A conversation analytic study. *Language & Communication*, *93*, 30-42.
5. Belhoul, R., & Benmoussat, S. (2023). Switching Between Two Foreign Languages in English for Medical Purposes Course: Impact on Medical Terminology and Vocabulary Comprehension. ALTRALANG Journal. https://doi.org/10.52919/altralang.v5i3.365.
6. Bououden, F., & Rouaghe, F. (2025). English for Medical Purposes: Identifying Learning Needs of Second-Year Medical Students at the University of Bejaia, Algeria. *ALTRALANG Journal*, *7*(1), 342.353-
7. Curle, S., Alqarni, O., Mahdi, H., Al-Nofaie, H., & Ali, J. (2024). Exploring the nexus of variables in English-medium instruction research: a comprehensive global meta-analysis. *International Journal of Multilingualism*, 22, 1202 - 1227. https://doi.org/10.108014790718.2024.2377199/.
8. Chernikova, O., Heitzmann, N., Stadler, M., Holzberger, D., Seidel, T., & Fischer, F. (2020). Simulation-Based Learning in Higher Education: A Meta-Analysis. *Review of Educational Research*, 90, 499 - 541. https://doi.org/10.3102003465432093354 4/.
9. Dang, T., Bonar, G., & Yao, J. (2021). Professional learning for educators teaching in English-medium-instruction in higher education: a systematic review. *Teaching in Higher Education*, 28, 840 - 858. https://doi.org/10.108013562/

517.2020.1863350.

10. Doiz, A., & Lasagabaster, D. (2017). Teachers' beliefs about Translanguaging practices. *Translanguaging in higher education: Beyond monolingual ideologies*, 157-176.
11. Dearden, J. (2015). *English as a medium of instruction for academics in higher education?* British Council.
12. Feng, L., He, L., & Yiganmu, A. (2023). Determinants of students' academic success in English as a medium of instruction (EMI) classes: A systematic review. *Heliyon*, 9. https://doi.org/10.1016/j.heliyon.2023.e20421.
13. Ghodbane, N., Rouaghe, F., & Shafiq, U. R. (2026). Needs Analysis of Medical Educators' Readiness and Perspectives on EMI-Based In-Service University Training at the Faculty of Medicine, Batna 2 University. *Journal of Languages and Translation*, *6*(1), 1-24.
14. Ghouali, K., & Bouabdallah, F. H. (2024). Englishisation of Algerian higher education through EMI: Expectations versus reality.
15. Gough, D., Thomas, J., & Oliver, S. (2012). Clarifying differences between review designs and methods. *Systematic reviews*, *1*(1), 28.
16. Hamzaoui, C. (2025). Perceptions of doctoral students towards English as a medium of instruction. *Mediterranean Journal of Social & Behavioural Research*, *9*(2), 29-37.
17. Hamane, S. (2023). The changing landscape of language use in Algerian higher education: A comprehensive examination of advantages & changes to English medium instruction (EMI). *Ziglôbitha, Revue des Arts, Linguistique, Littérature & Civilisations, (7)*, 531.540-
18. Ismailov, M., Chiu, T., Dearden, J., Yamamoto, Y., & Djalilova, N. (2021). Challenges to Internationalisation of University Programmes: A Systematic Thematic Synthesis of Qualitative Research on Learner-Centred English Medium Instruction (EMI) Pedagogy. *Sustainability*. https://doi.org/10.3390/su132212642.
19.
20. Jablonkai, R., & Hou, J. (2021). English medium of instruction in Chinese higher education: a systematic mapping review of empirical research. *Applied Linguistics Review*, 14, 1483 - 1512. https://doi.org/10.1515/applirev-20210179-.
21. Jenkins, J., & Panero, S. M. (2024). *Global Englishes: A resource book for students*. Routledge.
22. Kaid, N., & Labed, Z. (2025). Teacher Professional Development for the Integration of EMI in Algerian Universities. *LLT Journal: A Journal on Language and Language Teaching*.https://doi.org/10.24071/llt.v28i1.8900
23. Khalili, K. (2025). English for Specific Purposes Teaching Practices: Teachers' Perspectives. *Journal of Languages and Translation*. https://doi.org/10.70204/jlt.v5i2.598.
24. Kremer, M., & Pinto, S. (2025). Exploring the Interconnectedness between English-Medium Instruction and Intercultural Competence: A Systematic Literature Review. *International Journal of Instruction*. https://doi.org/10.29333/iji.2025.18111a
25. Lasagabaster, D. (2022). *English-medium instruction in higher education*. Cambridge University Press.
26. Macaro, E., Handley, Z., & Walter, C. (2012). A systematic review of CALL in English as a second language: Focus on primary and secondary education. *Language Teaching*, *45*(1), 1-43.
27. Mansouri, K. (2025). Navigating the Transition to English Medium Instruction in Algerian Universities. *Dil Eğitimi ve Araştırmaları Dergisi*, *11*(1), 328-345.
28. Mizab, M., & Boumediene, H. Accompanying Subject-Matter Teachers in their English-Medium Instruction Journey: A Report of Medical English Training.
29. Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Bmj*, *339*.
30. Moussedek, S. (2020). Effective Academic Listening among Medical Students: Challenges and implications for instruction. . *International Journal of Multilingualism and Languages for Specific purposes*. https://doi.org/10.52919/ijmlsp.v2i01.112
31. Muñoz, D., Tobón, M., & Betancourt, B. (2025). The Advantages of using English as the Medium of Instruction for Globally Oriented Professional Training. A Theoretical Review. *Ciencia Latina Revista Científica*

Multidisciplinar. https://doi.org/10.37811/cl_rcm.v9i4.19422.

32. Musty, N. (2025). The relationship between English Medium Instruction and motivation: a systematised review. *Language Learning in Higher Education*, 15, 431 - 446.https://doi.org/10.1515/cercles-20240084-.
33. Ouarniki, O. (2023). Exploring teachers' perspectives on the implementation of English as a medium of instruction (EMI) in Algerian higher education institutions: Challenges and opportunities. .176-192 , (3)*8* ,افاق للعلوم
34. Page, M. J., & Moher, D. (2017). Evaluations of the uptake and impact of the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) Statement and extensions: a scoping review. *Systematic reviews*, *6*(1), 263.
35. Peng, J., & Xie, X. (2021). English-Medium Instruction as a Pedagogical Strategy for the Sustainable Development of EFL Learners in the Chinese Context: A Meta-Analysis of Its Effectiveness. *Sustainability*, 13, 5637. https://doi.org/10.3390/su13105637.
36. Petticrew, M., & Roberts, H. (2008). *Systematic reviews in the social sciences: A practical guide*. John Wiley & Sons.
37. Prayuda, M., Purba, N., & Gultom, C. (2024). The Effectiveness of English as a Science Medium Instruction in Higher Education. *Jurnal Penelitian Pendidikan IPA*. https://doi.org/10.29303/jppipa.v10ispecialissue.7986.
38. Ramalingam, S., Yunus, M. M., & Hashim, H. (2022). Blended learning strategies for sustainable English as a second language education: A systematic review. *Sustainability*, *14*(13), 8051.
39. Rouaghe, F., Idri, N., & Assassi, T. (Eds), English Medium Instruction in Higher Education: Unveiling the North African Context (1st ed, Vol. 44). Springer.
40. Saidani, R., & Belmihoub, K. (2025). Translingual-medium instruction in higher education: a qualitative inquiry of an Algerian institution. *International Journal of Multilingualism*. https://doi.org/10.108014790718.2025.2532564/.
41. Sameephet, B., Heebkaew, N., Boonnithi, N., Neera, K., & Panna, S. (2025). A Systematic Review of English Medium Instruction in East Asia: Challenges and Implications. *Reflections*. https://doi.org/10.61508/refl.v32i2.283208
42. Senouci, S., & Gacem, M. (2024). English as a medium of instruction in the Algerian higher education: Issues and new avenues. *Global Journal of Foreign Language Teaching*, *14*(3), 186.200-
43. Vélez, G., Giner, G., & Clemente, I. (2019). A Systematic Review of English as a Medium of Instruction in Higher Education Institutions: The Case of a Business School. *Internationalising Learning in Higher Education*. https://doi.org/10.10073_3-21587-030-3-978/.
44. Wang, K., Yuan, R., & De Costa, P. (2025). A critical review of English medium instruction (EMI) teacher development in higher education: From 2018 to 2022. *Language Teaching*, 58, 141 - 172. https://doi.org/10.1017/s0261444824000351.
45. Williams, D. (2015). A Systematic Review of English Medium Instruction (EMI) and Implications for the South Korean Higher Education Context. .
46. Declarations
47. We acknowledge the use of Grammarly, ChatGPT and Paperpal for language polishing purposes, including grammar, spelling and references checking.

التعليم باللغة الإنجليزية في التعليم الطبي العالي الجزائري: مراجعة منهجية من 2022 الى 2026

ملخص

تعمل هذه المراجعة المنهجية على تجميع الدراسات التجريبية التي تناولت كيفية تطبيق التعليم باللغة الإنجليزية (EMI) وتجارب الطلاب والأساتذة في كليات الطب الجزائرية خلال الفترة من 2022 وحتى أوائل 2026. الهدف الأساسي هو رصد تصورات الطلاب والأساتذة غير الناطقين بالإنجليزية تجاه دمج EMI في سياق التعليم العالي الجزائري. كما تسلط المراجعة الضوء على الاحتياجات المحددة لأصحاب المصلحة والتداعيات العملية على ممارسات التدريس والتعلم في هذا السياق. ووفقا لإرشادات PRISMA، تم ضمان الشفافية والدقة في عملية تحديد الدراسات، وفرزها، واختيارها. جمعت البيانات من خمسة مقالات بحثية مستخرجة من قواعد بيانات إلكترونية، بما في ذلك ASJP و Google Scholar و Re-search Gate، تناولت أهداف الدراسة بشكل مباشر. تشير النتائج إلى وجود توافق واسع بين الباحثين حول فوائد EMI، مثل تحسين الوصول إلى المراجع الطبية الدولية وتعزيز كفاءة الطلاب في اللغة الإنجليزية، إلا أن المشاركين أشاروا باستمرار إلى تحديات قد تعرقل تنفيذها الفعّال، بما في ذلك نقص إعداد الأساتذة، محدودية الدعم اللغوي للطلاب، وعدم توافق المناهج الدراسية مع واقع التعليم المحلي. وبناءً عليه، توضح النتائج أن نجاح تنفيذ EMI في الجزائر يعتمد على دعم مؤسسي مستهدف، وبرامج تطوير مهني منظمة للمدرسين، وتعديلات بيداغوجية مدروسة للتغلب على الحواجز اللغوية وتحسين نتائج التعلم. تسهم هذه المراجعة في توسيع الأدبيات البحثية حول EMI في الجزائر من خلال تقديم رؤى محددة للسياق المحلي وتوصيات للبحوث والممارسة المستقبلية، لا سيما فيما يتعلق بالاستراتيجيات اللازمة لمعالجة التحديات اللغوية والبيداغوجية في التعليم الطبي العالي.

الكلمات المفتاحية

التعليم الطبي العالي الجزائري
الإنجليزية كلغة تدريس
الطلاب والأساتذة غير الناطقين بالإنجليزية
إرشادات PRISMA
المراجعة المنهجية للبحوث (SLR)

L'enseignement en anglais dans l'enseignement supérieur médical en Algérie : revue systématique de 2022 à 2026

Résumé

Cette revue systématique synthétise les études empiriques examinant la mise en œuvre et l'expérience de l'enseignement en anglais (EMI) au sein des facultés de médecine algériennes entre 2022 et début 2026. Son objectif principal est de capturer les perceptions des étudiants et enseignants non anglophones concernant l'intégration de l'EMI dans le contexte de l'enseignement supérieur en Algérie. La revue met également en lumière les besoins spécifiques des parties prenantes et les implications pratiques pour les pratiques d'enseignement et d'apprentissage dans ce contexte. Suivant les lignes directrices PRISMA, la revue a assuré la transparence et la rigueur dans l'identification, le filtrage et la sélection des études pertinentes. Les données ont été recueillies à partir de cinq articles de recherche provenant de bases de données électroniques, dont ASJP, Google Scholar et ResearchGate, qui traitaient directement des objectifs de l'étude. Les résultats montrent qu'il existe un large consensus parmi les chercheurs sur les bénéfices de l'EMI, tels que l'amélioration de l'accès à la littérature médicale internationale et le renforcement des compétences en anglais des étudiants. Cependant, les participants signalent systématiquement des difficultés pouvant entraver une mise en œuvre efficace, notamment une préparation insuffisante des enseignants, un soutien linguistique limité pour les étudiants et des programmes qui ne sont pas entièrement adaptés aux réalités éducatives locales. Par conséquent, les résultats suggèrent que le succès de l'EMI en Algérie dépend d'un soutien institutionnel ciblé, d'un développement professionnel structuré pour les enseignants et d'ajustements pédagogiques réfléchis pour surmonter les barrières linguistiques et améliorer les résultats d'apprentissage. Cette revue contribue à la littérature EMI en Algérie en offrant des perspectives contextuelles et des recommandations pour la recherche et la pratique futures, notamment concernant les stratégies pour répondre aux défis linguistiques et pédagogiques identifiés dans l'enseignement médical supérieur.

Mots clés
Enseignement supérieur médical Algérien
Anglais comme langue d'enseignement
étudiants et enseignants non anglophones
lignes directrices PRISMA
revue systématique de la littérature (SLR)

Competing interests

The author(s) declare no competing interests

تضارب المصالح

يعلن المؤلف (المؤلفون) لا تضارب في المصالح