English as a Medium of Instruction and Research in Algerian Higher Education: Investigating Francophone Teachers' Perspectives and Cognitive Language Processing

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Abstract: The Algerian higher education sector is shifting towards English as the primary language of teaching and research. The effectiveness of this shift remains to be confirmed, particularly with regard to the continued use of French as a medium of instruction. This study aims to examine the attitudes of Algerian Francophone university teachers towards this shift, the place of the French language in their English-based teaching and research, and whether the adoption of English impacts Francophone teachers' cognitive language use. The study used a mixed-methods approach that combined a survey (N=50), analysis of 11 texts for linguistic patterns, and linguistic analysis to explore Francophone teachers' cognitive tendencies in their English written research. The results revealed that 14.0% of the participants hold negative attitudes towards teaching and research in English. As far as the role of English in Francophone teachers' thinking processes, the analysis found that English is not their primary language of thought but rather a tool for expressing ideas that were initially formulated either in French 44.0% or both French and mother tongue 24.0%. Also, AI-assisted analysis of Francophone teachers shows that 100% of their academic writing is generated by AI, proving a reliance on AI for translation rather than direct thinking in English. These findings highlight the challenges facing the transition to English-language education in the Algerian context, particularly its impact on teachers' attitudes, cognitive engagement, and research productivity. Ultimately, the findings confirmed that teachers rely on their language of training and academic development, with English serving merely as a translated medium of expression.

Keywords: Algerian higher education; attitudes towards English-medium instruction; cognitive processes; francophone instructors

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1. Introduction

1.1. Background of the Study

The shift towards English as the primary language of instruction and research in Algerian higher education is causing misunderstandings among linguistic and educational scholars. While this policy change attempts to align with global academic trends and competitiveness, its abrupt implementation as a medium of instruction raises critical concerns regarding its effectiveness and impact on Francophone university instructors. While Algerian policymakers advocate for the quick adoption of English-medium instruction (EMI) to enhance academic visibility and global engagement, the effectiveness of this transition is uncertain, particularly for Francophone university instructors who need first to adapt their scholarship to the English language.

1.2. Problem Statement

Algerian Francophone teachers have been teaching and conducting research in the language they have used throughout all stages of their education. This language has become an integral part of their whole-person development. The decision to replace it with English has presented a significant challenge. Psychologically speaking, for these teachers, this language shift is a form of weaning, which might be a painful experience, requiring instructors to furnish efforts that extend beyond their cognitive and emotional capacities. The key challenges that arise include:

– The difficulties Francophone instructors may face in adapting to EMI, particularly regarding language proficiency, attitudes, and research productivity;
– A key concern is whether adopting English as a medium of instruction necessitates deeper cognitive engagement from instructors or if they simply continue to rely on French for conceptualizing ideas.

1.3. Purpose of the Study

This study aims to examine the attitudes of Algerian Francophone university teachers toward this shift, the role of the French language in their English-based teaching, and whether the adoption of English as a medium of instruction (EMI) impacts teachers' cognitive processes. Specifically, the study focuses on three distinct objectives:

– To examine Algerian Francophone university instructors' attitudes toward EMI;
– To know whether their use of English in academic writing is authentic or French-based;
– To explore whether EMI influences instructors' cognitive processes or it remains a tool for translation.

1.4. Research Questions

This study seeks to answer the following questions:

– What are the attitudes of Algerian Francophone university instructors toward EMI?
– To what extent does English proficiency influence their academic writing and research productivity?
– To what extent does thinking in English influence instructors' cognitive engagement, rather than merely serving as a tool for translating ideas from French?

1.5. Significance of the Study

The importance of this research lies in its ability to provide policymakers and university instructors with valuable insights into the effective and intelligent implementation of EMI in Algerian higher education. Specifically, it seeks to ensure that the cognitive abilities of both Francophone and Arabophone instructors are preserved by addressing the following key aspects:

- Resolving the linguistic and cognitive challenges associated with EMI;
- Enhancing, rather than hindering, the research quality and academic development of Algerian university instructors;
- Fostering multilingual competencies and supporting university teachers' professional development.

2. Literature Review

The shift towards English as the primary language of instruction and research in Algerian higher education marks is causing a misunderstanding among linguistic and educational scholars. While this policy change attempts to align with global academic trends, its implementation as a medium of instruction raises critical concerns regarding its effectiveness and impact on Francophone university instructors. This literature review explores the theoretical and empirical foundations surrounding language policy shifts in higher education, with a particular focus on the challenges faced by Francophone instructors adapting to English-based teaching and research.

2.1 Higher Education in Algeria: The Role of French, Arabic, and English

Before Algeria's independence in 1962, education was for a small minority of Algerians and was in French, with free Quranic schools teaching Arabic to preserve it. After independence, education became bilingual, with the French-speaking movement defending French as the language of science and the Arabic-speaking movement defending Arabic as the incubator of national identity. This conflict has continued to this day, depending on the political circumstances and the direction of the country's leadership. As for English, it was taught in middle, secondary, and university as a foreign language and was not given an important role.

In the mid-1970s, the country moved towards independence from the French curriculum and introduced the so-called 'basic school,' Arabizing education until the end of secondary school, with the Arabization of higher education to begin in 1990. However, the Francophile movement lobbied for Arabization not to include the scientific branches at the university. This is what happened.

In 2019, Tayeb Bouzid, the Minister of Higher Education, emphasized the need to introduce English as the language of research and teaching in the university—instead of French—considering it the language of science at the moment, justifying his decision by saying that teaching in English would bring foreign students to the country. The idea was resisted, and the minister left without achieving what he wanted.

In 2023, the Algerian authorities decided to adopt English as the language of instruction in universities, instead of French, starting with the new academic year in September 2023.

The move was remarkably linked to the acute political tensions in Algerian-French relations.

On July 1st, 2023, the Ministry of Higher Education sent instructions to university directors on 1 July asking them to prepare for the adoption of English as a language of instruction starting from the academic year 2023-2024.

2.2 Global Attitudes Toward English as a Medium of Instruction in Higher Education

In terms of implementing EMI, literature informs that English is integrated in force in the majority of the Western universities (Ferguson, 2007). Coleman (2006) argues that the reasons behind this English language implementation include both content and language learning, globalization, student and staff mobility, teaching and research materials, and employability. Despite this global trend toward EMI use in universities, contradicting findings were reported on the effectiveness of this use in an environment where English is considered as a foreign language. For example, Kim (2002) studied students' reactions toward EMI courses in Korea and found that though their attitude towards learning in English was positive,

he criticised the negative impact of studying in a different language, which resulted in pressure and overload. In Turkey, Sert (2008) reported that students were in favour of EMI in language learning, but they acknowledged the existence of a lack of competence in understanding the academic content. Ellili-Cherif and Alkhateeb (2015) reported that Qatari students believe that using Arabic would enable them to be more successful in their studies than if it was in English.

In Europe, several scholars have raised concerns about the "Englishisation" of higher education (Hultgren, 2014). Expanding on his theory of linguistic imperialism.

A key issue in English Medium Instruction (EMI) is its potential impact on the home language (L1), a concern not limited to post-colonial nations. Ramanathan (2014), studying Gujarat, India, argues that economic forces can devalue the vernacular if EMI is not carefully managed. Similarly, Lehikoinen (2004) finds no definitive proof of harm to L1 in Finland but urges vigilance. Hultgren (2012), exploring domain loss at the University of Copenhagen, observed heavy English borrowing in computer science but not in physics and chemistry.. In the Basque/Spanish context, Doiz, Lasagabaster, and Sierra (2013) found that 42% of local students reported low English proficiency.

2.3 Cognitive Processes in Foreign Language Academic Writing

A significant number of reputable scientific studies have examined the influence of L1 on writing content in a foreign language. For instance, scholars such as Bialystok (2009) have explored how bilingual individuals process language and cognition differently, demonstrating that thought patterns often remain rooted in the first language (L1). These findings reaffirm previous research supporting the idea that, while communicating in English, Francophone scholars formulate ideas in French before translating them into English.

Researchers have identified several elements that reveal the presence of French influence in Francophone English writing production, including, and hence demonstrating, that French is the language of thought used while writing in English.

2.3.1 Language Transfer

Language transfer, also known as cross-linguistic influence, refers to how features of a person's native language (L1) affect the learning or use of a second language (L2). In our context, it is how the features of L1 and L2 impact the use of a third language. By L1, we mean the mother tongue; by L2, French; and by L3, English.

According to Wang (2025), language transfer refers to the influence of one's mastered language (whether L1 or previously acquired L2) on the acquisition of a new target language (L2 or L3). Positive transfer facilitates learning, while negative transfer leads to interference and errors during L2 acquisition. Odlin (1989) defines language transfer as "the influence resulting from similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired." Likewise, and according to Wang & Xu (2024) language transfers, also known as cross-linguistic influence (CLI) or interlinguistic influence, refer to the influence of the commonalities and differences between the target language and other acquired languages. Jarvis and Pavlenko (2008) describe language transfer as "the influence of a person's knowledge of one language on that person's knowledge or use of another language."

These perspectives emphasize the fact that L1 transfer has always impacted the acquisition of a second or foreign language at the grammar and skills level.

2.3.2 Underproduction

Underproduction, also called avoidance, is a method L2 learners use to avoid errors when using grammar, sounds, or vocabulary they are not sure of in the L2 (Schachter, 1974). For instance, some speakers learning English may understand the passive voice concept, but they prefer using the active voice, thus ignoring the passive construction.

According to Kellerman (1992), there are three types of avoidance: (1) learners of the L2 anticipate difficulties or recognize potential errors in their construction but only have a broad idea of the target form, (2) learners know the target structure but find it too difficult to use in specific circumstances, such as discussing topics where they lack vocabulary, and (3) learners have the ability to correctly use the L2 structure but choose not to because it contradicts their linguistic or cultural norms. Recent studies have explored the phenomenon of underproduction in second language (L2) acquisition and explained that to minimize potential errors, L2 learners avoid using structures and lexis they find challenging. In the 2000s, the Unified Competition Model (UCM) provided clear insights related to the factors influencing L2 acquisition, including avoidance behaviors. The UCM suggests that adults face challenges in L2 learning due to several factors, including:

– Entrenchment of L1 Patterns: Because deeply ingrained L1 habits can interfere with adopting new second or foreign language structures.
– Reliance on L1 Transfer: Adults often apply L1 rules to L2 usage, leading to avoidance of unfamiliar constructions.

2.3.3 Overproduction

Overproduction is concerned with an L1 learner production of certain structures within the L2 with a higher frequency than native speakers. For instance, research has demonstrated that French learners tend to over-rely on presentational structures when including new referents into discourse in their L2 Italian (Benazzo, 2000) and English (Hawkins & Filipović, 2012).

A presentational structure is a word or syntactic construction that introduces an entity into discourse, attracting the addressee's attention. Typically, the introduced entity turns the theme of the subsequent discourse (Lambrecht, 1994).

For example, the construction with "there" in the following English sentence serves a presentative function: "There appeared a cat on the windowsill."

In French, a major function of voici and voilà is presentational, as seen in: "Voici le sceau de Charlemagne." (This is the seal of Charlemagne.)

These structures serve to introduce new discourse elements and highlight their importance in communication (De Cat, 2015).

2.3.4 Production Errors

Substitution occurs when an L1 speaker replaces an L2 structure or word with an equivalent from their native language. Odlin (1989) provides an example from a Swedish learner of English: Sometimes I must go bort. Here, due to cross-linguistic influence, the Swedish word bort has replaced its English equivalent away.Similarly, many pronunciation errors arise due to L1 interference. For instance, Polish EFL students often pronounce words like "think" as "fink" due to the absence of the dental fricative /θ/ in the Polish language. leading to substitution with the sound /f/ (Swan & Smith, 2001).

Calques (also called loan translations) occur when words or phrases are translated directly from the L1 into the L2 or L3. Examples include:

– English skyscraper → French gratte-ciel ("scrapes-sky") .
– Polish palec środkowy → English a finger middle instead of middle finger Underdifferentiation happens when L2 learners fail to distinguish between two different concepts that are distinct in the target language. For example: • A Polish learner of English may assume borrow and lend are synonymous, as both translate to pożyczyć in Polish .

2.3.5 Attrition

Language attrition refers to the process of language loss, which occurs in either an individual's first language (L1) or second language (L2). The Interference Hypothesis, also known as the Crosslinguistic Influence (CLI) Hypothesis, suggests that language transfer may

contribute to this attrition (Schmid & Köpke, 2019). If a speaker relocates to a country where their L2 is dominant and ceases frequent use of their L1, they may experience L1 attrition (Pavlenko, 2004). Conversely, L2 attrition may occur if the speaker returns to a place where their L1 is dominant and no longer actively uses their L2 (Schmid, 2011). Language attrition is common for individuals who learn their L1 at home but grow up speaking a different dominant popular language. For instance, a Spanish-speaking person in an English-speaking country may experience Spanish attrition due to the limited opportunities to use their language out-of-doors (Montrul, 2008).

Studies have also shown that language attrition in the first language often affects grammatical structures and vocabulary retrieval (Polinsky, 2018). Hence, understanding attrition is crucial when studying cross-linguistic influence, as it demonstrates the impact of language dominance in bilingual or multilingual contexts. Whether due to migration or lack of life experience, language attrition highlights how multiple languages   in language contact gradually shape an individual's linguistic knowledge and skills.

The concept of language transfer plays a crucial role in second language (L2) acquisition, impacting learners' linguistic performance. In this respect, cross-linguistic influence on learning manifests itself in different forms:

– Underproduction, also known as avoidance, occurs when learners deliberately avoid using unfamiliar L2 structures due to L1 interference or perceived linguistic difficulties;
– Overproduction leads to an over-reliance on certain structures, and, consequently, learners will overuse the presentational forms when introducing discourse items;
– Production errors occur when learners substitute, copy, or misapply L1 structures in their L2, often leading to systematic deviations from native norms;
– Language attrition relates to the active nature of bilingualism or multilingualism, where language loss is caused by the lack of exposure to L1 or L2.

These aspects show that language learning is a complex interaction between previously acquired linguistic knowledge and new linguistic input. They provide a better understanding of the cognitive and social factors that influence second language acquisition.

3. Methodology

3.1 Research Design

This paper is both descriptive and exploratory in form and contents:

– It is descriptive, as it seeks to outline teachers' language practices in academic settings such as using English as a medium of instructions or a tool to write research papers.
– It is exploratory, as it aims to understand Francophone teachers' attitudes toward the implementation of English as a medium of instruction for all majors

The study employs a mixed-methods approach, combining quantitative data collection from a survey along with qualitative insights derived from the analysis of participants' writing productions. Additionally, AI is used as a tool to analyse the language of thought employed by participants while writing in English."

The goal is (1) to unveil the Francophone teachers' attitudes toward the implementation of English as a medium of instruction, and (2) to examine whether university teachers with a Francophone background use English as a direct medium of thought and research or simply rely on translation from French into English.

3.2 Participants

Participants include 50 university instructors from diverse majors who have received Francophone training and currently teach or conduct research using English language.

3.3 Procedures
3.3.1 Data Collection Methods
- Text analysis for linguistic patterns, and linguistic analysis to explore Francophone teachers' cognitive tendencies in their English written research (e.g., structural similarities to French, interference and unnatural phrasing). AI-assisted writing features (e.g., highly structured, formalized patterns) were also analysed. The authors investigated 10 academic articles written by Francophone teachers from different specialties; and different Algerian universities;
- Survey (Self-Reported Data): It is a structured questionnaire aimed at collecting data on (a) Francophone teachers' attitudes towards English as a medium of instruction and research, (b) the impact of English on Francophone teachers' cognitive language use, and (c) Francophone teachers' cognitive tendencies in their English-written research. The questionnaire included Likert-scale, multiple-choice, and open-ended questions.

3.3.2 Data Analysis
- Qualitative data from the participants' written productions were examined implementing AI linguistic and thematic analysis, focusing on translation reliance, AI use, syntax and English fluency;
- Quantitative data from the survey were analysed using descriptive statistics SPSS 28 software to identify trends in English language use and francophone teachers' attitudes towards EMI.

4. Results

This section consists of a detailed analysis of data collected from 10 authentic academic texts produced by Francophone teachers, and a questionnaire completed by 50 Francophone teachers from different specialties and universities.

4.1 AI Analysis Summary of Francophone Teachers' Use of English in Academic Writing

Note: The following text analysis is conducted by AI, with results presented exactly as identified to ensure scientific accuracy. In this case, the AI does not create ideas but serves as a data collection tool, analysing the text and objectively identifying findings. Hence, we must keep AI readings as they are.

- **Text N°1, written by an English language instructor. Source: timsal n tamazight**

Text Analysis - AI reading: "The text contains multiple expressions that closely mirror French syntax and phrasing, particularly in verb usage, sentence structure, and word order. These indicate that the author is likely thinking in French and translating ideas directly into English."

Example of French Interference Identified by AI: "Although considerable advances have been realized since the introduction of Tamazight in the Algerian educational system…"

- French *language influence:* "Des avancées considérables ont été réalisées" is influencing "considerable advances have been realized," which is not the usual English phrasing.
- Natural *English alternative:* "Although significant progress has been made since Tamazight was introduced into the Algerian education system…"
- **Text N° 2, written by an English language instructor. Source: Annales des lettres et des langues, University of Msila.**

Text Analysis - AI reading: "The text shows clear traces of French-influenced syntax, direct translations of French expressions, and unnatural phrasing that suggests the author's primary thinking language is French rather than English. These influences are particularly evident in word order, verb omission, unnecessary use of prepositions, and literal translations of academic phrasing from French."

Example of French Interference Identified by AI: "Existing research has proven a positive role of the teachers and the successful implementation of ICT in the classrooms."

- French *language influence*: The phrase "a prouvé un rôle positif des enseignants" directly influences the unnatural "proven a positive role of the teachers."
- Natural *English alternative:* "Existing research has demonstrated the positive role of teachers in the successful implementation of ICT in classrooms."

– **Text Nº 3, written by an English language instructor. Source: Language Practices Volume: 14/ Number: 02 ASJP**

Text Analysis - AI reading: The text contains several French-influenced expressions due to direct translations or structural similarities. These include unnatural phrasing, awkward word order, and literal translations from French

Example of French Interference Identified by AI: *"is being asked since years ago"* (from *"est posée depuis des années"*)

- French *language influence*: The phrase "est posée depuis des années" directly influences the unnatural "is being asked since years ago."
- Natural *English alternative:* "Has been repeatedly posed over the years."

– **Text Nº 4, written by an instructor at electrical and electronics institute. Source: https://ieeexplore.ieee.org/**

Text Analysis - AI reading: The text contains several French-influenced expressions due to direct translations or structural similarities with French. Here are the key French-influenced expressions and their likely sources.

Example of French Interference Identified by AI: "The proposed approach considers jointly functional, static and dynamic aspects of RTMAS."

- French *language influence:* The phrase *"considère conjointement les aspects fonctionnels, statiques et dynamiques"* directly influences the unnatural "The proposed approach considers jointly functional, static and dynamic aspects of RTMAS."
- Natural *English alternative:* "The proposed approach jointly considers functional, static, and dynamic aspects of RTMAS."

– **Text Nº 5, written by an instructor of electronics. Source: International Journal of Electrical Power & Energy Systems**

Text Analysis - AI reading: This text contains several expressions and structures that reflect direct translations from French or French-influenced academic writing patterns. These include:

- **Word order issues** (e.g., *"a correct and fast estimation"* instead of *"an accurate and fast estimation"*)
- **Prepositional errors** (*"applied for"* instead of *"applied to"*)
- **Formal and redundant phrasing** (*"present many disadvantages"* instead of *"have many disadvantages"*)
- **Pluralization errors** (*"equipments"* instead of *"equipment"*)
- **Use of adjectives without hyphens** (*"three phase SAPF"* instead of *"three-phase SAPF"*)

Example of French Interference Identified by AI: ""an interesting alternative…"

- French *language influence:* The phrase *"une alternative intéressante"* is commonly used in French academic writing, but "interesting" in English does not always fit this context.
- Natural *English alternative:* A better alternative would be *"a viable alternative"* or *"a promising alternative."*

- **Text Nº 6, written by an instructor of medical sciences. Source: Journal of Cancer Research & Therapy**

Text Analysis - AI reading: The analysed text exhibits multiple instances of French-influenced structures, particularly in word order, phrase construction, and direct translations of French expressions. These include unnatural prepositional usage (*"a difficulty in access to cancer care"*), awkward verb constructions (*"Cancer Registry of Setif is being a source of information"*), and overly formal phrasing reminiscent of French academic style (*"corresponding surveillance"*). Such patterns suggest that the author's cognitive processing remains rooted in French, with English serving primarily as a medium of translation rather than a naturally employed language. This phenomenon reflects a broader trend in francophone academic writing, where English texts often retain the structural imprints of the author's primary language, affecting fluency and readability.

Example of French Interference Identified by AI: "Estimation of cancer incidence in Algeria and survival rates are very important for surveillance, control, and planning of care."

- French *language influence:* L'estimation de l'incidence du cancer en Algérie et des taux de survie est très importante pour la surveillance, le contrôle et la planification des soins.
- Natural *English alternative:* More natural English: *Estimating cancer incidence and survival rates in Algeria is crucial for monitoring, controlling, and planning care.*

- **Text Nº 7, written by an instructor of Medical sciences. Source: Revue Santé et Innovations**

Text Analysis - AI reading: The text displays multiple instances of French-influenced phrasing, particularly in sentence structure, word order, and direct translation of French academic expressions. These linguistic traces suggest that the author's primary cognitive language is French, with English serving as a secondary means of expression. This pattern is characteristic of francophone academic writing, where English research papers often retain structural elements from French, affecting fluency and readability.

Example of French Interference Identified by AI: "Regarding the presence of potentially harmful substances, 75.43% of respondents are aware that canned foods may contain harmful elements to health."

- French *language influence:* This phrasing resembles the French structure *"Concernant la présence de substances potentiellement nocives, 75,43% des répondants sont conscients que les aliments en conserve peuvent contenir des éléments nuisibles à la santé."*
- Natural *English alternative:* "Concerning harmful substances, 75.43% of respondents recognize that canned foods may contain health-threatening components."

- **Text Nº 8, written by an instructor at the *faculty of human and social sciences.* Source: Journal of Positive School Psychology**

Text Analysis - AI reading: The text exhibits French-influenced sentence structures and word choices, resulting in direct translations that sound less natural in English. These structures suggest that the author's cognitive processing in French influences their English writing, a pattern commonly observed in francophone academic research.

Example of French Interference Identified by AI: "This is true at various levels, including its diagnostic characteristics, epidemiology, causal hypotheses, as well as approaches to rehabilitation and treatment."

- French *language influence :* The structure mirrors *"Ceci est vrai à plusieurs niveaux, y compris ses caractéristiques diagnostiques, son épidémiologie, ses hypothèses causales, ainsi que ses approches de réhabilitation et de traitement."*
- Natural *English alternative:* This applies to various aspects, including diagnosis, epidemiology, causal theories, and treatment approaches."

- **Text Nº 9, written by an instructor at Institute for the Management of Urban Techniques. Source: https://www.researchgate.net/publication**

Text Analysis - AI reading: The text exhibits French-influenced sentence structures and word choices, reflecting direct translation tendencies. For example, "the area had been practiced by aboriginal populations" mirrors the French *"la région était pratiquée"*, where "practiced" is an unnatural choice in English. Similarly, "structural permanencies" follows the French *"permanences structurelles"*, though "enduring structures" would be clearer. These structures suggest that the author's cognitive processing in French influences their English writing, which is common in francophone academic publications.

Example of French Interference Identified by AI: "The area had been practiced by aboriginal populations for thousands of years"

- French *language influence :* This follows the structure of *"La région était pratiquée par les populations autochtones depuis des milliers d'années.*
- Natural *English alternative:* In English, "practiced" is not typically used to describe land use. A more natural phrase would be "inhabited" or "used." "The area had been inhabited by Indigenous populations for thousands of years."

- **Text Nº 10, written by an instructor of Philosophy. Source: International journal of early childhood Special Education**

Text Analysis - AI reading: The text uses long, complex sentences with multiple clauses, a structure characteristic of French academic writing but less common in English. It employs direct translations of French philosophical expressions, particularly those influenced by Rousseau. It also reflects French rhetorical style.

Example of French Interference Identified by AI: "Through this research paper in the philosophy of education, I try to clarify the close link between the intellectual and scientific revolution with education as the pivotal link of the Enlightenment."

- French *language influence:* The phrase *"clarify the close link"* is a direct translation from the French *"clarifier le lien étroit"*.
- Natural *English alternative:* In English, it would be more natural to say *"examine the strong connection"* or *"explore the close relationship"*.

- **Text Nº 11, written by an instructor of science and technology. Source: Soil Mechanics and Foundation Engineering**

Text Analysis - AI reading: The original text contains several French-influenced structures that affect clarity and fluency in English. These include article misuse ("the reliable soil resistance"), literal translations of expressions ("more important than" instead of "stronger than"), and unnatural phrasing ("interaction phenomenon" instead of "interaction effect"). Additionally, word order issues and redundant prepositions ("on the pile slenderness and on the spacing") were identified as remnants of French syntax

Example of French Interference Identified by AI: "determine that the foundation is capable of sustaining working loads with sufficient safety"

- French *influence :* "déterminer que la fondation est capable de supporter les charges de travail avec une sécurité suffisante"
- Natural *English alternative:* "assess whether the foundation can safely sustain working loads" (avoiding literal translation of "avec une sécurité suffisante").

4.2 Questionnaire Data Analysis of Francophone Teachers' perspectives and Attitudes

To answer the research questions, we present below the results of the questionnaire analysis. We first present the profile of the respondents in the following table:

Table 1.

Respondents Academic Profiles

Item	Frequency	Percentage%
Architecture and urbanism	21	42.0
Biology sciences	10	20.0
Economics and marketing	5	10.0
Mathemathics	1	2.0
Engineering	3	6.0
Literature and linguistics	2	4.0
Computer science	3	6.0
Medicine and pharmacy	4	8.0
fundamental sciences	1	2.0
Total	50	100.0

Table 1 reveals a different range of academic disciplines among the participants, with 42.0% from Architecture and Urbanism, making it the most represented discipline in the study. Biology Sciences accounts for 20.0% of respondents. Economics and marketing represent 10.0%, engineering and computer science both account for 6.0% respectively, and medicine and pharmacy represent 8.0%. Less represented fields include Mathematics (2.0%), Literature and Linguistics (4.0%), and Fundamental Sciences (2.0%).

Table 2.

Language Used in Teaching

Item	Frequency	Percentage%
French	36	72.0
English	7	14.0
Other	7	14.0
Total	50	100.0

The examination of the dominant language used in teaching among the respondents revealed that 72% teach in French, while the remaining percentage is shared equally between English and Arabic.

Table 3.

Attitudes Towards English Use in Teaching and Research

Item	Frequency	Percentage%
Never	6	12.0
Rarely	8	16.0
Sometimes	15	30.0
Often	14	28.0
Always	7	14.0
Total	50	100.0

To measure the extent to which English is integrated into teaching or research practice among the study sample, the results indicate that 30% use it "sometimes," 28% use it "often," and 14% use it "always." Conversely, 16% use English "rarely," while 12% never use it in their teaching or research.

Table 4.

Attitudes towards English as a Medium of Instruction and Research

Item	Frequency	Percentage%
Rather negative	7	14.0
Neutral	3	6.0
Rather positive	24	48.0
Very positive	16	32.0
Total	50	100.0

While examining the attitudes of the respondents towards English in teaching and research, results reveal that the majority hold rather to very positive attitudes, representing respectively 48.0% and 32.0%. Those who showed a neutral position represent 6.0%, while those who have a rather negative attitude represent 14.0%.

Table 5.

Experience in Writing Academic Articles in English

Item	Frequency	Percentage%
No	11	22.0
Yes	39	78.0
Total	50	100.0

The majority of respondents (78%) reported having written an academic article in English. This high percentage suggests that English is widely used as a medium of academic communication among Francophone scholars. This is likely due to its status as the dominant language in international research and publishing. Among those who have written academic articles in English, the data reveal diverse approaches to the writing process, as shown in the next table:

Table 6.

Approaches to Writing Academic Articles in English

Item	Frequency	Percentage%
Write directly in English	13	26.0
Write first in French, then translate into English	15	30.0
Use a mixture of both (some sections in English, others in French)	12	24.0
Other	10	20.0
Total	50	100.0

Among the participants, 26% mentioned that they use English directly to write their scientific articles. Respondents who use French first and then translate into English represent 30.0%, which confirms the results obtained during the aforementioned textual analysis. Those who use a mixture of the two languages (English-French) also represent 24.0%. The rest of the respondents indicated that they use a mixture of Arabic and English. These results confirm that the interference of French comes first when French speakers write their scientific articles in English.

Table 7.
Translation Practices among the Respondents

Item	Frequency	Percentage%	Percentage of cases
Manual Translation (auto-translation)	12	18.2%	25.5%
Online translation tools (For example DeepL, Google Translation, etc.)	41	62.1%	87.2%
Assistance of a colleague or a professional translator	11	16.7%	23.4%
Other	2	3.0%	4.3%
Total	66	100.0%	140.4%

The results in Table 7 indicate a variety in the use of translation tools. The majority of respondents indicated that they use online translation tools, such as DeepL, Google Translate, etc., representing 87.2% of the sample. Manual translation and assistance from a colleague or a professional translator represent 23.4%, respectively. Those who indicated the use of other translation tools represent 4.3%, having mentioned the use of AI. These results indicate the variety of strategies employed by French-speaking researchers to overcome challenges when translating academic content into English. A strong preference for digital tools was observed.

Table 8.
Cognitive Preferences for French in Idea Generation

Item	Frequency	Percentage%
Not at all	6	12.0
To a small extent	9	18.0
To a moderate extent	13	26.0
To a great extent	22	44.0
Total	50	100.0

The results shown in Table 8 indicate that respondents have a moderate to strong preference for producing ideas in French rather than in English, representing 26.0% and 44.0%, respectively. This preference indicates that French remains the most dominant language in the cognitive process when writing in English. The rest of the sample, representing 12.0% and 18.0%, respectively, indicated that they have no or little preference for French when writing texts in English.

Table 9.
Language of Thought in Academic Writing.

Item	Frequency	Percentage%
French	22	44.0
Native language	8	16.0
English	6	12.0
Mix between French and mother tongue	12	24.0
Other	2	4.0
Total	50	100.0

The results displayed in Table 9 indicate that 44.0% of the participants think first in French when writing academic papers in English. Those who use a mixture of French and their mother tongue represent 24.0% of the sample. These results confirm the predominance

of French in the cognitive process of the respondents. Those who think in their mother tongue first represent 16.0%, followed by 12.0% of those who think in English first.

Table 10.

Translation Practices in Academic Writing

Item	Frequency	Percentage%
Construct sentences directly in English	11	22.0
Think first in French, then translate into English	17	34.0
Think first in your native language, then translate into English	4	8.0
Use a mix of both methods, depending on the complexity of the subject	18	36.0
Total	50	100.0

In response to the question about the language used while preparing presentations in English, the results as shown in Table 10 indicate that 42.0% of participants prepare their presentations directly in English. This percentage is followed by 32.0%, who mentioned using a combination of English and French. Those who prepare entirely in French and then translate into English represent 24.0%.

Table 11.

Language Use in the Preparation of English Presentations

Item	Frequency	Percentage%
Prepare entirely in French, then translate to English	12	24.0
Prepare directly in Englich	21	42.0
Use a combination of both	16	32.0
other	1	2.0
Total	50	100.0

In response to the question about the language used while preparing presentations in English, the results as shown in Table 11 indicate that 42.0% of participants prepare their presentations directly in English. This percentage is followed by 32.0% who mentioned using a combination of English and French. Those who prepare entirely in French and then translate into English represent 24.0%.

5. Discussion

The aim of this study was to examine the attitudes and perceptions of Algerian Francophone university teachers towards the transition to English as a medium of instruction, as well as the resulting cognitive implications on their academic writings. The results of the questionnaire directed to 50 respondents revealed that the majority 80% have a positive attitude towards EMI. On the other hand, a percentage of 14% expressed resistance due to linguistic and cognitive challenges. In addition, the results confirm that English is not the primary language to generate ideas for most participants. In this case, 44% of participants indicated formulating ideas in French before translating them into English, and 24% use a combination of French and their mother tongue. Along with this, textual analysis of eleven research papers from various disciplines proved to contain high levels of French interference in syntax, vocabulary, and overall writing structure, thus proving the point that English is employed as a translation tool rather than as an authentic language of thought.

The findings support international studies on the use of EMI in non-English-speaking countries. Similar to studies in Korea (Kim, 2002) and Turkey (Sert, 2008), Algerian Francophone instructors understand the advantages of EMI in internationalization and exposure to academics but face cognitive and linguistic adaptation issues. Over-reliance on translation tools (87.2% of the sample) and the continued French predominance in the thinking process are indicators of the issues raised by Phillipson (2009) on linguistic imperialism and loss of local academic heritage. The study confirms Hultgren's (2012) and

Lehikoinen's (2004) studies on loss of domain in that the transition to EMI does not translate to immediate cognitive use of English but rather supports the use of translation-based thinking.

6. Conclusion

The extensive presence of French-influenced English in this article is a common trait in academic writing produced by Francophone instructors. This demonstrates that their cognitive processing remains tied to the French language. English language is serving merely as a medium of translation rather than an autonomous linguistic system of thought. Consequently, the structure, phrasing, and logical progression of ideas in such research papers often reflect the conventions of French language rather than those of natural academic English.

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Appendix I
Survey Questions

Section 1 : General information	
What is you major ?	……………………………..
How long have you been teaching this subject?	○ 1 to 3 years ○ 4 to 6 years ○ 7 to 10 years ○ More than 10 years
What language do you mainly use to teach this subject?	○ French ○ English ○ Other ………….
What is your attitude towards the use of English as a language of teaching and research?	○ Very negative ○ Rather negative ○ Neutral ○ Rather positive ○ Very positive
Section 2: Using English in Research and Writing	
Have you written an academic article in English before?	○ Yes ○ No
If yes, when writing an academic paper in English, you	○ Write directly in English ○ Write first in French, then translate into English ○ Use a mixture of both (some sections in English, others in French) ○ Other………………
If you use translation, you rely on: (Select all that apply)	Manual Translation (auto-translation) Online translation tools (For example DeepL, Google Translation, etc.) Assistance of a colleague or a professional translator Other…………………
To what extent do you feel more competent in generating ideas in French than in English?	○ Not at all ○ To a small extent ○ To a moderate extent ○ To a great extent
When formulating academic ideas, do you first think in	○ French ○ Native language ○ English ○ Mix between French and mother tongue ○ Other…………….
When you write an academic text in English, you	○ Construct sentences directly in English ○ Think first in French, then translate into English ○ Think first in your native language, then translate into English ○ Use a mix of both methods, depending on the complexity of the subject
When preparing an academic presentation in English, you	○ Prepare entirely in French, then translate to English ○ Prepare directly in English ○ Use a combination of both ○ Other…………………