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LEARNING AND TEACHING IN TRANSITION

Fostering the English language as medium of instruction in the Algerian universities

Case of study: first year science educators of Belhadj Bouchaib University

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DOUAA'S DEDICATION:

I dedicate this work to the light that guides me through the night ,to the love that makes the darkness bright; my mother medjahed Fatima .and to my father Rarmoul bouhadjar Mohamed whose footsteps I follow your unconditional love ,encouragement ,and understanding give me strength for nurturing my dreams and providing me with the tools to pursue them .

To my siblings bouhadjar, malak, zoulikha, walid and ibtissam, my partners in play ,the keepers of my dreams ,secretes and thoughts .this thesis is dedicated to you .in admiration of the complementary roles each of you plays in my life .

To my beloved cousins, the kindest souls I have ever known, we have spent every summer day and winter chill together sharing unforgettable memories.

To the memory of my grandparents, though they are gone from sight ,yet ever present in my heart.

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To my Aunt Medjahed Asma:

My best friend and my constant source of support. Thank you for everything

And lastly my twin sisters this thesis is offered in homage to their brief but profound impact on my life, I hope I could you proud.

By the end, Alhamdulillah for competing what I began years ago, I wish I had made a positive impact that will live on.

CHAIMAA'S DEDICATION

This thesis is not just an academic work but also a reflection of the profound impact each person has had on my life .with deepest gratitude and love I dedicate this work to my beautiful family and friends.

With all love and appreciation to my parents:

Mom, my best friend and the strongest woman I know, you are my role model and my biggest inspiration .your countless sacrifices, protection, love and warmth will always be appreciated .the words can never describe how much I love you .thank you so much for everything.

Dad whom I received my name from, I will always carry it with pride. My number one supporter and my superhero, thank you dad for your hard work and sacrifices. You will forever be the man with most beautiful blue eyes .thank you for everything you have given me.

To my siblings:

Nabil ,your positivity and humor have lifted my spirits many times .you were always been the one who boost my confidence and support me through everything , thank you for being the best big brother . Abdelhak, you've been my partner in crime, always by my side with a smile and a word of encouragement, because of you I learned and loved the English language, and the one who always encouraged me to be the better version of myself. My dear Youcef, my little baby who's grown so much ,you are more than a brother; you are my inspiration and my heart's greatest treasure. Amina, my little sister your presence brings joy and warmth to every moment.

To my biggest inspiration:

My grandpa, though you're no longer with us, your love and wisdom continues to inspire me every day, you will always be in my heart. To my beautiful Grandma, your strength sustains our family through every challenge. Thank you for your love and presence.

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ABSTRACT

This present study aims to investigate the transition from French to English as the language of instruction in Algerian universities particularly focusing on the scientific field; the research explores the consequences, and difficulties of this conflicted situation, What is more, the study investigates the emergence of English as a competing language of French, and explores the potential consequences it can have on the higher education. This research aims to enhance the existing knowledge on language policy and science pedagogy in Algeria by investigating the experiences of science educators in language training. It seeks to provide fresh perspectives that can guide the development of more effective language-training programs and contribute to the creation of a skilled and competitive job market in the increasingly globalized scientific and academic realm. Focusing on the research methodology, outlining the research design, and the primary research tools, Data was collected through structured interviews with English teachers who trained science educators, surveys of these educators, and classroom observations; in addition to the mixed methods applied. It addresses the challenges faced by educators in terms of in-service training during this linguistic shift .The analysis of the research tools provides insights into the impact of the transition on teaching and learning. The results indicate the intensity of the critical need for extended adaptation periods and comprehensive training, and offers recommendations to enhance the process, suggesting that the transition has been too rapid, lacking the necessary time and consideration for effective implementation. The thesis concludes that a successful shift to English requires careful planning, sufficient resources, and ongoing support to fully realize its potential benefits for higher education in Algeria.

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List of acronyms:

EFL: English as foreign language

ESP: English for specific purposes

EMI: English as a medium of instruction

L1:   License one

MCB: Maître de conférences

MCA :   Maître de conférences

JR.LECT : junior lecturer

SR.LECT: senior lecturer

ESL: English as second language

MMR: mixed methods research

RPF: Rwanda patriotic front

GENERAL INTRODUCTION

General introduction:

The transition from French to English in Algerian universities specifically in scientific fields appears to be a crucial and inevitable step, as proposed by the linguist Ulrich Ammon" The adoption of English in scientific fields is crucial for enabling researchers to engage with the global scientific community and access the latest research findings." Ammon, U. (2010). Despite the significant changes in the language environment with English now predominating over French as the medium of instruction, this shift is not merely an adjustment in schooling; it is the result of a complex interaction between historical, social, and cultural forces. It also affects Algeria's globalization initiatives, cultural identity, and educational system. The purpose of this research is to investigate the dynamics underlying this linguistic transition by looking at the reasons for, difficulties encountered, and effects of the switch from French to English in Algerian higher education .this linguistic leap bears significance not only for educational practices but also for broader societal dynamics, reflecting a deliberate move aligning with global academic standards and fostering international collaborations

The initial chapter sheds light on the broader historical and linguistic context of Algeria, providing an overview of Algeria's colonial history, the resulting language challenges, language policies, as suggested" Language policies are not merely about communication; they are intimately tied to identity, power, and historical context." Shohamy, E. (2006) the development of a multilingual society, explores the global status of English as a language and the implications of the government's decision to incorporate it into higher education, drawing on comparative studies from other countries. The second chapter delves into the research methodology employed to examine the transition from French to English as the primary language of instruction within Algerian university settings. Adopting a multifaceted approach, the study integrates structured interviews, survey and direct classroom observations to shed light on the obstacles encountered by educators throughout this transformative period. As suggested: "Successful language transitions in education require strategic planning, encompassing teacher training, curriculum changes, and continuous support to address the challenges faced by educators." The data gathering phase was designed to incorporate information from English instructors tasked with training science educators, alongside distributing questionnaire to these educators and documenting their classroom Interactions. The

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findings reveal a rushed implementation of the transition, lacking sufficient preparation and foresight to ensure a smooth execution.

In the concluding chapter, a detailed analysis is presented, highlighting the profound effects this linguistic change on both pedagogical strategies and student learning experiences. The study advocates for extended adjustment periods coupled with comprehensive training initiatives to mitigate the challenges associated with this significant shift.

It also proposes actionable recommendations aimed at enhancing the transition process, stressing the critical role of strategic planning, provision of necessary resources, and sustained support mechanisms. Ultimately, the thesis posits that the successful adoption of English as the instructional language hinges on the integration of these key components, thereby maximizing the educational advantages for Algerian higher education institutions.

In addition "Teacher training is essential in language policy reforms to ensure that educators are equipped with the necessary skills and resources to effectively implement the new medium of instruction." Richards, J. C., & Rodgers, T. S. (2014)

The purpose of this thesis is to examine the transition from French to English as the medium of instruction in Algerian universities, with a particular focus on scientific fields. As individuals who are learning English ourselves, we acknowledge the crucial role of English proficiency in facilitating effective scientific communication, learning, and teaching. This linguistic shift presents an exceptional opportunity to delve into its implications. The primary objective of this study is to evaluate the impact of transitioning the educational language from French to English in Algerian universities. Specifically, the research aims to explore the changes in teachers' attitudes and perspectives towards language instruction after participating in a dedicated training program, as well as to comprehend the factors that contribute to these shifts. By doing so, this study will make a valuable contribution to the ongoing discourse surrounding language policy and educational strategies within the Algerian educational system

Therefore, this study seeks to address the following research questions:

❖ To what extent do teacher's attitudes and beliefs about language instruction change after participating in the in-service training program?

❖ After completing the in service training program, to what degree do teachers demonstrate increased support for English language instruction?

Moreover and to reach reliable answers to the questions, the following hypotheses are suggested:

❖ Educators who sustained resources after their initial training gained effective integration into their classroom.

❖ The lack of teachers' academic exposure to the English language and the insufficiency of motivation may occur due to obstacles in the classroom

By investigating these research questions and testing these hypotheses, this study aims to provide valuable insights into the ongoing linguistic shift in Algerian higher education and its implications for policy formation, educational practices, and social dynamics.

CHAPTER ONE: LITERATURE REVIEW

1.1. Introduction:

1.2. Linguistic affiliation:

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1.1. INTRODUCTION:

Throughout Algeria's history, language especially language in education has been a highly contested, sensitive, and complex issue that has been complicated by politics and enveloping ideologies'' (Benrabah, 2007: 226)

Algeria's multilingual society has been shaped by a combination of historical, geographical, and political factors, each contributing in its own distinct way to the linguistic landscape of the country. While the French language has exerted a significant influence across various domains, English has emerged as the global language of civilization and science, gradually overshadowing French and marginalizing its role "Language policies are not simply about communication; they are deeply embedded in the historical, cultural, and political fabric of a society." (Shohamy, 2006. In recent years, the Algerian Ministry of Higher Education has embarked on a transformative journey that extends beyond the confines of classrooms, marked by a substantial shift in the language of instruction from French to English. This transition carries profound implications for the linguistic environment within the Algerian education system and the pedagogical methodologies employed.

The decision made by Algerian universities to transition from French to English as the medium of instruction is a multifaceted process driven by global educational trends, economic considerations, and the aspiration to enhance international competitiveness, "English has become the global language of communication, the dominant medium of science, technology, and academia, reflecting its central role in globalization. (Crystal, 2003). This move is part of a broader endeavor to adapt to an increasingly interconnected and globalized world, where English often serves as the lingua franca. Higher education institutions firmly believe that this shift will facilitate future collaborations with Western countries and open up new academic avenues. However, the rapid implementation of English in Algerian universities, particularly in scientific fields, highlights the predominance of English in scientific communication. This enables researchers to participate in a global discourse and access the latest developments in their fields (Swales, J. M., 1990)." Posing a significant undertaking that necessitates careful study and effective management. It is important to acknowledge that Algeria's linguistic ties to French are deeply rooted and more pronounced than its connections to any English-speaking country, presenting unique challenges in this transition.

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In conclusion, this introductory chapter serves as a compass for our exploration into the shift from French to English in Algerian universities. By examining the historical context, we can emphasize the significance of this linguistic transition for a shared understanding, and outline the governmental decisions that have played an important role in shaping language policies within Algerian universities. Additionally, we will explore the in-service training initiatives for science educators, examining how they contribute to unpack the challenges, benefits, and broader implications of this shift, providing insights and its impact on students, faculty, and finally diving into similar experience in other countries.

On this journey, the intention is not to only analyze the shift itself but also to offer a holistic understanding of the complex factors influencing language choices and their consequences within the academic community.

1.2. LINGUISTIC AFFILIATION:

1.2.1. CLONIAL ERA DYNAMICS: French influence on language and education:

The original language of Algeria was Berber, a language with various dialects dispersed throughout the country. This linguistic diversity reflects the rich cultural tapestry of the region. Early in its history, Arabic made its way to Algeria, accompanied by Arab culture and the Islamic religion, shaping the cultural and linguistic landscape. Then the French colonization of Algeria, which began in 1830, it was explicitly characterized by a range of policies aimed at asserting control and influencing many aspects of the Algerian society; Such as supporting the use of French in public life. The government and education were put into place under the colonial governance. French replaced Arabic as the primary language of instruction in schools and administration, as it underwent a process of being surpassed and marginalized in official institutions; as well Cultural Suppression where French authorities discouraged local, cultural Algerian practices that did not align with their values.

During the colonial period, when the French arrived, several attempts were made not only to diminish native culture but also to demolish the Arabic language and replace it by the language of the colonizer and one of the methods employed was the imposition of the French language on the local population. As the situation became complex and notable that the experiences as well as perspectives were varied and clearly divided among individuals and

communities ,some according to ''Malika Rebai Maamri(2009) argues that ''the former viewed French as the language of modernity, science and technology…. On the other hand, they saw the French as the language of the enemy, p 6.'' And others had alternative viewpoints on the matter, and while it's being gradually phased out, French still retains importance in certain domains, and it continues to be coercive persuasion by a group of people know as the Francophone who demanded the preservation of the French language as the official language, as stated: ''the community of francophone in Algeria, An alliance formed that called for the maintenance of French as the basic language of the state alongside Arabic and Berber. The argument was made that French is the language of advancement '' (Malika Rebai Maamri, 2009, p8). Particularly scientific and technical fields ,Now It is taught as a second language in schools, showcasing the long lasting impact of the colonial era on Algeria's linguistic landscape. Algerians sought to reclaim their linguistic and cultural heritage, challenging the French colonization.

Despite of the historical context leading up to 1962, Algeria successfully achieved its independence from colonial rule during that pivotal period; Arabic was officially declared the language of the nation. As language being one of the vital elements that constitutes the society ,it was important to clarify for the world ,and the Algerian people .In contemporary Arabic and Berber are the predominant languages spoken in day-to-day life, reflecting the cultural and historical Impact of the population.

Finally, after looking at Algeria's colonial past and the effects of French influence, the focus now shifts to the language evolution. Algeria stands as a testament to linguistic diversity, shaped by complex historical intricacies. The post-independence era witnessed a development in language policies redressing historical injustice, and promoting cultural identity.

1.2.2. Linguistic Hegemony: Exploring the Global Supremacy of English in Algeria:

Firstly ,The Crossroad of various linguistic transformations have sculpted modern, mul

tilingual Algerian society , including The delicate change of language in the academic institutions reflecting the country's colonial past ,The French authorities implemented policies that promoted French as the language of administration, education, and culture. Additionally, it was associated with social and economic privileges, creating a linguistic hierarchy that

significantly influenced the Algerian society in various aspects and forced this linguistic dominance that persisted even after Algeria gained independence in 1962, contributing to the continued use of French in various sectors, including the field of education. The language of the colonizer had long been the medium of instruction, and schools were structured to align with the French educational system. This linguistic imposition had a profound impact on higher education as well, with French being used in universities.

The coexistence of Arabic, Berber, and French creates a distinctive communication weave, reflecting the diverse cultural fabric of the nation. The multilingual landscape contributes in understanding the Algerian identity, where language becomes a dynamic expression of historical narratives, cultural resilience, and the continuous pursuit for linguistic equity.

In conclusion, Algeria's linguistic journey encompasses a historical interplay of Berber, Arabic, and French influences. The persistence of Arabic and Berber in daily life, coupled with the enduring legacy of French, underscores the complexity of Algeria's linguistic identity. The emergence of English as a contender further emphasizes the dynamic nature of linguistic affiliations in a globalized world. Understanding this historical context is crucial for examining the shift from French to English in Algerian universities, as it provides insight into the deeply ingrained influence of the French language and the challenges associated with transitioning to another language.

1.3. ALGERIA AS MULTILINGUAL SOCIETY:

Algeria is recognized as a multilingual society, with three main language groups coexisting within its population: Arabophones, Berberophones, and Francophones. "Language selection in multilingual societies serves as a connection between historical context, social structure, and a composite of identities" (Reilly 2019, p33). The Arabic-speaking community comprises approximately 70–75% of the total population, Blommaertet al. (2005) suggest "that language is an ideological object that is used alongside social and cultural interests" while multilingualism has been actively promoted through educational policies and language developments. This promotion includes encouraging the learning of foreign languages such as French and English, which are seen as essential for international and local diplomatic and business communication.

Arabic is the official language of the nation, and it is printed in all official papers. But because Algeria is a bilingual nation, spoken languages like Berber and French are equally important in education and social interactions, among other spheres of life. Numerous languages are spoken and understood in an exceptional sociolinguistic situation that has developed as a result of the integration of different languages into daily life.

In summary, Algeria's multilingual society is an illustration of the country's heterogeneous linguistic atmosphere, where Arabic, French, and Berber are essential to the nation's identity and social system.

The main languages in Algeria are Algerian Arabic and Berber. Algerian Arabic is spoken by about 90% of Algerians, while Berber is spoken by approximately 10%. Despite the high level of linguistic homogeneity, Algeria has been actively promoting multilingualism. Here's how:

1.3.1. Official Language Policy:

Algeria has acknowledged Arabic as its legitimate national language since 1990. Nonetheless, in recognition of the nation's variation, Berber was designated as a national language in 2002 and then elevated to the rank of an official language in 2016. The nation's dedication to protecting and advancing the Berber cultural and linguistic heritage is proven by this award.

1.3.2. Educational Policies

The Algerian authorities have placed up educational policies that promote studying foreign languages, among them French, Spanish, and English. 4. considering the help of this initiative, the younger generation's linguistic skills will be further enhanced that will allow them to adapt and interact globally.

1.3.3. Media and Education:.

French remains prevalent in the media, particularly certain sources of information and education, although lacking in official status. It demonstrates that other languages, involving French, maintain an impact regardless of the fact that Arabic is the main language used in education and the media.

1.3.4. Cultural Identity:

The promotion of multilingualism in Algeria is deeply rooted in the country's history and cultural identity. Islam, which is the religion of the vast majority of Algerians, has been an integral part of Algerian nationalism and has provided a sense of unity and cultural identity. The country's official policy of Arabization since independence has aimed to promote indigenous Arabic and Islamic cultural values, which has contributed to the shift from French to Arabic as the national medium, particularly in education.

1.3.5. Recognition of Minority Rights:

The privileges of minority communities, for instance the Tamazight, to safeguard and preserve their language and culture have been recognized by the Algerian government. A crucial component of Algeria's multilingualism strategy is this acknowledgment, ensuring that minority's feel appreciated and incorporated in the larger Algerian population.

In summary, Algeria's approach to multilingualism is evident through its official language policy, educational initiatives, media presence, cultural identity, and recognition of minority rights. The country's commitment to these aspects demonstrates its dedication to fostering a diverse and inclusive society where multiple languages and cultures coexist.

1.4. LANGUAGE POLICY IN ALGERIA:

Algeria demonstrates a commitment to preserving its rich linguistic heritage. Post-independence Algeria declared Arabic and Berber as official languages, acknowledging the country's roots, But French, a holdover of colonialism, has maintained a significant place , particularly in educational institutions and official documents, in addition efforts were made to revive barber language acknowledging it's significance in preserving the diversity of the Algerian society. The multilingual society of Algeria is a manifestation of this linguistic variety and inclusivity

After independence, education in Algeria became fully bilingual, with some advocating for the continuation of French as the medium of instruction, viewing it as a symbol of their identity and resistance to the colonizer. Others, however, saw the benefits of promoting the Arabic language and culture through education, leading to the development of the "basic school" system in the late seventies, which sought to arabize primary and secondary education.

In 2022, the Algerian government announced a groundbreaking change in its language policy by introducing English as the first foreign language in primary schools, effectively replacing French, which had been the dominant colonial language. However, the introduction of English did not occur uniformly across all primary schools. It began as a pilot program in some schools and was eventually generalized nationwide.

The language policy in Algeria has seen significant shifts over the years, with English emerging as a prominent medium of instruction, the integration of English faced opposition from some quarters due to the perceived threat it posed to the dominance of the French language and culture .and stated by Maraf and Osam." Such waves of English are currently distinctly visible in the overt policies of the Algerian government and the socio-linguistic practices of Algerian society (Maraf and Osam, 2022, p. 39).

Despite these challenges, the Algerian government persisted with its language policy, influenced by various factors including the desire to align with international standards, the growing global presence of English, and the potential economic and cultural advantages of engaging with the English-speaking world .Moreover, the English language policy in Algeria has been seen as a tool leading to neoliberalism, as it encourages the adoption of English as a medium of instruction, potentially influencing educational outcomes and societal norms . There is also a concern that the rapid implementation of English can lead to a loss of proficiency in local languages and cultures.

Despite these concerns, the Algerian authorities remain committed to their language policy, as evidenced by their decision to replace French with English at universities, signaling a significant shift in the country's educational orientation.

In summary, the language policy in Algeria regarding English as a medium of instruction reflects a complex interplay of national identity, cultural preservation, and economic considerations. It represents a bid to position Algeria within the global context while navigating the nuances of its own cultural landscape. As suggested: «In the realm of education, which plays a pivotal role in instigating changes, fostering social justice, ensuring economic equality, and advancing literacy, language policies and the embrace of multiple languages present considerable challenges". (Beukes 2009.p22)"

1.4.1. Language policy in Algerian higher education:

In Algerian higher education, the language policy has a significant change with the shift from French to English as the medium of instruction. This policy transformation, initiated by the Algerian government, reflects a strategic response to global educational trends, economic considerations, and the urge to enhance local standards. The policy emphasizes on the potential facilitation of future collaborations with Western institutions, positioning Algeria within a broader international academic collaborations. This transition, however, poses unique challenges, given to historical aspects of the French language imposition in Algeria and the intensive training required for professors to adapt to English instruction in a relatively short period. The language policy in Algerian higher education is a dynamic aspect that shapes the linguistic landscape, pedagogical methods, and the overall academic experience for both educators and students.

The government commitment to foster the English language as primary medium of instruction, aiming to enhance their graduate's proficiency in a language widely recognized in scientific, technological, and academic circles. This strategic move is not only a linguistic regulation but also a reflection of a broader vision to position Algeria as a participant in the international knowledge economy. The policy acknowledges the role of language in facilitating research collaboration, academic exchange, and participation in worldwide discourse. Moreover, it coordinate with the evolving settings of higher education, where English competence is more and more viewed as a key asset. However, the implementation of such policy requires careful consideration on the   language variety in Algeria, where Arabic and Berber coexist in everyday life   . Achieving balance between advocating English as a medium of instruction and preserving linguistic diversity presents a complex challenge that the language policy seeks to address for the benefit of the nation's educational and socio-economic future

Algerian higher education language policy not only deals with the linguistic transition but also shares broader socio-cultural implications. That reflects on the government's recognition of the global significance English language has and its role in fostering international research dissemination, and technological advancements. The policy focuses on the importance of English not only as a tool for academic instruction but also as a gateway to accessing a vast body of global knowledge. This shift is not without its complexities, as it challenges traditional linguistic affiliations deeply rooted in the historical influence of the French language. The policy also necessitates a reevaluation of pedagogical approaches, curricular content, and the professional development of educators. Additionally, the government's commitment to providing in-service training programs shows its recognition of the challenges educators may

face in adapting to English instruction. As Algeria navigates this linguistic transition, the language policy in higher education stands as a dynamic force; molding the intellectual environment and contributing to the country's aspirations for educational excellence on the global stage.

1.5. ENGLISH AS GLOBAL LANGUAGE:

However, in recent years English has emerged as a global lingua franca ,and now is making strides in Algeria, Although the attribution of the English language can be related to various of factors, such as diplomatic channels , the linguists language policies and technological advancement as well , it is asserted that:" The influence of language on social, political, and economic outcomes is primarily the domain of linguists, sociolinguistics, political scientists, anthropologists, and psychologists'' (Vaillancourt's ,1982/1983,p 1–13

Gradually asserting it, and in some instances replacing French. came to meet those needs As it has been stated by Professor Miliani (2000) [8] "In a situation where the French language has lost much of its ground in the sociocultural and educational environments of the country; the introduction of English is being heralded as the magic solution to all possible ills- including economic, technological and education ones". (p.13)   The growing importance of English can be observed in various sectors as addressed "The globalization of English naturally promotes not only the 'englishzation' of other world languages but also the 'nativization' of English" (Kachru 1985:11) , indicating a shift in linguistic preferences and global connectivity. While French continues to hold significance, especially in specific professional realms, the ascent of English signifies a changing linguistic dynamic, reflecting the evolving global landscape and Algeria's engagement with the wider world. A narrative shifts from the familiar French to the flourishing influence of English, thus it became a global force, as we dive into the theme of education, the words of dearden serve a point «the use of English as a medium of instruction in education continues to grow globally" (Dearden 2014, p4), asserting itself as the language of opportunity, international communication, business, and diplomacy.

The English language established dominance over French. The once-imposed language of instruction was now sharing the spotlight with a language that resonated with the currents of a changing world. This linguistic transition embodies more than just a change in syntax; it encapsulates the evolution of the educational experience and the broader shifts within Algerian higher education .it marks a transformation in the way knowledge is acquired and shared. It

also became a bridge between the traditional values and the contemporary ideas, adapted in the face of linguistic evaluation.

In this respect Kotaokstated:

"English is the major language of news and information in the world. It is the language of business and government even in some countries where it is a minority language. It is the language of maritime communication and international air traffic control, and it is used even for international air traffic where it is not a native language. American popular culture primarily movies and music carries the English language throughout the world." (Kitaok1996:1, in Boubakeur, 2012, p32)

1.6. ENGLISH IN ALGERIAN HIGHER EDUCATION: A PATH TO ACADEMIC SUCCESS

The adaptation of the English language over the French one in Algerian universities revolves around the transition of the medium of instruction in academic institutions .this change is a significant departure from the historical dominance of French and marks a shift towards fostering English as the primary language of teaching and learning. The aim of this transition focus on the   global academic trends aligning with Algerian higher education, and enhancing the international competitiveness of graduates .by embracing English in Algerian universities main ,as well to equip students with language skills that are highly valued in the global job markets, greater accessibility to international research ,collaborations and academic opportunities .i.e. this move facilitates participation in global academic dialogues and It puts Algerian graduates in a position to interact with a larger audience in international intellectual discussions. In addition to reflecting the evolution of the academic and linguistic environment, the switch to English as the medium of teaching intends to remove any language barriers that might have impeded international collaboration and idea exchange. English adoption is also viewed as a calculated effort to draw in a varied student body and faculty from around the globe, promoting a more inclusive learning environment. By exposing kids to a variety of viewpoints and cultures, education can be enhanced and they will be better equipped to succeed in the connected global community.

The English language is open new horizons for Algerian scholars and researchers, allowing them to actively contribute to and stay abreast of advancements in their respective fields. While the transition poses certain challenges, such as the need for faculty development

and adapting curriculum materials, the long-term benefits are anticipated to outweigh these initial hurdles. By embracing English, Algerian universities position themselves to be hubs of knowledge and innovation, fostering a generation of graduates who are not only academically proficient but also globally competitive in an increasingly interconnected world. English Hitherto was placed third but gradually from second foreign language to first foreign language to language of knowledge, science and commerce.

1.6.1. Improving English Language Education in Algerian Scientific Fields:

The Algerian educational system has faced various reforms, including the adoption of English that changed the academic orientation, particularly in the curriculum, have been influenced by the growing importance of English as a medium of instruction (EMI) in higher education. This shift has led to teach subjects in English for scientific fields.

In addition to the recent changes in the Algerian academic switch towards English, there has been a notable emphasis on English as a Foreign Language (EFL) and English for Specific Purposes (ESP) within the educational system. EFL programs aim to enhance students' overall English language proficiency, focusing on language skills development for non-native speakers of English. On the other hand, ESP programs main focus on specific fields or disciplines, providing language training tailored to meet the linguistic needs of students in specialized areas such as science, business, medicine, or engineering.

The integration of EFL and ESP components into the curriculum reflects a broader effort to equip Algerian students with the necessary language skills to navigate an increasingly globalized world and meet the demands of various professional sectors. By incorporating EFL and ESP methodologies, educational institutions in Algeria are striving to develop students' language proficiency and prepare them for academic success and career opportunities in an international context.

1.7. THE GOVERNMENT DECISION:

In June 2022, the Algerian government declared the start of a pilot program, promoting English as the medium of instruction (EMI) in primary schools and higher education. Three weeks before the final results, the Ministry of Higher Education's Face book page published an online opinion poll. The early results suggested that 94% of students preferred English to

French. Teachers also viewed it as a step forward for education but emphasized the need for better organization. Quoting from the Higher Education Minister on a TV channel, 'We have to go further and cover all areas of scientific research if we don't study in English, there can be no future.' Starting from September 2023, English became the language of instruction, especially in scientific fields such as medicine, technology, and computer science. This initiative aimed to integrate English into the curriculum as a medium of instruction, rather than merely as a subject.

1.8. THE INSTITUTIONAL TRAINING:

After the transition from the utilization of French to English as the predominant language of instruction within university settings, set to commence in September 2023. This strategic decision follows a series of preceding measures, including the initiation of English language instruction at foundational educational levels,. In a directive issued on July 1st, the Secretary-General of the Ministry of Higher Education urged university directors to expedite preparations for this linguistic transition. This directive entails the organization of preparatory meetings and the establishment of specialized pedagogical teams before the onset of the summer vacation period while using both traditional and online learning. Such meticulous planning endeavors aim to ensure the seamless integration of English as the language of instruction in the upcoming academic year. This directive is emblematic of the government's strategic foresight, signaling a concerted effort to align Algerian higher education with global educational trends and foster international competitiveness. This transformative shift bears profound implications for various stakeholders within the Algerian educational landscape. Academicians and educators are poised to struggle with the intricacies of adapting pedagogical methodologies to accommodate English-medium instruction effectively. The attitudes of teachers towards EMI are crucial in determining the success of this language policy," stated Lasagabaster and Sierra (2009) (p. 155) Training should go beyond improving English fluency and focus on teaching methods specifically for using English as the language of instruction. Moreover Educators need guidance on adjusting their existing teaching styles, creating appropriate learning materials, and using technology effectively to help students succeed in English-medium classrooms. According to Davies and Higgins (2011), teachers' perspectives and attitudes play a crucial role in the successful implementation of EMI in higher education. Their beliefs and attitudes significantly influence their approach to teaching and can greatly affect student learning outcomes.(p29) Research has demonstrated that teachers' views on EMI can differ significantly based on factors

such as their language proficiency, teaching background, and cultural influences (Lasagabaster& Sierra, 2009).

1.8.1. Challenges:

The integration of EMI within Algerian higher education confronts various obstacles, including the proficiency levels in language among both instructors and learners, insufficient resources and support, and a notable absence of training and avenues for professional growth (Belkhiria, 2019; Saidi, 2021).students may encounter challenges related to language acquisition and adjustment to novel instructional modalities. The broader societal ramifications of this transition encompass cultural and linguistic shifts, Dörnyei (2012), who applied EMI in Japan, proposed that curriculum planning should match the language proficiency of students, emphasizing the need for teacher training in employing suitable teaching techniques and potentially reshaping Algeria's sociopolitical dynamics and international relations. Indeed, the decision to prioritize English as the language of instruction reflects a multifaceted endeavor to reposition Algerian academia within the global educational arena. By embracing English as a medium of pedagogy, Algerian universities aim to enhance their academic standing and foster greater engagement with international academic communities. Nonetheless, the implementation of such a comprehensive linguistic transition necessitates meticulous planning, robust institutional support, and a nuanced understanding of the socio-cultural implications inherent in this transformative process. As Algeria navigates this educational paradigm shift, stakeholders must remain attuned to evolving challenges and opportunities that accompany the adoption of English as the lingua franca of higher education.

1.9. COMPARATIVE ANALYSIS:

1.9.1. RWANDA:

In a previous study, this significant transition was made by several other countries, including Rwanda. The shift was partly motivated by Rwanda's accession to the Anglophone East African Community in 2007 and the Commonwealth of Nations, which encouraged the adoption of English .In October 2008, a Rwandan cabinet resolution called for the urgent implementation of English as the medium of instruction (EMI) in public schools at all levels, indicating recognition of the vital role English plays in various fields. It is crucial to explore the challenges and how the application of this decision affected students and teachers, as well as

implementing such a change in the curriculum. As stated, 'Transition is an expected outcome of an educational system, yet a challenging aspect of most educational systems. (Yuen, Yau, Tsui, Shao, Tsang & Lee, 2019, p. 15).The government policy established powerful political, social, and economic forces to transform Rwandan society and its institutions in order to replace French, the former colonial language. Some may call it a reckless policy with no consciousness of the plan's outcomes, as it posed serious challenges to Rwanda's education system. Due to historical and colonial associations with Belgium, the imperative nature of the transition to English as the medium of instruction became evident."

Rwanda underwent a significant shift in its educational language policy, transitioning from primarily teaching in French to adopting English as the language of instruction. The implementation of this change was not smooth, however. In 2009, the switch to English medium instruction started in schools, affecting various levels of education, including nursery schools up to universities. Despite the ambitious timeline, only 38% of primary school teachers were found to have a working knowledge of English in 2018. This figure is believed to be significantly lower in rural areas outside of Kigali, the capital city.

Despite the challenges faced by the sudden shift, the Rwandan government persisted with its new language policy. In December 2019, the Ministry of Education announced that English would replace Kinyarwanda as the language of instruction in all primary schools, effective from the following year. This decision aimed to improve early-grade literacy and numeracy skills by enhancing the quality of teaching.

However, the rapid transition posed serious implications for the education sector and the broader society. Analysts pointed out that the lack of planning and resources could disadvantage the majority of students, particularly in poor rural areas. The concerns were further highlighted by the fact that only 16% of third-grade students were found to be proficient in English in 2018.

In summary, Rwanda's shift to English in education reflects a broader trend of globalization and economic development influencing language policies in Africa. While the transition has been ongoing, its success and the impact on educational outcomes remain subjects of debate and research.

Rwanda shifted from French to English as the medium of instruction due to several factors:

1.9.1.1. Historical Context:

The Rwandan Patriotic Front (RPF), the ruling party in Rwanda, sought to distance itself from its Franco-Belgian colonial roots, specifically distancing itself from France and the alleged complicity in the 1994 genocide against the Tutsi. Many of the core members of the RPF had grown up in exile in Uganda and studied English.

1.9.1.2. Educational Realignment:

The Rwandan government announced a switch from French to English in its education system, positioning Rwanda as a member of the East African Community, which consists mainly of English-speaking countries like neighbors Uganda and Tanzania 1. This move was part of a broader realignment away from French influence and included applications to join the Commonwealth and the establishment of a cricket board 1.

1.9.1.3. Cultural and Linguistic Shift:

The shift to English was also a response to the long-standing dispute with France over its support for the Hutu regime during the genocide, which saw the expulsion of the French ambassador and the closure of various French institutions in Rwanda Additionally, English had become popular among young people, especially Tutsis in urban areas, as a symbol of rejection of Francophone influence associated with the Hutu regime.

1.9.1.4. Language Education Policy:

The benefits of learning in English and the rapid transition from learning in French were seen as crucial for increasing access to the global economy and were not linked to the abandonment of French. However, the implementation of this policy faced challenges, such as the need to find sufficient English-speaking teachers and the resistance from some quarters to the sudden change.

In summary, the shift from French to English as the medium of instruction in Rwanda was driven by a combination of historical grievances, educational realignments, cultural shifts, and language education policies.

1.9.2. TUNISIA:

Tunisia's shift to English as a medium of instruction has been a significant development in the country's educational landscape. However, the transition faces challenges that persist to

this day. Regardless of the widespread adoption of social media and the changes in the political regime since 2011, the promotion of English in education remains a subject of resistance from certain quarters.

> ➤ Key points regarding Tunisia's shift to English include:

1.9.2.1. English as a Second Language:

In Tunisia, English is taught as a second foreign language, starting from the fifth grade of basic education, the continuous resistance from some stakeholders against the full integration of English into the educational system.

Tunisia as multilingual society as well, uses French and English alongside Tunisian Arabic, which reflects their polyglotism competencies. There's also positive Pragmatic Attitude of Students towards English and recognize its importance in fields such as research, technology, mobility, employability, and career prospects.

1.9.2.2. Challenges in Implementation:

English-medium instruction (EMI) faces difficulties, including the status of French as the default medium of instruction at Tunisian universities and the linguistic diversity of the student body .The ongoing debate over EMI in Tunisia highlights the complexities involved in shifting from a traditional French-medium education system to one that incorporates English. The challenge lies in balancing the benefits of internationalization and the development of English language skills with the preservation of cultural identity and the realities of a multilingual society.

Although being a non-native language for most Tunisians, English has become an essential skill for academic success and future careers.

1.9.2.3. Attitudes towards EMI (challenges and adaptation):

Students generally hold a positive attitude towards English and recognize its importance in various sectors such as research, technology, mobility, employability, and career prospects.

Students and teachers have had to adapt to the new EMI environment, which sometimes poses challenges due to the students' multilingual repertoire and the status of French as the default medium of instruction at Tunisian universities.

Translanguaging practices have emerged as a coping mechanism, where students mix languages, including French and English, to facilitate communication and understanding of academic content.

1.9.2.4. Current Practices:

EMI practices vary in the classroom setting, with some teachers incorporating translanguaging techniques to engage students with the academic content.

The use of translation theory is also observed, as educators reconcile the push towards Englishization with the realities of translanguaging, which involves mixing languages in teaching.

1.10. CONCLUSION:

The initial chapter of this literature review has offered an extensive examination of the shift from French to English as the medium of instruction within Algerian universities, As we progress, our focus shifted towards the broader implications of this linguistic transition on the educational sphere, policy development, and societal impact. We also aimed to deepen our knowledge of the switch to English as the language of instruction and its long-term effects on education, as well as a comparative analysis of the experiences in Rwanda and Tunisia. Our thorough investigation of the policy-making process, historical contexts, and implementation protocols has allowed us to unravel together a complex story about this language change.

This conclusion summarizes the main points of the first chapter, lays out the framework for the next chapters of our study, and emphasizes on the need for more research on the adoption of English as a teaching language in Algerian colleges.

CHAPTER TWO: METHODOLOGY

2.1. INTRODUCTION:

2.2. research design:

2.3. Sample and population:

2.4. Research tools:

2.5. Data collection procedure:

2.6. Data analysis:

2.7. Conclusion:

2.1. INTRODUCTION:

In this chapter, we delve into the comprehensive examination of language training experiences among science educators within the Algerian educational context. Starting with the groundwork laid in the preceding chapter, which provided a theoretical framework and historical background, as well as the language policies for the shift to English as the medium of instruction, this chapter shifts focus towards the application of data and results from experiments. Through a combination of classroom observations and an interview for the English professors, in addition to a structured questionnaire administered to the science educators who undergone English language training, shedding the light on the dynamics used in the integration of language instruction within scientific disciplines.

2.2. RESEARCH DESIGN:

The research design has been carefully developed to tackle the challenges of integrating English as language of teaching in the Algerian educational setting. Following Parahoo (1997), the research design outlines the methods, timing, and locations for data collection and analysis, ensure a systematic approach to every aspect of the study in order to attain the desired outcomes.

2.3. SAMPLE AND POPULATION:

Sample population refers to the group or individuals from whom the sample is taken in order to apply your study or research on them so can get a result about the entire population

The study's participants are the first year science educators and L1 computer science students, at Belhadj Bouchaib University, Ain Temouchent, in the academic year (2023-2024).

Due to the Algerian ministry of higher education, the application of English as language of instruction in the scientific fields will start this year with the first year science teachers, and for that it is more suitable to select them as our sample since they are the first who witnessed this linguistic shift.

For the interview, English teachers were the best option based on their demonstrated proficiency in English language instruction and their experience in delivering training sessions with their possession of doctorates.

2.4. RESEARCH TOOLS:

Research tools refer to the various instruments, methodologies, or techniques that researchers utilize in order to acquire data that is related to their study's objectives or research inquiries. These tools included in our thesis are chosen with great care, taking into consideration the specific nature of the research and the type of data that is required for analysis. They hold immense significance in the process of data collection, as they enabled us to methodically gather valid and important evidence that can be thoroughly examined and interpreted to address the research inquiry at hand.

And For a better and deeper understanding to the research a multiple instruments were used including a questionnaire in both French and English, interview and a classroom observation, bearing in mind aspects of validity and reliability.

2.4.1. Triangulation:

Triangulation is a powerful research strategy that combines multiple methods to enhance the validity, reliability, and depth of research findings. It requires careful consideration of the nature of the research problem, the choice between qualitative and quantitative approaches.

The combination of questionnaires, interviews, and classroom observations illustrates triangulation in data collection. Each method provided a unique perspective, allowing for a more broad and nuanced understanding of the shift from French to English in Algerian universities.

In our thesis, the sample triangulation involved selecting a diverse group of participants for both quantitative surveys and qualitative interviews and classroom observation to ensure a comprehensive representation of the population being studied, thereby enhancing the reliability and richness of the research outcomes.

2.4.2. Mixed methods:

Our research combines Mixed methods both qualitative and quantitative approaches to provide a more comprehensive understanding of the research questions, As suggested by dawdi et al. "A research methodology known as "mixed-methods research" (MMR) combines several approaches to answer research questions in a suitable and ethical way". (Dawdi et al., 2021 ,and it's particularly helpful since it extends the advantages of both approaches, enabling a more in-depth and complex inquiry into phenomena. as stated by Tashakkori and Creswell (2007)

broadly define mixed methods research as "research in which the investigator collects and analyses data, integrates the findings and draws inferences using both qualitative and quantitative approaches" (2007.3).

2.4.3. Qualitative:

Research primary intent is to focus on Understanding individuals' meanings, interpretations, and experiences, which frequently includes techniques like focus groups, interviews, and observation. It is particularly valuable for thoroughly exploring difficult subjects and encapsulating the diversity of human interactions.

2.4.4. Interview:

The interview is a structured dialogue between two or more individuals; an interview involves one or more interviewers to obtain information from the interviewee(s). The interview process is "a pipeline for transmitting knowledge" (Holstein and Gubrium, 1995, p. 3).

The English teacher's interview was directed towards EFL teachers with substantial experience in teaching English at the university level. The interview' question is made up of nine (9) key questions. The below table will show the aim of each set of questions:

Table 2.1 English teacher's interview objectives:

Question	Objective
1/How do you integrate language instruction within the context of scientific disciplines during your training sessions?	Understand the approach and method that English teachers apply in their training sessions to integrate language instruction into the framework of scientific fields.
2/What are the typical challenges you encounter when teaching English language skills to science educators, and how do you address these challenges?	Determine what common issues English teachers have during teaching language skills to science educators and analyze the solutions they come up with.

Question	Objective
3/In your experiences, what level of English language proficiency do science educators generally possess?	Identify, using the experiences and observations of the English teachers, the level of English language proficiency among scientific educators.
4/How does this impact their teaching or communication in scientific contexts?	Find out how English teachers assess the impact of science educators' English language competency on their teaching strategies and interactions in scientific settings.
5/How important do you consider English language proficiency for science educators, and how does it affect their professional development or advancement?	Seek out how important science educators perceive English language skill is, according to assessments by English teachers, and inquire into how it shapes their professional growth and career advancement opportunities available to them.
6/Do you tailor your language instruction methods differently for educators in different scientific disciplines? If so, how do these adaptations manifest?	Examine whether English teachers customize their language instruction techniques based on the particular scientific areas in which the educators they are training, and to clarify the nature and extent of these adaptations.
7/Can you provide examples of how you modify language instruction to suit the needs of science educators in various fields of study?	Inquire from English professors for specific examples of how language education has been modified to meet the various needs of science educators in multiple academic disciplines.
8/What outcomes or changes do you observe in science educators after undergoing your language training programs?	Elicit insights from English teachers regarding the outcomes or transformations in science educators following their participation in language training programs.
9/How do you measure or evaluate the effectiveness of your	Investigate the methodologies utilized by English teachers to assess the efficacy of their

Question	Objective
language instruction in enhancing educators' language skills within their scientific disciplines?	language instruction in improving educators' language proficiency within their respective scientific disciplines

2.4.5. Classroom observation:

Classroom observation is a methodical procedure employed by educators, researchers, and educational administrators to collect information regarding teaching and learning practices within a classroom environment. As clarified by Kraft & Blazar, 2017" Observation systems' scores can serve the dual purpose of offering feedback and guidance to teachers, while also assessing the effectiveness of interventions aimed at improving teaching practices". The interactions between teachers and students, which are considered as the main catalysts for student development and learning, are effectively captured by the concept of CLASS". (Pianta, La Paro, & Hamre, 2008, p 14).

The main aim of our classroom observation is to get a better Insight on the classroom environment and the language of instruction used during the course, in a four (4) different observation while focusing on the following category:

Table 2.2: Classroom observation objectives:

Observation Category	Focus Areas	Session 1	Session 2	Session 3	Session 4
Language Proficiency	Teacher's command of English, Students' use of English in class				
Instructional Delivery	Teaching methods, Use of English in instruction				

Student Engagement	Participation levels, Questions and comments				
Teacher-Student Interaction	Communication style, Feedback mechanisms				

2.4.6. Quantitative:

On the other hand, deals with numerical data and statistical analysis. It serves as a foundation for statistical analysis and generalization by measuring variables and testing hypotheses.

In an effort to provide academics an in-depth understanding of our investigation's concerns, mixed methods research (MMR) blends qualitative and quantitative methodologies. This method is especially helpful in disciplines like the social and behavioral sciences, where comprehending intricate phenomena necessitates an advanced and comprehensive examination. As suggested: " Mixed methods research can be viewed as an approach which draws upon the strengths and perspectives of each method, recognizing the existence and importance of the physical, natural world as well as the importance of reality and influence of human experience" (Johnson and Onquegbuzie, 2004)

The use of mixed methods in a research is justified by the need to gather diverse and multiple viewpoints, validate findings, develop an extensive knowledge, deliver deeper clarification of statistical results, have better contextualized measures, and monitor the program's progress of the transition from French to English in Algerian universities.

A questionnaire is a research instrument consisting of a series of questions for the purpose of gathering information from respondents, in fact adopted what Silverman (2010) "describes as the positivist model of reality, in which the research process is assumed to give direct access to knowledge that already exists in the mind of the respondent" . (2.4.7. Questionnaire: Rowley, 2014, p32).

It is a tool used in surveys and polls to collect data from a large number of people. As suggested by the author Rowley," The term questionnaire is utilized to describe documents containing a combination of open and closed questions, prompting respondents to provide answers (Rowley, 2014, p2).

The questionnaire is developed in both English and French to suit the audience's comfort; it was organized into three distinct sections, each with its own purpose. The first section aimed at gathering basic information and laying the groundwork for understanding the participants' backgrounds and experiences. The second section consists of Implementation and Support. The final section is dedicated for Pedagogical Strategies and Challenges while using a blend of question types such as "WH" questions, multiple choices and open-ended one to offer a deep and varied insight into the research topic.

Table 2.3 educator's questionnaire objectives:

Question	Objective
1/What is your current level?	Understand the depth of the educator's knowledge, proficiency in teaching methods, experience in the educational setting, and adaptability to different learning styles and environments.
2/What was the language of instruction when you studied at university?	Understand the cultural and linguistic background of the Individual, their proficiency in the language of instruction, and its influence on teaching and learning in multilingual or bilingual educational settings.
3/What do you think about the use of English instead of French in teaching scientific modules?	Gauge the individual's understanding of the cultural and linguistic implications of language choice in education, inform the choice of teaching methods and strategies, and highlight the need for student support services.
4/Do you think that your educational background could affect your performance?	Understand the individual's self-perception and awareness of how their educational background can influence their performance, guiding personal and professional development, teaching and learning strategies, and career advancement.

Question	Objective
5/If yes, do you believe that with good training you could overcome the problem?	Assess the individual's belief in the potential of training to address any identified issues or challenges related to their educational background affecting their performance.
6/Do you think that you have received sufficient resources and support to effectively teach in English?	Assess the individual's view on the adequacy of the support and resources provided, including language training, their ability to teach in English, and the need for additional professional development.
7/If no, what was missing?	Identify specific areas where resources and support are lacking, informing a more targeted approach to addressing these gaps and improving teaching in English.
8/Have there been changes in the curriculum for science programs following the shift to English?	Assess whether the shift from teaching science programs in a non-English language to English has led to modifications in the curriculum.
9/Have you observed any differences in student engagement and performance since the transition?	Evaluate whether there have been observable changes in teaching methods, student engagement with the material, and overall academic performance since the transition to English.
10/Have you applied any strategies to bridge language gaps and ensure effective communication with students who may not be fluent in English?	Understand the teacher's efforts to bridge language gaps and ensure effective communication with students who may not be fluent in English, informing curriculum development, teaching methods, student support services, and professional development.
11/If yes, can you give an example?	Provide examples of how educators can adapt their teaching methods to address language barriers and ensure effective communication with students who may not be fluent in English.
12/Are there any specific strategies or tools you have found effective in promoting	Get a deep understanding of the teacher's experience with the use of specific strategies or tools to promote language acquisition alongside scientific knowledge.

Question	Objective
language acquisition alongside scientific knowledge?	
13/Has the transition impacted the relationship between you and the students, particularly in terms of communication and interaction in the classroom?	Understand the impact of the shift to English on the relationship between educators and students, particularly in terms of communication and interaction in the classroom.
14/How do you balance the need to teach specialized scientific terminology in English while ensuring students have a strong scientific knowledge?	Understand the individual's approach to balancing the need to teach specialized scientific terminology in English with ensuring students have a strong scientific knowledge.

2.5. DATA COLLECTION PROCEDURE:

This study employed a mix method approach and triangulation to gather information about this shift .to ensure the validity of our data collected methods were absolute to the credibility of our study, In terms of content validity to the thesis's objective and the carefully structured questionnaire which was aligned with the crucial elements of science educators' (42) language training experiences. Furthermore our supervisor a professor in educational research and language instruction examined the questionnaire items for clarity and applicability in order to increase content validity. This guaranteed that the instrument adequately addressed the research questions that will ultimately draw valid conclusions from the study.

The interview was designed by the researchers to a target sample of English teachers three (3) out of six (6) who participated in training program aiming to explore their experiences and challenges. As well as their perspectives on this linguistic shift, the interviews were done in both face to face with two teachers and online by using Google forms with one teacher when the last one took one week to give us the feedback.

Moreover for the classroom observation that is conducted by both of teachers and students ,including computer science to document the use of English as medium of instruction.it Is done in four (4) different sessions TD and TP in the second semester , Focusing on teacher-student

interaction, instruction and communication. Acknowledging the ethical consideration of our study we obtained the consent of the participants and ensured confidentiality of responses.

To sum up, the section above highlights the multiple data collection methods utilized in our research and emphasizes on the procedures follow to achieve academic integrity.

2.6. DATA ANALYSIS:

Data analysis is the process of examining, transforming, and modeling data with the goal of discovering useful information. The questionnaire was done online by using Google forms but since it is in two different languages the results were done manually, moreover for the interview and the classroom observation went through several steps.

2.7. CONCLUSION:

In conclusion, this chapter outlines the strategies employed for data gathering. It provides a summary of the research methodology, the target group for the study, the tools used for data collection, the process followed to collect the data, and the approach to data analysis. Moreover, the methodology this section has showcased a precious and systematic approach employed to ensure the study's reliability and validity through a comprehensive explanation of the research design, data collection methods, and sampling procedures. Additionally, it details the method of data analysis that will be utilized to interpret the data, leading to the conclusions and findings of the study, which will be presented in the subsequent chapter.

To sum up, this chapter has also established the groundwork for the analysis of data in Chapter three by providing an overview of the approach used to tackle the research questions and objective

CHAPTER THREE:
DATA ANALYSIS, SUGGESTIONS AND
RECOMMENDATIONS

3.1. INTRODUCTION:

The third and last Chapter of this dissertation is dedicated to the in-depth analysis of data collected from a range of sources, including interviews with English teachers who taught science educators, surveys of science teachers, classroom observations, and a thorough review of the language policy in Algeria. This chapter aims to provide a comprehensive grasp of the leap from French to English as the medium of instruction in Algerian universities especially in the scientific fields (computer science), with a particular focus on the attitudes of science teachers towards this shift and the challenges they encounter.

The analysis will explore the motivations behind the shift towards English, and the strategies employed to facilitate this change. It will also examine the role of continuous professional development training for teachers in preparing them for the shift to English in their educational activities. The chapter will examine the readiness of teachers and students to adopt English as a medium of instruction, as well as the impact of this transition on the academic development of Algerian academic institutions.

3.2. RESULTS OF THE QUESTIONNAIRE:

The questionnaire employed in this research was distributed to 42 teachers in the scientific department of belhadj Bouchaib University in Ain Temouchent. The overall results are as follow:

Question 1:

Figure 3.1: Distribution of Academic Staff Roles

Count of 1/What is your current level ?

Senior lecturer(mca) 26.1%

Junior lecturer(mcb) 47.8%

Professor 17.4%

Teaching assistant 8.7%

The chart shows Junior Lecturers (MCB) making up the largest group at 47.8%. This is followed by Senior Lecturers (MCA) at 26.1%, Professors at 17.4%, and Teaching Assistants at 8.7%.

Question 2

Figure 3.2: teacher's language background

Count of 2/What was the language of instruction when you studied at university?

English
8.7%

French
91.3%

The result shows that French is the main language used for teaching (91.3%), which means there were a strong focus on French in the educational system, meanwhile English is only a small part (8.7%), showing that English-based teaching is not very common.

Question 03:

Figure3.3: Language Preference in Education

Count of 3/what do you think about the use of English instead of French in teaching scientific modules?

Good Idea but not the...
43.5%
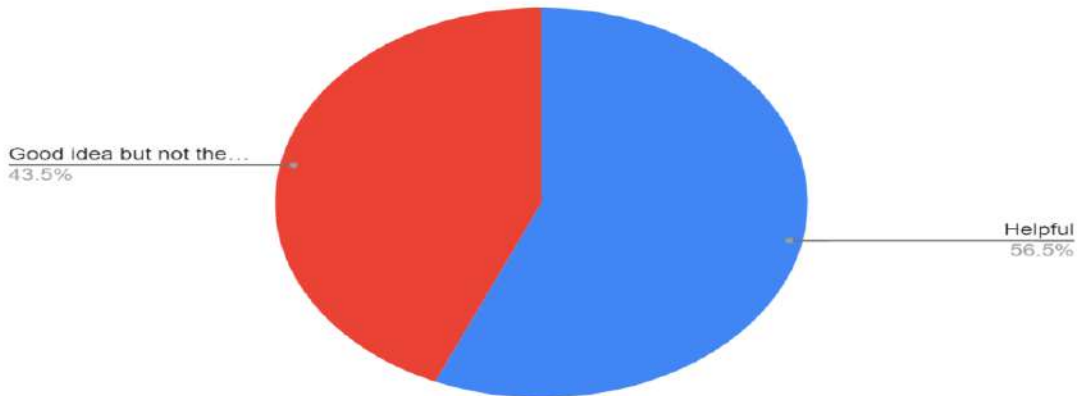
Helpful
56.5%

For this question the larger part (56.5%) is marked as "Helpful", showing that majority of respondents believe using English for this purpose would be beneficial, while the smaller part (43.5%) thought it was a good idea, it wasn't necessarily the best option.

Question 4:

Figure3.4: Impact of Educational Background on Performance

Count of 4/Do you think that your educational background could effect your performance?

Yes..Iam not familiar to...
45.5%

No
54.5%
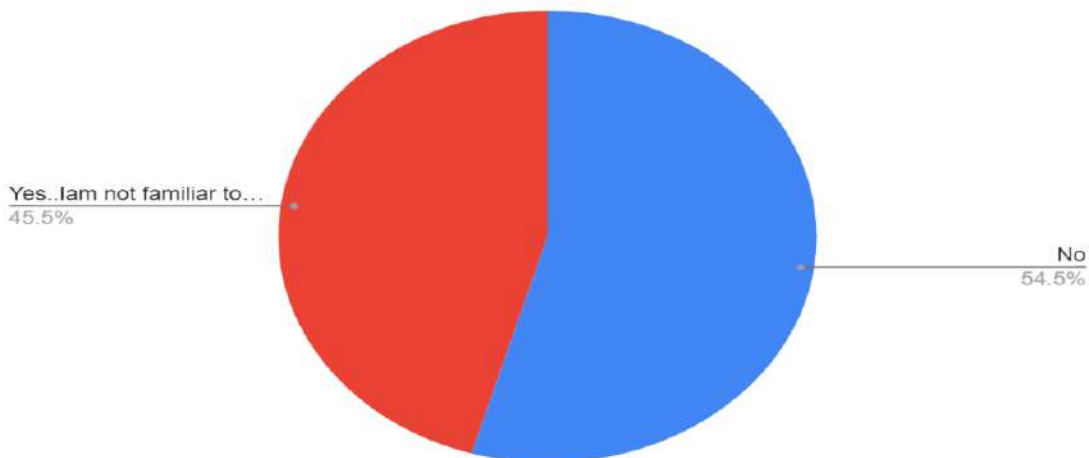
The results indicate that 45.5% of participants believe that their educational background does affect their performance, as they answered "Yes." On other hand, 54.5% of respondents disagreed, answering "No," suggesting that they do not think their educational background impacts their performance.

Question 05:

Language Barrier and Training:

9 participants refrained from answering and the rest of them answered yes, expressing a belief that with the right training, the language barrier can be effectively addressed

Question 06

Figure3.5: Perception of Resource Sufficiency

Count of 6/Do you think that you have received sufficient resources and support to effectively teach in English?

Yes
39.1%

No
60.9%
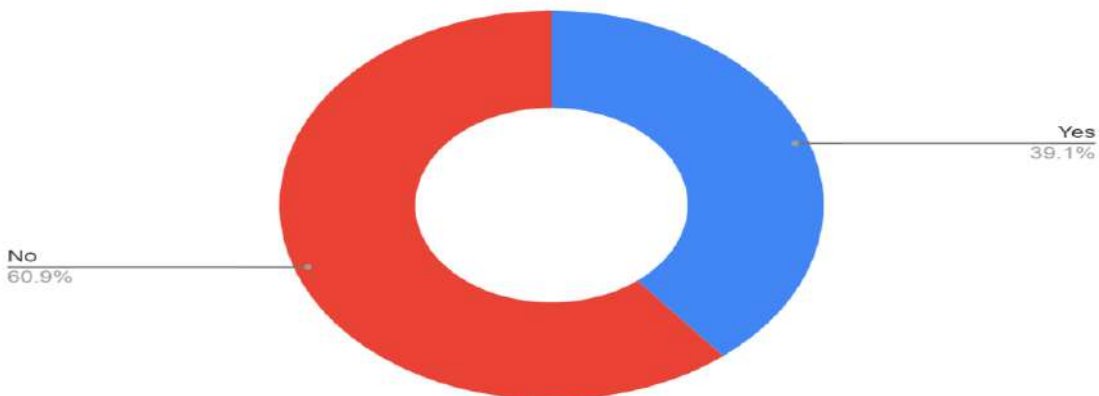
The larger section, "No" (60.9%) assume that they did not receive sufficient resources, while (39.1%) of them think the opposite.

Questions 7:

Educator Support and Training Needs

Based on the answers provided (13 out of 23), it's clear that the educators did not feel they had received sufficient resources and support to effectively teach in English "no further training program in English after the first session offered to the teachers the last ye

ar". They expressed a need for more practical language training. Additionally, they highlighted the importance of continuous support and the need for more time to improve their practices» Despite the fact that the teacher who taught us was excellent in delivering information, unfortunately, the training program was not renewed this year. The lack of continuity and the tight planning by the governing bodies were behind this". This suggests a comprehensive gap in the support system, indicating a lack of targeted, ongoing, and practical training opportunities that are crucial for enhancing their teaching skills in English.

Question 08:

Figure3.6:Science Program Curriculum Changes

Count of 8/Have there been changes in the curriculum for science programs following the shift to English?

Yes
13.0%

No
87.0%
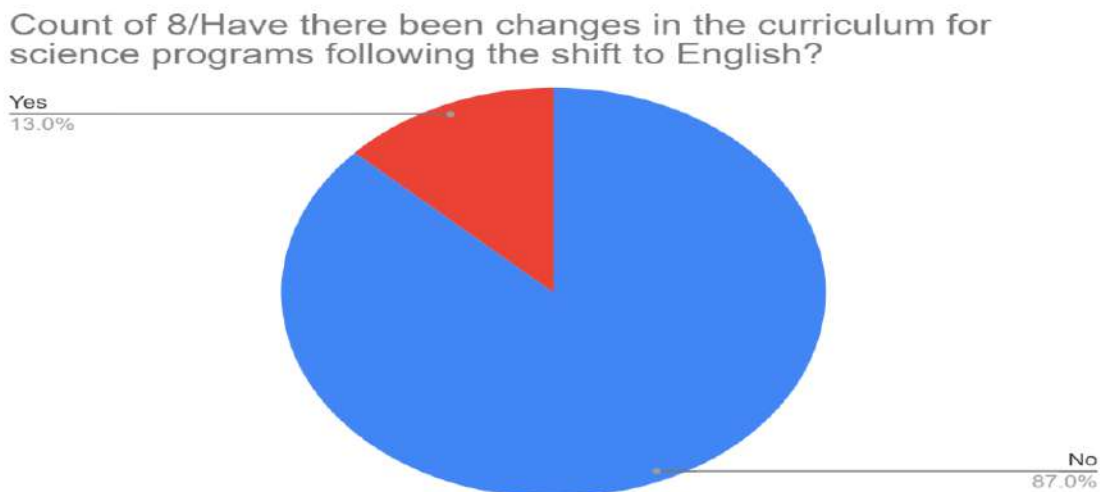
it's clear that the majority of respondents, 87.0%, did not notice any changes in the science program curriculum after the shift to English. In contrast, 13.0% of respondents reported that changes had occurred.

Question 09:

Figure3.7: the Impact of Language Transition on Student Engagement and Performance

Count of 9/Have you observed any differences in student
engagement and performance since the transition?

Yes
50.0%

No
50.0%
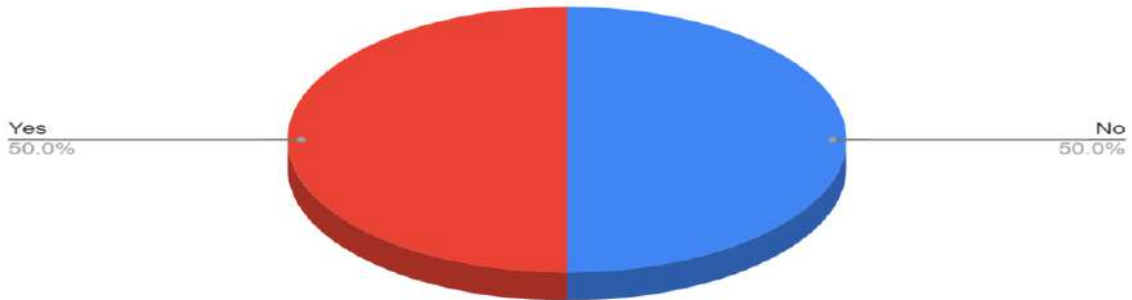
In here answers are divided equally that half of the respondents (50.0%) observed differences in student engagement and performance since the transition, while the other half (50.0%)did not observe any differences.

Question 10:

Figure3.8:Communication Enhancement Strategies

Count of 10/Have you applied any strategies to bridge
language gaps and ensure effective communication with stud…

No
45.5%

Yes
54.5%
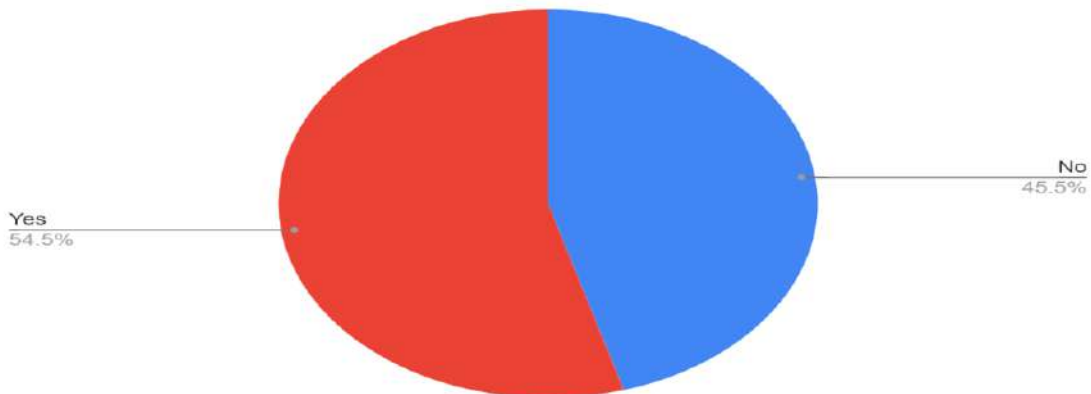
The majority of respondents, 54.5%, have employed strategies to bridge language gaps and enhance communication with students. In contrast, 45.5% of respondents have not used such strategies.

Question 11:

Strategies for Bridging Language Gaps:

All the participants believe that online resource, interactive learning, clear communicationtry to speak slowly. "I repeat many times a sentence. I ask them to interrupt m e at any moment if they have not understood". "I use French to explain, English assignments, visual aids, simplified language, scientific terms in English, and translations would help students who aren't fluent in English». «I try all the time to translate for them" , making learning more accessible and prepare them for international experiences.

Question 12:

Strategies and Tools for Enhancing Language Acquisition and Scientific Knowledge:

To improve language skills and scientific knowledge, it's important to always use English, use technology for translations "I have used AI tools and other translators to translate my slides. I listen to videos in English, etc." , learn by speaking directly in English, practice through social media and music, repeat information for better understanding, keep training programs ongoing, and use visual aids and multimedia resources "Use of visual aids (Data Show) and training for English students, integration of multimedia resources: videos, podcasts, scientific articles in language learning". . It's also important to study in the national language for undergraduate programs and in English for master's programs to prepare for international studies.

Question 13:

Figure3.9: Impact of Language Transition on Teacher-Student Relationships

Count of 13/Has the transition impacted the relationship between you and the students, particularly in terms of comm…

Yes
47.6%

No
52.4%
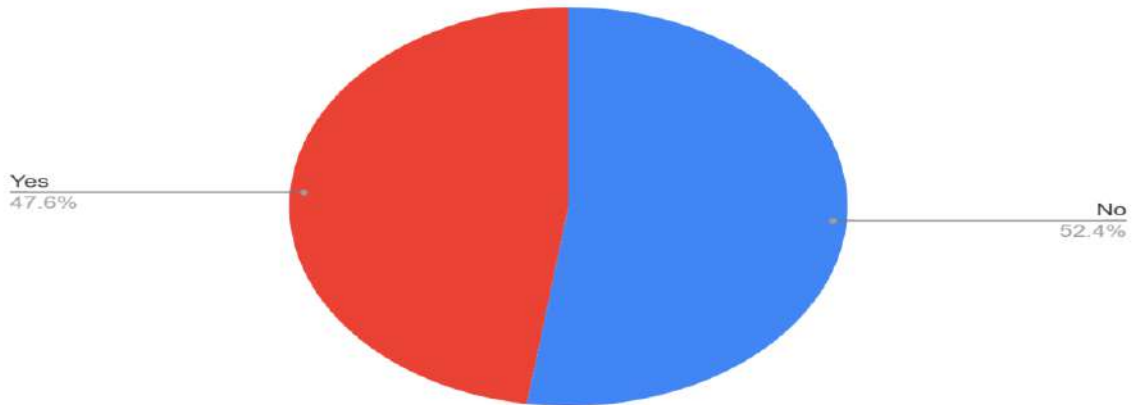
For this question, (52.4%) slightly more than half of the respondents believe the transition did not impact their relationship with the students. while (47.6%) believe the transition did affect their relationship with the students.

Question 14:

Strategies for Enhancing Comprehension and Skill Development in English:

Basing on the answers of twenty (20) participants the best way to seek the balance is combining with native languages for explanations "Give meaning to native language terminology to simplify comprehension». And encouraging reading in English are effective. Assigning English homework and adding a technical English module can reinforce skills "Use Visual Aids, diagrams to illustrate concepts. Use also interactive Learning: Include experiments and hands-on activities to reinforce understanding." Personal development in English and translations when needed enhance comprehension. Discussions and group projects can reinforce vocabulary and understanding.

3.3. THE RESULTS OF THE INTERVIEWS:

3.3.1. Introduction:

Within this section, we will examine the interview feedback gathered from English educator's quotes, a critical component of our research on language regulations and methodologies in Algerian schooling. The importance of this study is rooted in its capacity to offer direct observations and viewpoints from teachers who hold a significant position in

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executing and maneuvering language regulations within the Algerian educational environment. Through the in service training for the scientific field teachers, additionally our objective is to acquire a more profound comprehension of the obstacles encompassing English language utilization and teaching in belhadj bouchaib university , by doing so we hope to provide valuable perspectives to the wider implications on language education and policy formulation.

3.3.2. Participants quotes

In the pursuit of educational impact, this shift has made. interviews of nine (9) questions are conducted to three (3) English teachers, who have a long time experience in teaching English and have participated in the in-service training, so the incoming tables will contain the questions number that we already mentioned in the second chapter, also quotes from teacher (A), (B), (C).to gain multiple and valuable perspectives that will further aid us to enrich our understanding of the challenges ,strategies and outcomes related to this switch in higher education.

Table 3.1: first participant quotes(A)

Question Number	Quote
Q1	For my part, I've been teaching B2 educators of different fields, so they could easily understand instructions in English. Yet, switching from English to French happened when necessary.
Q2	No significant challenges were encountered, except for some vocabulary comprehension issues solved by translation in French.
Q3	All levels may exist. For me, it was a group of B2 learners.
Q4	Most of my learners could handle and successfully manage a course in English in their different subject matters.
Q5	English is crucial for educators who intend to do research.
Q6	This is what we call course design according to learners' needs.

Q7	Modification of course content or of activities rarely happened, but I can cite instances like when learners ask for more speaking instead of reading, or when I modify teaching materials according to their desires.
Q8	Some of them have improved, however others still need some training.
Q9	Educators frequent absences lead to a lack of interest and motivation by the end of the training program, so I cannot consider that training as reliable for any evaluation

Table 3.2 second participant quotes (B) :

Question Number	Quotes
Q1	"It's impossible to make such shift directly and rapidly, it takes more time. Old generation of teachers speaks French and they use it in their teaching. In a bilingual country, French still exists. It depends on the generation.
Q2	"Motivation towards learning English, are they ready to accept English in their field? It needs purpose. Most of students are here for marks only. Now among the hindrances that effect Teachers is the readiness of the student himself and there are no real syllable programs for the teacher to select his lectures from or to organize or prepare materials in his lecture.
Q3	"Intermediate"
Q4	"Well, it takes time to adapt to the language; they have knowledge but lack at using scientific terms in English."
Q5	"It is crucial to teach using English and very effective since most references are in English, so it's for them to make effort to implement English in the classrooms."
Q6	"It is very important to eclectic in teaching, to diversify your strategies depending on the situation you are facing, sometimes you can use both languages to explain lectures, it's okay to shift to French to explain your ideas."

Q7	"Well, language should be contextualized; to respect the field of the study. For example: a teacher in biology should adopt to the language (cells, tissue…ext.)"
Q8	"I try to read to adapt to the scientific terms."
Q9	"It was a nice experience as a teacher; I gained confidence and new knowledge because it's important to diversify the background."

Table 3.3: third participant quotes (C)

Question Number	Quote
Q1	As a teacher, it's much better to use English, but sometimes using the native language so the science educators can understand and also to gain time.
Q2	Honestly, many had no clue about English, some studied in French or even Spanish, sometimes it was a great challenge, and I was pushed towards using French to explain instructions.
Q3	A1 to A2 there was also good teachers and even pre-intermediate.
Q4	Concerning how they implement their knowledge when teaching, they have an idea about the terminology; they have a concept in English but they do not know how to communicate or transmit the message in English or how to express or explain in English. And this is the missing point.
Q5	English now is very important; because most books and articles around the world are mainly in English, and the teachers are forced to learn it. But as beginning to switch it is impossible to shift 100%, we need to use double instruction (French and English) then once they acquire the appropriate knowledge about the language and they feel confident to explain in English, at that level we can make things can improve, but at this moment switching depends on the disciplines.
Q6	Sure, there are adult learners and there are professionals; it is not the same thing, it's like ESP (teaching English for specific purposes), but this is teaching English for professional purposes (EPP). It's different with students who are younger, as adults we belong to the same

	generation (social codes and culture), the younger generation may have another viewpoint of the world. This barriers I cannot find them with the professionals it easier to transmit some messages. But concerning the language, yes it could hinder. Teachers have more responsibilities and not enough time as well to improve their language skills.
Q7	For instance, vocabulary, I use items available to make them understand the words, or I switch to Arabic or French.
Q8	To be honest, we did not have enough time, the circumstances were not appropriate for better results, personally, I am not satisfied … a slight change but we need more time and opportunities. Lack of time and concentration had a major impact. It was a good experience but it was not enough and we couldn't reach our objective (teaching English).
Q9	For the moment, teachers are relying on the university platform; they are learning English in a virtual way, they need communication and practice. Because if you don't practice the language you lose it. Also, through reading, listening, and writing. - The idea was good but its implication had a lot of obstacles (lack of time and materials). - I encourage this idea, as a teacher, it was a fun experience to teach a new audience and students.

These data were obtained from a face to face, structured interview for teachers (B) and (C), and an online interview for teacher (A). within the context of our thesis this will allow us to offer more profound examination of the analysis , this approach not only break down the questions to themes and make it more comprehensive but also delves deeper into the complexities of the areas of focus .

3.3.3. Interview THEMES

Theme 1: Integration of Language Instruction in Scientific Disciplines

.All the teachers prefer using English instead of French. However, when necessary, the French language is easier and more adequate for understanding. There was flexibility in switching between the languages; the older generation of teachers is not used to English. Therefore, it takes more time to make such a linguistic shift.

Theme 2: Challenges in Teaching English to Science Educators

When Teacher A had only a problem with vocabulary comprehension, addressing the language barriers, teacher (B) declared that the science educators were clueless about the language .however Teacher B found that they lacked motivation to learn because there were no materials to work with. Each teacher faces a challenge.

Theme 3: English Proficiency Levels among Science Educators

While some instructors exhibit a flexible command of vocabulary (as noted by Teacher B), others recognize the importance of pedagogical skills over language fluency (as emphasized by Teacher C). Moreover, learners are described as having an intermediate proficiency level (B2) by teacher A, indicating their capacity for engaging with more complex language tasks. This highlights the nuanced relationship between language proficiency and teaching effectiveness in English-medium instruction contexts.

Theme 4: Impact of English Proficiency on Teaching and Communication

As emphasized by Teacher (A)it becomes clear that proficiency in the English language plays a crucial role for science educators in both academic and professional domain ,Nevertheless, Teacher (B) draws attention to the difficulties of adapting to a new language and the lack of scientific terminology in English, which can impact educators' learning experiences. Similarly, Teacher (C) acknowledges the challenges of applying knowledge in English, particularly when it comes to communication. These perspectives highlight the obstacles that educators encounter when faced with language barriers in educational settings, emphasizing the necessity for adequate support and resources to effectively address language-related challenges.

Theme 5: Importance of English Proficiency for Professional Development

Teacher (A) emphasized the importance of English proficiency for educators who aspire to conduct research, highlighting its relevance in both academic and professional settings; teacher (B)focused on The effectiveness of teaching in English, especially considering the widespread use of English references, and teacher(C)insists on The essential role of English in accessing global academic and professional resources. Collectively, these viewpoints shed light on the multifaceted importance of English proficiency in educational settings, encompassing research, instruction, and the utilization of resources.

Theme 6: Tailoring Language Instruction for Different Scientific Disciplines

Teacher (A) discuss that the change in course design according to learners' needs and the modification of course content or activities based on learner requests shows a learner-centered approach to teaching, while teacher (B) is being flexible and eclectic in teaching and diversifying strategies based on the situation; moreover teacher (C) indicates on the Gradual Transition to English in Teaching because there is Differences in Learning Between Adults and Younger Generations.

Theme 7: Modifications in Language Instruction for Various Fields of Study

Teacher (A) modifies the course design according to teachers' needs and the modification of teaching materials based on their requests reflects a learner-centered teaching approach. This approach is likely to enhance engagement and motivation, as it tailors the learning experience to meet individual needs and preferences. And teacher (B) draw attention to the need to contextualize language to respect the field of study, such as using specific scientific terms in biology; where teacher (C)employs a multi-lingual strategy to facilitate the acquisition of new words. This approach is designed to make the learning process more effective and engaging, ultimately leading to better language proficiency.

Theme 8: Outcomes of Language Training Programs for Science Educators

Teacher (A) the observation of varied outcomes among educators and the challenges posed by frequent absences in addition to the complexities of teaching English to educators. These external factors considering individual learner needs can impact learning outcomes. Teacher (C) reflecting on the teaching experience, including the impact of time and circumstances on learning outcomes.

Theme 9: Evaluation of Language Instruction Effectiveness

Teacher (A) considers that the educators' nonattendance leads to the inference that the training program lacks credibility for assessment purposes. Consequently; their absence compromises the training quality, thereby hindering an accurate evaluation of the participants' learning achievements. While teacher (B) feels that the value of teaching experience in gaining confidence and new knowledge. Teacher (C) statement stresses that teachers are depending on a university platform for online English language learning, underlining the importance of communication and practice to avoid language decline, and supporting a well-rounded approach that involves reading, listening, and writing.

3.4. THE RESULTS OF CLASSROOM OBSERVATION:

3.4.1. Introduction:

The classroom observations of this dissertation were conducted within the university Belhadj Bouchaib in Ain Temouchent. The participants in the classroom observations included four science educators, and their respective of students L 1 computer science in the science department. Teachers 1,2,3 and 4 taught computer science more especially ("Introduction Probabilistic and Statistical Methods", "SM structure machine", "Algorithm and Data Structure" and "Micro computing") , The purpose of these observations was to gain insights into teaching practices among science educators and their interactions with students, Language Proficiency, student engagement and instructional delivery in English-medium instruction settings.

Table 3.4: classroom observation analysis

Observation Category	Focus Areas	Session1 (TD)	Session2 (TP)	Session3 (Course)	Session4 (TD)
Language Proficiency	Teacher's command of English, Students' use of English In class	Mixing between French, Arabic and some English words (Limited use of English, mostly for specific scientific terms).	Average proficiency in English while doing the best to balance between information delivery and language proficiency. However, they show a good command of English when it comes to coding activities.	Low proficiency focusing on the information more than the language of instruction.	High proficiency in English for both writing and speaking ant do extra efforts to encourage the students to use English for better opportunities.
Instructional Delivery	Teaching methods, Use of English in instruction	Use of English as the primary language for written assignments and reports. use of French predominant in instructions (activities questions in English)	Using both ICT tools (TP) and English scientific words. Students face difficulties in understanding English.	Focus on practical examples and discussions. Friendlier environment. use of French and native language instead of English	Use English for written assignments; encourage them to read English articles. But explaining in Arabic.

Student Engagement	Participation levels, Questions and Commence	High participation levels, with students actively engaging in written assignments and asking insightful questions in English but in Arabic(Darija)	Students participate and ask many question but in French or Arabic	Majority of students were active during the session and they asked many questions because they were preparing for the exams and they did not mind the language used.	Students were distracted during the session but once they participate they use the local language
Teacher Student interaction	Communication style, Feedback	Limited use of English for feedback, mostly in written form. language delivery is direct and engaging	Minimal use of English for feedback, with a focus on Arabic	More effective, with clear feedback on improvements and areas for growth .while using Arabic or French	Highly effective, with detailed feedback and encouragement, focusing on both English proficiency (in writing) and scientific understanding.
Overall observation		The classroom settings that have been observed in these classroom observations reflect a wide range of language proficiency and instructional approaches among science educators. While some instructors show a strong dedication towards improving the use of English, others encounter difficulties in finding a balance between delivering information and fluency. The levels of student engagement also differ, by language barriers hindering their participation. Effective communication between teachers and students is essential, with clear feedback and student encouragement. These observations emphasize the complexities associated with transitioning to English as the medium of instruction in Algerian universities			

3.5. INTERPRETATION OF RESULTS:

The analysis of interview transcripts, survey responses, and classroom observations revealed several important findings regarding the language skills and teaching methods of science educators in our university .One common theme Across all data sources emerged regarding the challenges faced by educators in navigating language barriers, particularly in the context of English-medium instruction. Notably, it was observed that the transition to English as the medium of instruction posed significant challenges for science educators, due to its rapid pace and complexity. This transition necessitated time for educators to adjust and connect into the new language requirements. Furthermore, in today's globalized world, competency in English is increasingly requested, especially for researchers, as it serves as the main language of academic discussions and sharing knowledge. Despite these obstacles, teachers demonstrated a strong commitment to improve their teaching abilities and to support the students with the available sources, to address language barriers in education. And taking into consideration the Research Questions to what extent do teacher's attitudes and beliefs about language instruction change after participating in the in-service training program? ,science educators and the classroom observation results showed clear vision about the application , it lacked opportunities for hands-on practice and feedback that could majorly aid in the learning processes ,and to improve the implementation of the English language as EMI in higher education , moreover to the insufficiency in the resources and time and lack of motivation ;and for the second one after completing the in service training program, to what degree do teachers demonstrate increased support for English language instruction ? , the efforts showed when the classroom observation was conducted; several educators wrote in English, it was either in tests, classroom activities, homework or at coding on computers.

We proposed these two hypotheses at the beginning of this dissertation to reach reliable answers and effective results, and the following hypotheses suggested are:

1. Educators who sustained resources after their initial training gained effective integration into their classroom.

2. The lack of teachers' academic exposure to the English language and the insufficiency of motivation may occur due to obstacles in the classroom

The educators faced major obstacles in improving their teaching abilities due to insufficient resources, time constraints, and lack of motivation. These challenges are attributed

to limited exposure to English in academic contexts and low motivation levels, which is in line with the research findings this emphasizes the necessity for additional practical training and support to improve the quality of English language instruction in higher education.

The two hypotheses were suggested before the research tools were applied but after examining the key findings, we came to conclusion that our analysis, corresponds with the second hypothesis more effectively with the outcomes, concisely summarizing the deficiencies apparent in the in-service training program.

The results of this research align with prior studies that have been examined to identify research articles that specifically investigate language transitions in higher education and changes in language policies. These articles delve into the difficulties and consequences associated with shifting to a different language of instruction, especially in multilingual environments. Furthermore, studies that have explored the complex dynamics of language policy as mentioned previously with Dippold (2015)" demonstrated that most institutions do not discuss issues of language in learning and teaching explicitly, do not provide support for students for dealing with the speaking demands of the classroom, and do not provide guidance and good practice guides for tutors to support English as a second language (ESL) students" (Heron et al., 2021,p252), and implementation of English (EMI) in multilingual educational settings was significantly and continuously highlighted in   Various literatures uncovering the obstacles faced by teachers, as addressed by Gross et al. (1971) "found that teachers' will to implement the imposed change declined over time because the change was not supported by their education directors in ways that impacted them" (Wang, 2008,p2). And this is mentioned in our results where teachers lost motivation to continue due to several reasons such as lack of time, low motivation, rapid and major shift that made adapting to teaching methods to meet the diverse needs of students more difficult, Moreover Researchers (Gross et al., 1971; Spillane et al., 2002) explored that "Teachers face various obstacles when it comes to implementing new initiatives. These obstacles include a lack of clarity about the innovation, insufficient knowledge and skills to adapt to the new initiative, a shortage of necessary instructional materials, organizational arrangements that are incompatible with the innovation, a lack of motivation among staff members, teachers' existing knowledge, beliefs, and experiences, differing interpretations of policies, and a misunderstanding or superficial understanding of the policies. All of these factors can hinder teachers from effectively implementing the intended curriculum policies. (Wang, 2008,p3),and as delivered in the first chapter where the frame for theoretical study was set historical and political can also be the causes of this linguistic shift

,and according to a similar study by Wilkinson (2012), such rapid development of EMI "has been driven by economic, social and political forces, and sometimes even educational" (p.3).

This study presents fresh perspectives by examining these challenges within the specific context of the Algerian educational system, focusing on the viewpoints and experiences of science teachers. Through this specialized investigation, the study enhances the academic discussion on language education, providing detailed insights that can guide the development of policies and teaching approaches designed for the Algerian context.

3.6. SUGGESTIONS AND RECOMMENDATION:

Based on the results of this investigation, the researcher has provided some insightful recommendations and proposals for a successful transition. The upcoming section will detail a selection of the proposed recommendations and suggestions.

- Develop a Comprehensive Transition Plan: Create a detailed plan that outlines the steps, timelines, and resources needed for the transition. This strategy should be developed in collaboration with educators, students, administrators, and the wider university community.

- Language Proficiency Training: Provide comprehensive language proficiency training for educators, by using various options such as workshops, online courses, and language exchange programs.

- Develop or adapt teaching materials to be more accessible to English learners, including simplified language, and multimedia resources.

- Begin the transition with Basic English language skills and gradually integrate more complex scientific terminology.

- Offer English language courses tailored to the needs of science students, focusing on academic English and scientific vocabulary.

- Use technology to support the transition, including online learning platforms, language learning apps, and digital resources for scientific research.

- Provide sufficient financial and human resources to support the transition, including funding for language training, curriculum adaptation, and additional support services.

- Collaborate with international universities and consider exchange programs for students and educators. This opportunity can offer significant exposure to scientific education and best practices in the English language.

- Assess students regularly to monitor the progress of the transition and the impact on learners.

- Collaborate with English department and create commune activities.

- Develop a smooth communication with All the involved.

3.7. LIMITATION OF THE STUDY:

Despite the valuable results of this study, several limitations were encountered that may have impacted the interpretation of the findings. The first one is the small sample size restricted the diversity of the data collected limiting the study's ability to generalize its findings to a larger population of teachers. Additionally, the limited number of classroom observation sessions limited the depth and range of data that could be gathered, this might have affected the study's ability to capture the full range of student engagement and academic performance outcomes as well as to observe the nuances of classroom dynamics and teaching strategies in real-time. The outcomes of this research might be influenced by contextual factors that are specific to the higher education system in Algeria, such as cultural norms, historical background, and government policies. While efforts were made to account for these factors in the interpretation of the findings, it is crucial to exercise caution when applying the results to different educational settings. Additionally, time constraints posed a significant challenge, limiting data collection to just one academic year. This timeframe might have precluded the study from capturing long-term educational dynamics or observing changes in language proficiency and teaching methods over a more extended period.

These factors combined could have influenced the study's conclusions suggesting a need for future research by highlighting the need for future research that can span multiple academic years to provide a more comprehensive understanding of the subject matter.

3.8. CONCLUSION:

This chapter focuses on presenting a comprehensive analysis of the data gathered through various research methodologies, primarily utilizing a questionnaire and interviews. It serves as a critical examination of the research hypotheses, offering a detailed discussion and interpretation and insightful recommendations. The chapter is structured to not only report the findings but also to delve into the implications of these findings, providing a deeper understanding, it stands as a testament to the potential of research to inform and guide educational practices.

GENERAL CONCLUSION

General conclusion:

This study delved into the intricate process of fostering   English as the language of instruction in Algerian universities, taking into account historical, linguistic, political and educational factors. Chapter one delved into Algeria's colonial past, language challenges, language policies, and the country's diverse linguistic landscape. It also explored the global prominence of English, the government's decision and program to adopt it in higher education, and comparative analyses of other nations undergoing similar linguistic changes.

The second chapter concentrated on the research methodology, outlining the research design, structured interviews, and questionnaire as the primary research instruments. It addressed each question and its objective moreover indicating the data procedure and data analysis. In order to investigate into the difficulties faced by educators in terms of in-service training. Data was gathered through three interviews with English teachers instructing science educators, surveys of science educators, and classroom observations. The results underscored significant obstacles, indicating that a more gradual and thoughtful approach was needed for successful adaptation.

The third chapter conducted a comprehensive analysis of the gathered data, interpreting the findings from the research tools. The analysis illuminated the consequences of this linguistic transition, focusing on the necessity for extended adjustment periods and comprehensive training initiatives. Recommendations were put forth to improve the efficacy of the gradual transition, such as sustained assistance, resource management, and to involve multiple layers of variables and considerations that will make the integration of EMI more efficient.

In conclusion, while the shift to English offers potential advantages for Algerian higher education, it demands more taught full planning, substantial resources, and continuous support to ensure an effortless and successful implementation.

APPENDICES

Appendix: A

English teacher's interview:

Our research exploring the transition from French to English in Algerian universities, particularly focusing on the role of English teachers. Through this discussion, we aim to gain valuable perspectives that will further enrich our understanding of the challenges, strategies, and outcomes associated with this significant change in higher education.

1-How do you integrate language instruction within the context of scientific disciplines during your training sessions?

2-What are the typical challenges you encounter when teaching English language skills to science educators, and how do you address these challenges?

3-In your experience, what level of English language proficiency do science educators generally possess?

4-How does this impact their teaching or communication in scientific contexts?

5-How important do you consider English language proficiency for science educators, and how does it affect their professional development or advancement?

6-Do you tailor your language instruction methods differently for educators in different scientific disciplines? If so, how do these adaptations manifest?

7-Can you provide examples of how you modify language instruction to suit the needs of science educators in various fields of study?

8-What outcomes or changes do you observe in science educators after undergoing your language training programs?

9-How do you measure or evaluate the effectiveness of your language instruction in enhancing educators language skills within their scientific disciplines?

Appendix: B

Science educator's questionnaire (English version):

Algerian education language shift from French to English:

This survey aims to gather information about science educator's attitudes, their preferences, needs and challenges, regarding the use of English as the language of instruction in science education. Thank you so much for your collaboration.

Section one: Educational Background and Language of Instruction

Haut du formulaire

1/What is your current level?

o   Teaching assistant

o   Junior lecturer(mcb)

o   Senior lecturer(mca)

o   Professor

2/What was the language of instruction when you studied at university?

o   Standard Arabic

o   English

o   French

3/What do you think about the use of English instead of French in teaching scientific modules?

o   Helpful

o   Good idea but not the right time

o   Unnecessary

4/Do you think that your educational background could effect your performance?

o   No

o   Yes. i Am not familiar to English

5/if yes do you believe that with a good training you could overcome the problem?

-

Section two: Implementation and Support

6/Do you think that you have received sufficient resources and support to effectively teach in English?

o   Yes

o   No

7/if no, what was missing?

-

8/Have there been changes in the curriculum for science programs following the shift to English?

o   Yes

o   No

9/Have you observed any differences in student engagement and performance since the transition?

o   Yes

o   No

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10/Have you applied any strategies to bridge language gaps and ensure effective communication with students who may not be fluent in English?

o   Yes

o   No

11/if yes, can you give as an example?

Section3: Pedagogical Strategies and Challenges

12/Are there any specific strategies or tools you have found effective in promoting language acquisition alongside scientific knowledge?

13/Has the transition impacted the relationship between you and the students, particularly in terms of communication and interaction in the classroom?

Yes

No

14/How do you balance the need to teach specialized scientific terminology in English while ensuring students have a strong scientific knowledge?

Appendix: C

Science educators interview (French version):

La transition linguistique dans l'éducation algérienne du français à l'anglais

Ce questionnaire vise à recueillir des informations sur les attitudes, les préférences, les besoins et les défis des enseignants en sciences concernant l'utilisation de l'anglais comme langue d'enseignement dans l'éducation scientifique.

Rubrique un : Parcours éducatif et langue d'enseignement

1/Quel est votre niveau actuel ?

o   Assistant d'enseignement

o   Maître de conférences (MCB)

o   Maître de conférences (MCA)

o   Professeur

2/Quelle était la langue d'enseignement lorsque vous avez étudié à l'université ?

o   Arabe standard

o   Anglais

o   Français

3/Que pensez-vous de l'utilisation de l'anglais plutôt que du français dans l'enseignement des modules scientifiques ?

o   Utile

o   Bonne idée mais pas le bon moment

o   Inutile

4/Pensez-vous que votre parcours éducatif pourrait affecter votre performance ?

o   Non

o Oui... Je ne suis pas familier avec l'anglais

5/Si oui, croyez-vous qu'avec une bonne formation, vous pourriez surmonter le problème ?

o Oui

o Non

Rubrique deux : Mise en œuvre et soutien

6/Pensez-vous avoir reçu suffisamment de ressources et de soutien pour enseigner efficacement en anglais ?

o Oui

o Non

7/Si non, qu'est-ce qui manquait ?

8/Y a-t-il eu des changements dans le programme d'études

o Oui

o Non

9/Avez-vous observé des différences dans l'engagement et les performances des étudiants depuis la transition ?

o Oui

o Non

10/Avez-vous appliqué des stratégies pour combler les écarts linguistiques et garantir une communication efficace avec les étudiants qui ne maîtrisent pas bien l'anglais ?

o Oui

o Non

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11/Si oui, pouvez-vous donner un exemple ?

Rubrique trois : Stratégies pédagogiques et défis

12/Y a-t-il des stratégies ou des outils spécifiques que vous avez trouvés efficaces pour promouvoir l'acquisition linguistique en parallèle avec les connaissances scientifiques ?
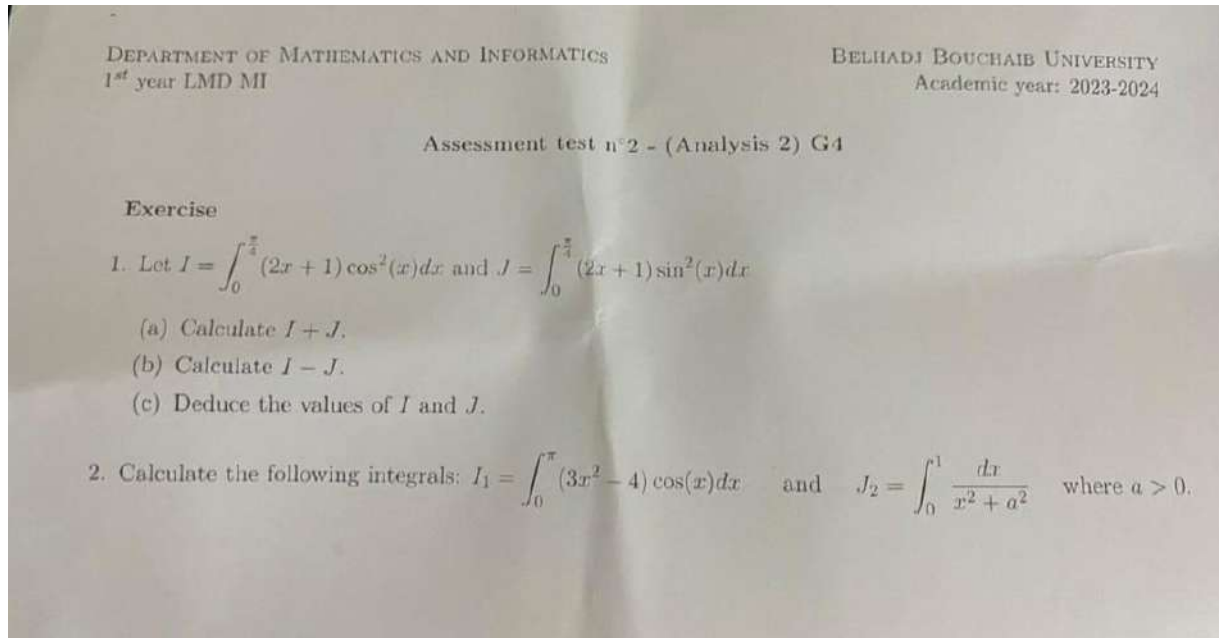

13/La transition a-t-elle impacté la relation entre vous et les étudiants, notamment en termes de communication et d'interaction en classe ?

o   Oui

o   Non

14/Comment équilibrez-vous le besoin d'enseigner le vocabulaire scientifique spécialisé en anglais tout en garantissant que les étudiants possèdent une solide connaissance scientifique ?

Appendix: D

A test that was done by one of the teachers during the classroom observation

DEPARTMENT OF MATHEMATICS AND INFORMATICS
1st year LMD MI

BELHADJ BOUCHAIB UNIVERSITY
Academic year: 2023-2024

Assessment test n°2 - (Analysis 2) G4

Exercise

1. Let $I = \int_0^{\frac{\pi}{4}} (2x + 1)\cos^2(x)dx$ and $J = \int_0^{\frac{\pi}{4}} (2x + 1)\sin^2(x)dx$

   (a) Calculate $I + J$.
   (b) Calculate $I - J$.
   (c) Deduce the values of I and J.

2. Calculate the following integrals: $I_1 = \int_0^{\pi} (3x^2 - 4)\cos(x)dx$ and $J_2 = \int_0^1 \frac{dx}{x^2 + a^2}$ where $a > 0$.

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