



The Transition from French to English in Algerian Higher Education: Students' Experiences and Language-Related Challenges

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Abstract ;

This study aims to investigate the challenges and experiences of Algerian higher education students following the shift from French to English as a medium of instruction. To achieve this, a semi-structured interview was conducted with 90 first-, second-, and third-year students majoring in Control Engineering at Ecole Nationale Polytechnique (ENP), and data were analyzed thematically. The results showed that students support the introduction of EMI, associating it with improved access to scientific knowledge. The study recommends targeted teacher training, interactive learning strategies, along with the gradual shift to the English medium of instruction.

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1. Introduction

Throughout time, English has progressively established itself as the dominant language of scientific research, academic publishing, and international knowledge exchange. It is considered to be a *Lingua Franca*, and the international language used by people from all over the world to communicate and reach mutual intelligibility. Consequently, there has been a global trend for universities to switch to English as a Medium of Instruction (EMI) particularly in hard sciences, such as engineering (Dearden, 2015; Macaro, 2018).

The use of English is therefore intertwined with the promise of positive institutional and individual outcomes, including ready access to the latest research, improved employment prospects, and increased visibility on an international scale for both educational organizations and their graduates. This recent trend reached Algeria, a country situated in Africa, which for centuries, adopted French as a 2nd language.

In Algeria, language use in higher education reflects a complex historical and sociolinguistic trajectory. French has long functioned as the primary language of instruction in scientific and technical

fields, including engineering, while Arabic has dominated other academic domains. English, until recently, occupied a marginal position, largely restricted to foreign language courses.

In recent years, however, Algerian higher education has experienced a notable policy turn in recent years as English is more and more advocated as medium of instruction in the scientific fields. This transition was required to be implemented in all universities nationwide, including the *École Nationale Polytechnique* in Algiers (ENP), one of the country's leading engineering schools. While the shift brings Algeria into line with global academic trends, it is also a profound pedagogical and linguistic challenge for students educated mainly in French.

2. Research Gap

Even though research on EMI has been carried out in other continents such as Asia and the Middle East, empirical studies that specifically target the Algerian context in higher education are scarce, especially in the field of engineering studies. The debate in previous studies has mostly been based on ideologies rather than empirical data related to students' perceptions in class regarding the transition from French to English.

In addition, relatively few investigations have explored participants at multiple points in their educational careers, and it is important that perceptions, challenges, and coping strategies be considered in the context of changing student development over time.

3. Purpose of the Study and Research Questions

To bridge the gap, the current study examines the perceptions of students majoring in control engineering students at the ENP regarding the on-going language shift from French to English used as a medium of instruction. Using data gathered from a survey of 90 students majored in their first, second, and third year, three key aspects are investigated: students' perceptions of the speed of the language shift, their language-related problems, and their language learning strategies to cope with English medium education.

The study is guided by the following research question:

How do control engineering students in Algerian higher education perceive the shift from French to English as a medium of instruction, with regard to the challenges they face?

By foregrounding students' voices, this study seeks to contribute empirically

grounded insights to ongoing debates on English-medium instruction, language policy, and engineering education in non-Anglophone contexts.

4. Literature review

4.1. Students at the Center of the Transition

Language policy decisions are often formulated at the institutional or national level, yet their success ultimately depends on how they are experienced in classrooms. In EMI research, students' perceptions have been shown to play a central role in shaping learning outcomes, engagement, and attitudes toward instruction (Tatzl, 2011; Lasagabaster & Sierra, 2009).

When EMI is introduced at a very rapid pace, the experience of students could be that of disruption or lack of support. Concerns have also been raised in existing literature regarding the impact of EMI on the understanding of subject matter (Airey, 2012), the increase in the cognitive load of students, as well as the generation of anxiety linked to academic achievement (Macaro et al., 2018). On the other hand, strategies are employed by students to deal with the challenges posed by EMI instruction in an English-medium environment, which might involve code-switching, use of prior knowledge in

another language, or study group assistance.

In the Algerian engineering environment, these points are even more pertinent. The requirements for engineering education include precision, clarity, and the capacity to treat abstract and technical material. Therefore, any form of language barrier may have the potential to impact communication and, further, the conceptual understanding.

4.2. English-Medium Instruction and Language-Related Challenges in Engineering Education

The adoption of English Medium Instruction (EMI) in engineering education has been a topic of discussion in the literature as a complex process of pedagogical change that goes beyond a mere shift in language of instruction. EMI adds new linguistic and cognitive complexities, especially in scientific and technical fields that require precision, abstraction, and domain-specific vocabulary. Studies have found that in non-Anglophone countries, students have been found to face challenges of understanding, engagement, and performance when EMI is introduced without adequate linguistic preparation (Airey, 2012; Macaro et al., 2018).

In engineering education, these issues are further exacerbated because of the high density of technical discourse. Students are required not only to master engineering concepts but also to process them through a foreign language. This adds to the cognitive complexity of learning and has been found to negatively impact learning outcomes, causing students to resort to surface-level learning strategies rather than deep conceptual learning (Airey, 2012).

In terms of language-related challenges, in the Algerian context, such issues were addressed by Tihal (2025), who discussed the complexity of implementing EMI in HEIs where students were traditionally taught Arabic and French. In fact, according to Tihal (2025), many Algerian students are not exposed to English as an academic language, which makes it a challenging task for them to adjust to an EMI system. The sudden change in language may influence their comprehension of course content.

Moreover, it has been stated by Tihal (2025) that the lack of linguistic support adds to the complexity associated with EMI. Students are forced to use survival strategies such as code-switching, translation, or collaboration with their peers to facilitate their comprehension. The use of such survival strategies indicates

that there are discrepancies between language policy and practice. The aforementioned issues were also addressed in literature on EMI, which emphasizes the need for incorporating English for Specific Purposes (ESP) support in engineering courses (Macaro et al., 2018).

Overall, existing research demonstrates that the key to the success of EMI in engineering education lies in the way in which language-related issues are tackled. In the Algerian higher education system, it is vital to recognize the linguistic profile of the students in order to ensure that the change from French to English does not negatively impact the learning outcome.

5. Methodology

5.1. Study Design

In this study, a qualitative paradigm is utilized to explore perceptions and experiences of engineering students regarding the sudden shift from French to English as the medium of instruction in higher education institutions in Algeria. Given the nature of the study, which aimed at acquiring individual experiences of the respondents, a semi-structured interview was conducted. This method permits participants to have ample freedom in expressing opinions, experiences, and reflections on the issues

under scrutiny. This method also permits flexibility in exploring issues as they arise, thus deriving an in-depth insight into the issue concerning the experiences of the students under the English-Medium Instruction when the French language was already being practiced (Merriam & Tisdell, 2016; Creswell & Poth, 2018).

The reason behind using a qualitative, exploratory approach is to investigate engineering students' perceptions of the shift from French to English as a medium of instruction in Algerian higher education institutions. In this context, it was believed that a qualitative approach was best suited because the study seeks an in-depth exploration into the experiences, beliefs, and attitudes toward EMI and not to measure pre-defined variables or test hypotheses.

The study is exploratory in nature, given that EMI implementation in the Algerian engineering context is only recent and has been under-researched. This design may grant flexibility in data collection and analyses to allow the researcher to capture nuances in participants' perspectives on the tempo of implementation, the challenges related to language, coping strategies, and benefits perceived by the introduction of EMI.

The foregrounding of students' voices in this research design provides insight into the enactments and experiences of a macro-level language policy decision at the micro-level of the classroom. An approach of this nature becomes particularly relevant in contexts experiencing rapid educational change.

5.2. Setting and Participants

The study was conducted at the Ecole Nationale Polytechnique (ENP). Located in Algiers, the school is considered as one of the most reputable engineering schools, as it offers highly selective programs in engineering and is renowned for providing scientific and technically rigorous training. The academic institution offers programs in various fields of engineering, which include control engineering, civil engineering, electrical engineering, mechanical engineering, and process engineering.

Concerning the participants, they are a total of 90 control engineering students, ranging from first, second, and third years. They present a cross-section, examining how learners from various points along their educational path experience this transition from a non-EMI environment. Moreover, the students had varying exposure levels to the English language,

either basic to advanced. The heterogeneity of exposure levels was intentional to ensure that the study encompasses a large spectrum of experience, from students who are comfortable with courses conducted in English to students who face challenges in the English language.

It is important to acknowledge that the participants were informed about the study and were required to give consent before being included in the study. Confidentiality was ensured, and their anonymity was guaranteed. The ethics of this research were exercised following the institutional as well as global rules of qualitative research (Creswell & Poth, 2018).

5.3. Data Collection Procedure

A semi-structured interview was conducted for collecting data in this study. The reasoning for using interviews as tools for data collection is their flexibility, which allows in-depth information to flow, permitting individuals to air their views regarding their experiences, perceptions, and strategies in their own words. Moreover, it is highly effective for conducting research in second language settings, including English-medium instruction, where the opinions, attitudes, and issues encountered by individuals regarding the change in a particular policy play a pivotal role.

The interview consisted of nine questions designed to explore the key dimensions of the study. The questions sought the perceptions regarding the shift from the use of the French language to the English language as the medium of instruction, the pace at which the change should take place, the pros and cons of the change, the difficulties associated with the change in relation to the use of the selected language, the strategies that the students take in order to overcome the challenges of teaching in the English language, and the suggestions on how the change should be proceeded.

This interview can elicit information regarding facts as well as personal insight, both of which are meaningful in sustaining an all-encompassing understanding of students' experiences in this transitional phase of higher education in Algeria.

5.4. Data Analysis

The transcripts were analyzed using thematic analysis, following the procedures outlined by Braun and Clarke (2006) to identify recurring patterns and themes within the data. Thematic analysis is aptly used in this study to identify themes and patterns within data. The study aimed to identify the core perceptions and experiences of students on the following aspects:

- The rate and process of the shift in language
- Language-based issues for students and teachers
- Coping strategies adopted by students in handling EMI
- Perceived benefits and suggestions for improvement

A thoughtful coding procedure enabled the grouping of recurring concepts into themes, which uncovered not only shared experiences but distinctive viewpoints to create a highly contextualized view of the implementation of EMI in Algerian engineering education.

6. Results

The analysis of the interview data yielded seven main themes, reflecting students' experiences and perceptions of the shift from French to English as a medium of instruction in engineering education.

In response to the research question *"How do control engineering students in Algerian higher education perceive the shift from French to English as a medium of instruction, with regard to the challenges they face?"*, the following themes were identified:

Theme 1: Limited but Emerging Use of English in Instruction

Most respondents indicated that there is only one teacher presently conducting lessons in English and that is for approximately 75 out of 90 students. Most students reported that this is because it is a newly implemented policy which is applied on newly admitted bachelor students, as one student noted, *“English is only used by one teacher so far, and it is still very limited”*. Another participant explained that *“we still study mostly in French because the transition is just starting”*. Some students also pointed out that while there is English used in some technical expressions and written literature, French is predominant in explanations within class and that EML is still in its early stages.

Theme 2: Teacher Attitudes Toward EMI

Students described mixed attitudes among teachers regarding EMI. Some teachers seemed motivated and ready to execute English-language classes, while approximately 25 students believed some teachers were reluctant or were coerced into conducting classes in English. As one student stated, *“some teachers are trying their best to teach in English,”* whereas another mentioned that *“others seem*

uncomfortable and prefer to continue in French”.

Theme 3: Coping Strategies in English-Medium Courses

Despite these challenges, students exhibited effective coping mechanisms. Most (about 65 students) relied on translation resources and applications like Linguee. One student explained, *“I always use translation apps to understand technical words”*. Others (approximately 45 students) had watched English technological videos (such as those found on YouTube) to acquaint themselves with engineering terminology, while about 30 had made efforts to enhance English exposure for better comprehension and confidence.

Theme 4: Divergent Perceptions of the Pace of Implementation

Students' perception of the pace of this transition was quite varied. Approximately 30 participants felt it was too fast, especially for both tutors and students: *“the change is too fast; we are not ready yet.”* However, more participants, roughly 50, appreciated this transition, as they perceived it was a necessity or a reality they could not change, with one noting that *“English is important for our future, so we have to adapt.”* Most perceived this transition having little

bearing upon English or French, which remains largely foreign to Algerian culture. It is worth mentioning that some participants supported substituting French with English.

Theme 5: Language-Related Challenges for Students and Teachers

Language difficulties were one of the dominant issues that emerged. A vast number of students, about 70, cited the teachers' lack of proficiency in English, pronunciation fluency in particular, making comprehension difficult. One participant stated, *"sometimes it is difficult to understand because of pronunciation"* A total of 40 students expressed concerns with the introduction of some technical terms, while around 35 students expressed difficulties asking questions using English, with a focus on pronunciation and translation : *"I find it hard to ask questions in English,"* and *"some terms are new and confusing"*. Some students also raised the issue of overgeneralization and language transfer by the teachers.

Theme 6: Perceived Benefits of EMI for Engineering Students

The largest number of participants (about 60) found EMI to have learning and professional benefits, for instance, easier access to research data, increased English language exposure through the internet,

and enhanced opportunities for studying or working abroad. One student remarked, *"English helps us access more research and resources online."* Another added, *"it will help us study or work abroad in the future."* The other category of participants (about 15 students) had reservations based on the prevalence of French language dominance and the Arabic language being the mother tongue.

Theme 7: Student Recommendations for Improving EMI Implementation

Students suggested several strategies on how EMI should be implemented. Around 70 students stated that there should be a step by step introduction to English, with one stating, *"English should be introduced step by step."*, while about 55 others proposed that language introduction should begin earlier, for instance, at primary schools. Moreover, training teachers was identified as one of the key needs by over 60 students. Lastly, about 35 others proposed that there should be variations in teaching approaches to engage students in classroom discussions as opposed to question-and-answer approaches.

7. Discussion of the results

Challenges and potential competencies are identified through the ongoing research context concerning the implementation of

EMI in the Algerian engineering field. On the one hand, students are receptive to the shift from French to English. However, some snares concerning the pace of the transition process, teachers' readiness in terms of English languages usage in the classroom (as a medium of instruction), and communication difficulties. On the other hand, the ways students cope with these challenges and their suggestions reveal resilience and adaptability, therefore reflecting a potential to integrate EMI in spite of existing barriers.

Overall, students support the implementation of EMI, albeit with a limited extent of its usage and at an immature stage of its implementation process (Theme 1). The students mentioned the benefits related to studies in English, including others like easy access to research work, employability, and compatibility with terms used in technology. These points are in congruence with other studies conducted on EMI in non-English speaking higher education institutions (Macaro et al., 2018; Dearden, 2015; Galloway & Rose, 2017).

Students also emphasized the need for gradual implementation and focused teacher training (Themes 3 and 7), which resonates with research indicating that EMI needs to be institutionally embedded and

implemented in incremental steps to help student understand and increase teachers' confidence (Doiz, Lasagabaster, & Sierra, 2013). It is worth noting that there were some divergent views on the pace of transition: some students felt that the transition had been fast, while others thought it was necessary. This resonates with the wider EMI literature, which notes tensions between rapid language policy implementation and institutional readiness (Cenoz & Gorter, 2011).

The language-related difficulties snowballed as one of the dominant themes (Themes 5 and 6): Students found it difficult to follow the teachers' English language skills, technical terms, and communication abilities. In fact, there have been numerous similar findings from other parts of the world in EMI settings (Macaro, 2018; Galloway, 2017). The methods that students employed for overcoming these difficulties, like the use of translation applications, additional technical videos, and self-study, indicate that they are proactive towards dealing with the newly introduced language in the classroom as well. Such methods have been practiced in European and Asian institutions as well, where the resources for language support are minimal, and the students tend to design their own learning contexts by

themselves, as seen in several other studies as well (for instance, Doiz et al., 2013; Airey, 2012).

Other factors that greatly influenced the study were the attitudes of the teachers (theme 2), who were unwilling to adopt EMI. This once again proves the previous literature that the factors that influence the implementation of EMI effectively are the motivation of teachers, confidence, and training. But nevertheless, the students are very resilient and resourceful; they themselves can use effective strategies to overcome all these difficulties and actually access technical knowledge.

Taken together, the results underscore the practical and academic value of EMI in Algerian education globally and engineering fields specifically, while highlighting the need for gradual implementation, structured teacher training, and supportive instructional resources to ensure its success and sustainability.

8. Implications of the study

One important element brought to light by this research is the transitional period being presently witnessed by Algerian higher education institutions, whereby English is becoming progressively the language of scientific education. Although students welcome the policy to introduce

English as a medium of education, they face certain challenges. This points to the fact that while developing language policy, there should be initiatives to provide support to students, such as:

- Teacher training courses targeting English and EMI classes
- Scaffolded introduction of English within the curriculum
- Integration of supportive resources like translation tools, glossaries, and multimedia resources

Furthermore, the study contributes to the emerging global literature related to English-medium instruction by offering insights from the Algerian context, where French has conventionally held a prestigious position in higher education. This study reveals the manner in which English is progressively being embedded in academic programs because of the global and professional integration.

9. Recommendations

Based on the findings of this study, several recommendations can be proposed to support the effective implementation of English-medium instruction (EMI) in Algerian engineering education.

First of all, there should be a focus on teacher training programs. These should deal with English proficiency as well as teaching methods for EMI, so that lecturers

can teach the technical knowledge easily while being clear and correct at the same time.

Second, such a transformation to English Media of Instruction can be done in a progressive and supportive manner. English can be gradually introduced to different levels of education to enable a smoother transition from primary to university education. This would enable learners to gain proficiency in the language.

Thirdly, higher education institutions can incorporate supportive learning resources for EMI students. These supporting resources can encompass specialized glossaries, translations, bi-lingual textbooks, and multimedia resources designed for the field of engineering. These can potentially improve understanding when EMI is introduced for the first time.

Lastly, a mix of teaching methods is advisable in order to foster involvement and comprehension among students. Using a combination of teaching approaches such as interactive lessons, group activities, and technology-mediated learning can perhaps transform classroom teaching from a question-and-answer process to a more effective learning experience, all while using English.

Overall, these points seek to fill the gap that has existed between language policy and practice in addressing how the introduction of EMI should favorably affect academic performance and readiness for professionalism.

10. Conclusion

This study sets out to explore control engineering students' perceptions, challenges, and coping strategies in response to the recent shift from French to English as a medium of instruction at the Ecole Nationale Polytechnique (ENP). The findings reveal that, despite the early and transitional stage of implementation, students largely support the adoption of English and recognize its academic, professional, and global value, particularly within technical and engineering fields.

Nonetheless, the study sheds light on some of the major challenges that are being witnessed during the transition, including teacher linguistic unpreparedness, communication difficulties within the classroom as well as students' struggle with technical terms and oral expression. All these challenges underscore the need to treat education conducted in English as a learning process and a pedagogical transformation that requires support rather than a linguistic policy decision.

Notably, the results prove students' flexibility and autonomy. Students' ability to utilize translation softwares, multimedia materials, and independent English exposure is their strategy to deal with the language problem and access technical information. Moreover, their suggestions reveal the necessity of a slow implementation process and the initialization of English instruction at the earliest stage of the educational system, along with a good, comprehensive teacher training.

All in all, this study contributes to the increasing body of literature on English medium instruction with its focus on the Algerian setting, where the language of higher education has long been French. In doing so, it highlights the potential of EMI on improving academic integration and career mobility while reiterating that its successful implementation requires meticulous planning.

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12. Appedix : Interview Questions

1. How many of your teachers currently use English in their instruction?

2. Do you think the decision to implement English as a medium of instruction was made quickly or rushed?
3. What difficulties do you face as students, and what challenges do your teachers who do not speak English encounter?
4. Do you think the decision to shift to English should be maintained, or should the system return to French?
5. Why do you hold this opinion?
6. What specific strategies do you use when you do not understand technical content in English?
7. What do you consider the key benefits of implimenting EMI in Algeria?
8. What are the benifits for you as engineering students ?
9. What suggestions do you have to improve the implementation of EMI?