ENGLISH AS A MEDIUM OF INSTRUCTION (EMI): NON-ENGLISH MAJOR SCIENTIFIC TEACHERS' EXPECTANCY & REQUIREMENT VS. LANGUAGE LEARNING CHALLENGES

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Abstract: Algeria has recently embraced the use of English as a Medium of Instruction (EMI) for scientific subjects in higher education; a policy that has been already adopted by many non-English speaking universities. This decision, however, seems to raise the concerns of the Algerian scientific community. Equally, this abrupt change puts strains on many stakeholders involved, including both English teachers and scientific subject-matter instructors. In light of this issue, this work explores the complex task of teaching English to scientific university teachers to investigate the difficulties that scientific subject-matter instructors face in learning English language, taking the Ecole Nationale Polytechnique de Constantine (ENPC) as a case in point. This study reports on a one-year experience of teaching English to scientific teachers at the ENPC during the academic year 2022-2023. In this research, a mixed-methods approach was employed. Data were collected through diagnostic tests, unstructured classroom observations, and focus group discussions. The findings show that the reality of teaching English to scientific instructors falls far short of expectations. Many challenges were found to hinder the success of this process, including selecting appropriate content and adopting suitable methods for heterogeneous groups in terms of English proficiency level, discipline, availability, professional background, and age. Another major issue is the reluctance of subject teachers to attend/participate in the English course due to the demands of their pedagogical, research-related, and administrative responsibilities, besides their limited language learning capacity. In short, the current situation calls for a scrutiny of the task at hand and an elaborate plan that responds to the reality of higher education in the Algerian context.

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1. Introduction

English is nowadays regarded as a global language that is utilised in all spheres of society, including the media, politics, academics, business, and social circles. The intense globalisation of universities has solidified the English language's position as the current lingua franca of academia (Mauranen et al., 2010). The status of English as the global language for the acquisition, dissemination, and demonstration of academic knowledge (Hyland & Shaw, 2016) has prompted many institutions and universities worldwide to adopt English as a Medium of Instruction (EMI). EMI is broadly defined as "the use of the English language to teach academic subjects (other than English itself) in countries or jurisdictions where the first language of the majority of the population is not English" (Macaro et al., 2018, p. 37). The rapid expansion of the EMI trend has been further spurred by the internationalisation of higher education, which attracts international students and staff to boost the institutions' revenues, diversity, influence, and other driving factors, such as striving to enhance the universities' visibility and rankings and increasing students' employability in the global marketplace (Coleman, 2006).

Driven by some of the aforementioned incentives, the Algerian government has recently decided on an EMI language policy, prioritising English as the primary language of instruction in the scientific mainstream of higher education. Since Arabic and Tamazight are Algeria's official languages, and French is spoken as a second language, the place of English in the Algerians' linguistic landscape is limited. English is regarded as a foreign language integrated into the Algerian educational system as a subject taught at elementary schools (primary, middle, and secondary) and tertiary institutions.

In Algerian higher education, English is used to play only an ancillary role and is introduced through ESP (EST & EAP) courses, which are compulsory subjects that run across various disciplines, except for situations where the English language is considered a major in itself. The mediums of instruction at the Algerian tertiary level have long been Arabic and French. The majority of social sciences, law, and humanities courses are taught in Arabic, while hard sciences like mathematics, physics, engineering, and medicine are traditionally taught in French. The aspiration to promote the English language in higher education has been brought to discussion several times, and using English, which is regarded as a non-colonial language, is perceived favourably by Algerian students as opposed to French, which is associated with colonisation (Jacob, 2020). However, it was not until recently, in 2022, that the minister of higher education made a declaration to use English as the primary language of instruction in scientific domains at all universities. A decision that provoked fear and confusion among the Algerian academic community, especially since this policy was introduced "top-down" by policymakers without consulting all the relevant stakeholders.

2. Literature Review

Although extensive research has investigated the implementation of English as a Medium of Instruction (EMI) in European contexts (e.g., Coleman, 2006; Hultgren et al., 2015), comparatively less attention has been devoted to its application in North African countries, including Algeria. Interest in adopting the EMI policy at the higher education level in Algeria gained significant momentum in 2019, following an initiative by the Ministry of Higher Education and Scientific Research (MHESR), under the leadership of then-Minister Bouzid Tayeb, who conducted a nationwide survey to assess public opinion regarding the potential replacement of French with English as the primary language of instruction (Ghouali & Bouabdallah, 2024). The findings indicated strong public support, with 94% of respondents endorsing the shift (Ghouali & Bouabdallah, 2024). Accordingly, several studies (e.g., Bouhmama & Dendane, 2018; Medfouni, 2020) have examined the feasibility of

implementing EMI in Algerian universities, focusing on the perceptions and attitudes of students and teachers, which have generally been found to be favourable and aligned with the perceived benefits of EMI.

Following the policy shift in 2023 that replaced French with English as the language of instruction for scientific subjects in Algerian universities, a substantial body of empirical research has emerged examining this transition. A significant number of these studies have focused on exploring the perceptions and attitudes of both students and educators regarding the implementation of English as a Medium of Instruction (EMI). For instance, Ouarniki (2023) explored university teachers' perspectives on the EMI policy. Based on qualitative data obtained through interviews with ten teachers from various academic fields, the study revealed both the perceived benefits and the limitations of the policy. While teachers acknowledged the potential of EMI to enhance English language proficiency and broaden access to international academic resources, they also underscored considerable obstacles, such as limited language skills, inadequate resources, and insufficient training. Accordingly, Khenioui & Boulkroun (2023) explored the driving forces behind the transition to EMI, along with its challenges and implications. Their study involved surveying twenty-three Algerian EFL specialists from fifteen higher education institutions across the country. The results revealed several significant obstacles to EMI implementation, including limited English language proficiency among both instructors and students, resistance from certain educators due to ideological, pedagogical, or technical reasons, insufficient availability of appropriate instructional materials and textbooks, as well as challenges related to teachers' professional backgrounds, age, and time limitations. Similar findings have been reported by Hamane (2023), who surveyed 327 to elicit their perspectives about the advantages and challenges of the EMI policy. The results from this study revealed several challenges, including language barriers, difficulty understanding complex concepts, limited teacher-student communication in English, increased workload and stress, and a lack of qualified English-proficient teachers.

In a complementary study, Saidani & Afkir (2023) examined engineering students' attitudes toward an EMI program. Drawing on survey responses from 232 undergraduates, their findings indicated a generally positive student disposition toward EMI, primarily due to its perceived role in enhancing English language skills, deepening subject matter understanding, and expanding academic and career prospects. Accordingly, Benhamlaoui & Benzadri (2024) explored the attitudes and language preferences of instructors and students concerning the use of English, Arabic, and French as languages of instruction. Their findings highlighted a significant divergence in preferences: while teachers predominantly favoured Arabic and French over English, students demonstrated a stronger inclination toward Arabic and English, with French being the least preferred. In a similar vein, Touahmia & Bakar (2024) investigated the attitudes of Algerian EMI and non-EMI lecturers and students toward the English language. Their findings revealed that although the majority of university lecturers in Algeria acknowledge the pivotal role of English in the domains of science and technology, a significant proportion continue to exhibit negative perceptions regarding the implementation of the EMI policy. These results align with those of Maraf (2024), who also reported that while Algerian university instructors recognize the importance of English, many remain resistant to EMI, perceiving it as a potential threat that may contribute to linguistic imperialism. However, there are some conflicting findings from other studies. For example, Benabdallah (2023) explored university teachers' perceptions of the recent EMI reform, focusing on its benefits, challenges, as well as teachers' needs. Using questionnaires and interviews with a randomised sample of 66 teachers and 4 administrators from the University of Tlemcen and the Higher School of Management, the findings showed a generally positive attitude toward the reform. Teachers believed it would enhance Algerian universities and

scientific research. The findings also highlighted the need for training and professional development, especially in speaking and writing skills, to ensure a successful transition.

Another important dimension of EMI implementation that has garnered some attention in the Algerian context is teacher preparation and professional development. In this regard, Bouzidi (2024) investigated the readiness of non-English subject teachers at the University Centre of Barika, Algeria, to deliver instruction in English. Based on interviews with ten instructors, the study revealed that participants encountered significant challenges, particularly in balancing theoretical and practical aspects of their teaching and in obtaining sustained, context-specific support for EMI implementation. Bouzidi (2024) emphasized the need for training programs to incorporate contextualized content, intercultural competence, technology integration, structured collaboration, high-quality instructional resources, and robust institutional support to facilitate a successful transition to EMI.

Similarly, Menezla & Benghalem (2024) evaluated the effectiveness of training programs aimed at equipping Algerian university faculty with the skills necessary to teach in English. Their findings indicated that many instructors experienced considerable linguistic difficulties, often reverting to French to compensate for their limited English proficiency. Moreover, a substantial number of teachers perceived the training as inadequate, reporting persistent challenges in lesson planning, sourcing appropriate teaching materials, and conveying subject content due to restricted vocabulary.

Given that the EMI policy was passed recently in the Algerian context, research on this subject is still in its infancy. There is an urgent need for research to explore and examine all aspects of the implementation of the EMI policy and its impact in the Algerian context. This study strives to contribute to the understanding of this new trend in Algerian higher education regarding teacher preparation and training.

The EMI implementation started on a national scale in Algeria by the beginning of the academic year 2022-2023. Nevertheless, it was preceded by a preparation phase during the academic year 2021-2022, in which English teachers, ESP experts, and material developers were called to design courses and train subject matter instructors to teach in English. This task is the first challenge facing the implementation of EMI policy, given the dominance of French in Algerian higher education, the lack of subject matter teachers who are linguistically competent in English, the lack of ESP experts, and specialised material developers, in addition to the diversity of academic disciplines and domains where EMI is adopted. These apparent issues have also been reported in countries that have already taken the EMI initiative. For example, Dearden (2016) has concluded, after examining the phenomenon of EMI in 60 countries, that the educational infrastructure in many countries does not support quality EMI provision for many reasons, including a lack of linguistically qualified teachers, no expectations regarding English language proficiency, a lack of organisational or pedagogical guidelines that could promote effective EMI teaching and learning, and little to no EMI content in initial teacher education (teacher preparation) programs and continuing professional development.

As ESP instructors at the Ecole Nationale Polytechnique de Constantine (ENPC), a national higher education institution in Algeria, we were assigned the task of delivering an English course to subject matter teachers. Initially, this intervention was received positively by most teachers, who seemed enthusiastic to improve their English and were ready for the training. However, the implementation of the English course throughout the year has revealed that reality is different from expectations. This paper aims to report on the experience of teaching subject matter instructors to reveal the challenges involved in this complex task and

provide some deep insights into the participants' expectations, needs, language learning capacity, and availability. To this end, this research is guided by the following questions:

- What are the expectations of subject-matter teachers with regard to learning the English language?
- Do subject-matter teachers need training in General English (GE) or English for Specific Purposes (ESP), i.e., English for Science and Technology (EST) and English for Academic Purposes (EAP)?
- What is the estimated language capacity of subject-matter teachers? Are they able to reach high proficiency levels?
- Are subject-matter teachers available for immediate training and for future professional development?

3. Methodology

3.1. Research Design

The present study employed a mixed-method research design to report on the difficulties that science instructors encounter when learning the English language to use it as a medium of instruction in their specialized disciplines. The use of this triangulated approach is intended to strengthen the credibility of the findings and mitigate the limitations associated with single-method research.

3.2. Research Setting

This research presents a one-year initiative, aiming at teaching the English language to scientific teachers to prepare them for implementing the EMI policy. The program was led by ESP instructors at the Ecole Nationale Polytechnique de Constantine (ENPC), an engineering institution, following a request from the institute administration, which sought to capitalize on the instructors' linguistic and pedagogical expertise. Throughout the 2022–2023 academic year, the ESP instructors provided English language training tailored for scientific staff. This initiative aligned with the Ministry of Higher Education's policy to promote the integration of English in the teaching and learning of scientific subjects.

The program was structured around four instructional phases—labelled **A**, **B**, **C**, and **D** (see **Table 1**). Phases **B** and **D** comprised regular weekly sessions delivered during the academic semesters, with each session lasting two hours. To accommodate the demanding schedules of the participants, each weekly session was offered three times, with identical content, thereby enhancing accessibility and minimizing the risk of absenteeism. In addition to these semester-based sessions, two intensive training phases, **A** and **C**, were conducted during the winter and spring academic breaks. These intensive sessions were strategically scheduled during periods of reduced academic obligations to provide the participants with greater flexibility to focus on language learning.

Table 1. *Description of the four 4 teaching periods: A, B, C, and D*

Teaching Periods	A	B	C	D
N° of sessions	10	21 (7 sessions x 3)	6	18 (6 sessions x 3)
N° of hours	2 hours per session			
Description	Intensive sessions during one week - winter holiday-break	Three content-repeated sessions per week during the semester's weeks	Intensive sessions during one week - spring holiday-break	Three content-repeated sessions per week during the semester's weeks

The selected English course encompasses a broad range of linguistic components, organized into seven units (see **Table 2**). The syllabus aims to target the four core language skills, taking into consideration the optimal availability of teachers. The main objectives of the proposed English course are to help the learners communicate in English successfully and appropriately, to develop and use all four language skills (reading, listening, speaking, and writing), as well as to review and reinforce previously learned language.

Regarding course materials, a variety of instructional tools are employed to accommodate different learning styles, including auditory, visual, and kinaesthetic learners. These resources include PowerPoint presentations, videos, audio recordings, and handouts. The course is further enriched with assignments and interactive activities designed to enhance comprehension and deepen learning. Additionally, the course is accessible via Google Classroom, facilitating a hybrid teaching approach that aligns with contemporary educational trends.

Table 2. *The covered educational units during the English course*

	Units	Content
1.	**Introduction to the English language**	Basic concepts to know about the four skills and their development.
2.	**The sound system of English**	Phonetics vs. phonology, phonetic transcription, IPA, syllables, stress, etc.
3.	**Oral communication**	Self-introduction, successful conversation, overcoming communication breakdown, etc.
4.	**Grammar Overview**	The importance of grammar, reminder of parts of speech, etc.
5.	**Sentence writing**	Starting from the sentence parts, phrases, clauses, sentences types to highlighting the relationship between the later and the writing style.
6.	**Paragraph writing**	Starting from paragraph structure and constituents, coherence and unity to tackling supporting details in paragraph development.
7.	**Developing Skills: Great Ideas**	Implementing all the learned elements into a developing skill unit where the four skills, listening, speaking, reading, and writing, are practised in a form of discussing ideas both spoken & written.

3.3. Research Participants

The total number of teachers employed at ENPC during the academic year 2022–2023 was eighty-two (82) instructors distributed across five scientific departments: Science and Technology Preparatory Class Department (for 1st and 2nd year common branch students) and four specialised disciplines, namely Material, Mechanical, Process, and Electrotechnic & Automation engineering Departments. Of these instructors, seven (7) were excluded from the present study: three (3) had completed their studies in native English-speaking countries, three (3) were English language instructors (including the researchers themselves), and one (1) was a French language instructor.

The research participants, comprising seventy-five (75) scientific instructors, constitute a heterogeneous group characterized by diverse levels of language proficiency, professional experience (i.e., years of teaching), academic rank, age, scientific specialization, motivation, as well as varying levels of engagement in pedagogical, research, and administrative duties. Given this diversity, categorizing them under a single profile is challenging. To address this, the group is approached as a typical hybrid, mixed-ability cohort. Accordingly, the selected instructional content (see **Table 2**) is tailored to align with an intermediate level of English as a foreign language. It is important to note that these participants represent a typical sample of Algeria's elite scientific educators, being active researchers with a significant body of scientific publications in English language. Their

academic ranks range from assistant professors to full professors, and they are characterized by their intelligence, diligence, and strong commitment to their professional roles. For this reason, particular care was taken in the selection of learning materials to ensure they were intellectually stimulating and aligned with the participants' professional interests, thereby minimizing the risk of disengagement or lack of motivation.

3.3. Data Gathering Instruments

This research adopts a multi-method approach to data generation, drawing on both quantitative and qualitative accounts. A variety of data collection instruments were utilized, including language proficiency diagnostic tests, unstructured classroom observations, and focus group discussions.

First, to evaluate the participants' initial English proficiency levels in the four language skills, *four diagnostic tests* were implemented. **Table 3** describes the main criteria assessed, aiming to identify both the areas of strength and those requiring improvement among the participants. The design of the language proficiency tests was informed, in part, by the Common European Framework of Reference (CEFR). These tests were conducted before the commencement of the course, and results were recorded using a 20-point scoring scale.

Table 3. *The four diagnostic tests' tasks description*

Diagnostic Tests	Tested Tasks
Listening /20	1. Follow conversation in social context. 2. Understand and discern monologues in social contexts. 3. Follow conversation in academic/professional context. 4. Understand and discern monologues in academic/professional context.
Speaking /20	1. Fluency and coherence. 2. Lexical resources. 3. Grammatical range and accuracy. 4. Pronunciation.
Reading /20	1. Reading comprehension (true/false). 2. Reading strategies (inference). 3. Vocabulary activity (word level). 4. Vocabulary activity (sentence level).

Writing /20	1. Pre-writing (main ideas, type of discourse, paragraph structure, and verb explorer)
	2. Writing task:
	  a. *Vocabulary* (varied lexicography, word choice, and intended meaning)
	  b. *Grammar* (word order, suitable part of speech, tense, subject-verb agreement, punctuation, and spelling)
	  c. *Unity* (one single idea and relevant supporting ideas)
	  d. *Cohesion* (cohesive markers and sentence connection)
	  e. *Coherence* (smooth transition of ideas and logical order of ideas)

Secondly, classroom observation was employed as a key method of data collection since it offers researchers direct access to what happens within the language classroom. This method facilitates the gathering of authentic data in naturalistic settings, enabling researchers to observe events as they unfold rather than relying solely on retrospective accounts or second-hand reports (Cohen et al., 2020). In alignment with the exploratory nature of the present study, an unstructured observation approach was adopted due to its holistic and flexible characteristics. Observations were conducted throughout the entire duration of the course to record the observed language learning difficulties of the participants. Rather than

using predetermined checklists or coding schemes, the researchers documented data in descriptive narratives, focusing on elements directly relevant to the research questions. Additionally, attendance recording was set up throughout the academic year to assess participants' discipline, availability, and overall commitment to the learning process (c.f. **Appendix II** for more details).

Finally, Focus Group Discussions (FGD) were utilized as a supplementary data collection technique. FGD involves engaging a purposefully selected group of individuals in an in-depth discussion on a specific topic or issue. The participants of this study were engaged in *Group Discussions* to explore their expectations, perceived needs, attitudes, and perceptions through interactive dialogues. The main topic of these group discussions was the implementation of the EMI policy and how it affected the participants concerning English language learning. Data was recorded in a narrative style (notes), and only important themes and common issues were brought to the discussion.

4. Results & Discussion

Given the updated status of English in the Algerian scientific context, this research aimed to investigate the challenges associated with implementing the EMI policy, highlighting the difficulties that subject matter instructors faced in English language learning.

An overall look at the diagnostic tests' scores in the four language skills (see **Table 4**) demonstrates that the participants are relatively more skilful in both Reading (22/38 above average) and Writing (23/38) in comparison to Listening (13/38) and Speaking (12/38). It is found that the number of participants who scored above 15 is greater in Reading (8/38 teachers) and Writing (8/38) in contrast to Listening (3/38) and Speaking (1/38). These findings are justified, given that these teachers have long utilized English primarily for accessing scientific literature and producing academic publications. Conversely, few employ English for oral presentations at scientific conferences or seminars, largely due to a preference for events in Francophone contexts—a choice that seems to be driven by their limited oral proficiency. Accordingly, the findings from classroom observations have also revealed that the participants lack the ability to comprehend English spoken discourse, as well as the ability to speak fluently and accurately.

This issue appeared consistently throughout group discussions, during which participants candidly conveyed their frustration with enhancing their oral communication abilities, highlighting the anxiety and pressure they associate with this endeavour. Notably, participants frequently reported that preparing lectures in English posed little difficulty; rather, their principal challenge lay in delivering and articulating these lectures orally. These findings strongly indicate that English language training for subject-specific instructors should prioritize the development of listening and speaking competencies before addressing reading and writing skills.

Table 4. *Language proficiency levels across the four language skills (c.f.* **Appendix I** *for more details)*

Scores / Skills	5 and below	Between 5 and 9	Between 10 and 15	Above 15	Dismiss the test	Below average	Above average	Total number
Listening	8	5	10	3	**12**	13	13	
Speaking	3	12	11	1	**11**	15	12	38 teachers
Reading	1	6	14	8	**9**	7	22	
Writing	3	4	15	8	**8**	7	23	

Results from classroom observations and group discussions highlight the emergence of three distinct participant profiles based on their motivation and attitudes towards EMI. The first group is composed of individuals who recognize the importance of the English language in the scientific domain and demonstrate a proactive approach by attending and participating in English sessions, despite their demanding schedules. This group of participants was highly motivated and seemed to hold positive attitudes towards the implementation of EMI. The second group, while also acknowledging the utility of English, displays reluctance to engage with the challenges of acquiring a foreign language, particularly within an academic setting. This latter cohort seems to be less motivated to learn English and frequently expresses scepticism regarding the practicality of EMI in the Algerian higher educational context. The third group comprises a minority of participants, particularly those with a strong Francophone background who perceived English as a peripheral subject. These individuals openly rejected EMI from the outset, opting neither to participate in the diagnostic assessments nor to attend the language training sessions. This finding aligns with the results of many previous studies (e.g. Khenioui & Boulkroun, 2023; Maraf, 2024; Touahmia & Bakar, 2024).

Furthermore, insights derived from the group discussions highlighted a prevalent misconception among participants, who initially perceived English as comparatively easier to acquire than scientific subjects. However, as they progressed through the English training sessions, participants began to confront unforeseen linguistic difficulties and came to recognize that achieving proficiency in English necessitates considerable time and sustained effort. Many participants reported feelings of disappointment stemming from unrealistic expectations, such as attaining fluency within a few months. While such an aspiration is not inherently unachievable, numerous obstacles emerged as impediments to its fulfilment, leading to a sense of disillusionment among several respondents.

Another significant challenge that emerged from data analysis was the difficulty of teaching and learning English in a heterogeneous classroom. The participants differed considerably in terms of English language proficiency, age, disciplinary backgrounds, professional experience, as well as learning styles and preferences. Classroom observations highlighted obstacles related to a generational gap between younger and older learners. Participants in their fifties generally required a slower instructional pace and demonstrated a preference for teacher-centred approaches reminiscent of the grammar-translation method, with an emphasis on reading, writing, and grammatical structures. In contrast, younger participants were more inclined toward active classroom engagement and expressed a desire to improve their speaking and listening skills, which they identified as areas of weakness. This divergence in expectations and needs created challenges in selecting appropriate pedagogical methods and instructional materials.

A closely related issue was the selection of an effective English for Specific Purposes (ESP) approach. Data from group discussions revealed that while many participants felt confident in their knowledge of discipline-specific terminology, they reported a lack of general academic vocabulary and structures necessary for linking ideas and performing various communicative functions. Selecting appropriate methods and materials for training teachers to use EMI is a challenge that was also reported by many researchers (e.g. Khenioui & Boulkroun, 2023; Ouarniki, 2023; Menezla & Benghalem, 2024). Considering the different disciplinary backgrounds and the feedback of the participants, English for General Academic Purposes (EGAP) appears to be the most suitable instructional framework.

Concerning the participants' availability and commitment to learning English while fulfilling their full-time teaching responsibilities, it became evident that although interest was present, professional duties hindered consistent engagement. Data obtained from classroom attendance sheets across four instructional periods (see **Table 5**) show that participation was

significantly higher during academic breaks (Period **A**: 92.45% and Period **C**: 41.50%) than during active teaching periods (Period **B**: 33.96% and Period **D**: 5.60%). Teachers frequently cited their teaching and research supervision responsibilities as significant barriers to regular attendance.

Additionally, as the course content became more advanced, attendance declined further (intensive sessions: **A**: 54.71%, **C**: 29.87% *vs*. weekly sessions: **B**: 19.13%, **D**: 4.40%). This decline may also be attributed to the participants' perceived linguistic and psychological limitations. Many reported difficulties in acquiring a new language at their current stage in life, feeling increasingly overwhelmed as the course progressed. Consequently, some opted to withdraw entirely, viewing non-attendance as a means to avoid the growing cognitive and emotional demands associated with learning a foreign language in an older age. They admitted to underestimating the challenges of language acquisition post-formal education.

Table 5. *Participants' attendance number in accordance to the scheduled sessions (c.f. Appendix II for more details)*

Teaching Periods	N° of attended participants	%	N° of attended sessions per participant	%	Total N° of sessions per period and per participant	%
A (10 sessions)	49	92.45	290	54.71	530 (53 x 10)	34.48
B (7 sessions)	18	33.96	71	19.13	371 (53 x 7)	24.13
C (6 sessions)	22	41.50	95	29.87	318 (53 x 6)	18.09
D (6 sessions)	3	05.60	14	04.40	318 (53 x 6)	18.09
Sum (29 Ss.)	53	100	470	30.57	1537 (53 x 29)	100

5. Conclusion

This study has examined the practical challenges encountered by scientific teachers at the École Nationale Polytechnique de Constantine (ENPC) in learning English for the purpose of using it as a medium of instruction within their respective disciplines. The findings reveal a significant gap between expectations and the realities of implementing the EMI policy. Several factors hinder the effectiveness of this transition, including the difficulty of selecting suitable content and methodologies for a heterogeneous group of teachers with varying levels of English proficiency, disciplinary backgrounds, age, and professional experience.

A key finding highlights that the participants demonstrate greater proficiency in reading and writing compared to speaking and listening, indicating a need for English language training programs to prioritize the development of oral communication skills. Another major obstacle is the reluctance and resistance of subject teachers to engage in the training, largely due to their existing administrative, teaching, and research responsibilities, as well as insufficient linguistic competence. Furthermore, the study reveals a spectrum of motivational levels and attitudes toward the EMI policy, ranging from enthusiastic acceptance to resistance and scepticism.

To facilitate a smoother transition to EMI, it is imperative to consider several factors. First, it is crucial to either reduce the teachers' workload during the intensive training period or adopt a long-term training model. Moreover, EMI training programs must be context-sensitive and should be tailored to the specific needs of local institutions, avoiding a one-size-fits-all approach. In the case of ENPC, particular attention should be devoted to enhancing listening and speaking competencies. Ultimately, the EMI agenda in Algeria warrants a comprehensive reassessment through large-scale, in-depth research that actively involves all

stakeholders and considers the distinctive challenges of the national higher education landscape.

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Appendices

Appendix I

Four skills proficiency levels in accordance with age and academic rank

Indicators: 5 and below, between 6 and 9, between 10 and 15, and above15

Teachers	Academic Rank	Age Range	Listening skill	Speaking skill	Reading skill	Writing skill
Material Engineering Department						
1	Professor	In the 60s	-	-	10.50	10.50
2	Professor	In the 70s	03.50	04.00	08.50	08.50
3	Associate Prof. -level A	In the 40s	07.50	06.00	14.00	12.50
4	Associate Prof. -level B	In the 50s	08.00	07.00	16.00	-
Mechanical Engineering Department						
5	Professor	In the 60s	-	06.50	11.25	11.00
6	Associate Prof. -level A	In the 40s	13.50	12.00	15.50	15.50
7	Associate Prof. -level A	In the 50s	-	-	-	00.00
8	Associate Prof. -level A	In the 40s	-	15.50	-	-
9	Associate Prof. -level B	In the 50s	04.50	07.00	09.75	-
10	Assistant Prof. -level A	In the 30s	08.00	10.50	16.75	-
11	Assistant Prof. -level A	In the 30s	05.00	07.50	11.00	09.50
Process Engineering Department						
12	Associate Prof. -level B	In the 50s	03.00	07.00	09.75	-
13	Associate Prof. -level B	In the 30s	14.00	11.00	07.50	14.25
14	Assistant Prof. -level A	In the 30s	-	-	-	03.75
15	Assistant Prof. -level A	In the 30s	11.00	07.00	13.75	15.50
Electrotechnic and Automatic Department						
16	Associate Prof. -level A	In the 40s	11.50	08.00	13.50	18.00
17	Associate Prof. -level A	In the 40s	-	-	-	10.75
18	Associate Prof. -level A	In the 40s	06.50	06.50	-	-
19	Associate Prof. -level B	In the 40s	-	-	16.75	-
20	Associate Prof. -level B	In the 40s	-	-	-	11.75
21	Associate Prof. -level B	In the 40s	-	-	-	15.50
22	Associate Prof. -level B	In the 30s	13.00	11.50	10.00	09.25
23	Associate Prof. -level B	In the 40s	12.50	10.00	20.00	16.00
24	Associate Prof. -level B	In the30s	-	-	05.75	05.50
25	Associate Prof. -level B	In the 50s	03.50	13.00	12.75	11.50
26	Assistant Prof. -level A	In the 30s	17.50	13.00	15.25	15.50
Preparatory Class Department						
27	Professor	In the 60s	-	-	14.75	14.25
28	Professor	In the 60s	02.00	06.50	10.25	11.00
29	Associate Prof. -level A	In the 30s	10.50	11.50	18.50	17.00
30	Associate Prof. -level B	In the 30s	18.00	13.00	13.23	14.00
31	Associate Prof. -level B	In the 30s	05.00	06.00	13.75	17.75
32	Associate Prof. -level B	In the 30s	10.00	-	-	-
33	Associate Prof. -level B	In the 30s	14.00	10.00	16.75	11.75
34	Associate Prof. -level B	In the 30s	12.00	09.00	-	11.50
35	Associate Prof. -level B	In the 30s	16.50	11.50	14.25	12.00
36	Associate Prof. -level B	In the 30s	-	-	13.75	12.75
37	Assistant Prof. -level A	In the 30s	08.50	04.50	07.75	13.25
38	Assistant Prof. -level A	In the 40s	02.00	03.50	04.75	02.25

Appendix II
Participants' presence recording in four (4) teaching periods

Teaching periods / Participants	N° of sessions per participant			
	A (10 sessions)	**B** (7 sessions)	**C** (6 sessions)	**D** (6 sessions)
1	2	3	6	-
2	-	4	2	-
3	8	-	2	-
4	8	-	-	-
5	10	5	6	-
6	8	-	1	-
7	8	7	3	4
8	2	-	-	-
9	10	-	6	-
10	4	-	-	-
11	4	-	-	-
12	2	-	-	-
13	8	-	5	-
14	2	-	-	-
15	4	-	-	-
16	8	1	-	-
17	8	4	4	-
18	6	2	4	-
19	4	-	-	-
20	4	3	-	-
21	4	-	-	-
22	4	-	6	-
23	4	-	-	-
24	8	-	4	-
25	8	-	4	-
26	8	5	4	-
27	6	-	-	-
28	4	-	-	-
29	4	-	6	-
30	10	7	5	1
31	4	-	-	-
32	4	-	-	-
33	8	-	6	-
34	-	-	1	-
35	-	-	6	-
36	10	7	-	6
37	6	-	-	-
38	8	-	2	-
39	4	-	-	-

40	6	-	-	-
41	4	4	-	-
42	8	-	-	-
43	6	-	-	-
44	4	5	-	-
45	8	1	-	-
46	10	3	2	-
47	2	-	-	-
48	2	-	-	-
49	4	-	-	-
50	-	4	-	-
51	6	3	6	3
52	10	3	4	-
53	6	-	-	-