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Option: Linguistics

**Investigating Teachers' and Students' Attitudes towards the Use of English as the
Medium of Instruction in the Scientific fields
The Case of Second Year Students and Teachers of Biology, University of 08 Mai
1945, Guelma**

**A Dissertation Submitted to the Department of Letters and English Language in Partial
Fulfillment of the Requirements for the Degree of Master in Language and Culture**

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DEDICATION I

In the Name of Allah, the most Merciful, The Most Passionate

This dissertation is dedicated to:

My parents who have taught me to fight, to win, enjoy the taste of success, but never to give up.

To the one who taught me the meaning of patience, to the wonderful woman in this world: **My dear Mother**

To the person who always makes me proud of myself

To the most respectful man in this world: **My dear Father**

To my dearest **brother** and **sisters**

To **my dearest friend** who stands with me all the time, thanks for being sympathetic and kind to me.

To these special names in my life I dedicate this work

Bourenane Djihane

DEDICATION II

In the Name of Allah, Most Gracious, Most Merciful

I dedicate this modest work to:

Myself

My beloved family

To the “Queen of hearts”, dear mother ‘**Moufida**’, for her endless love,
sacrifice and support.

To the best father in the world, dear father " **Samir**" who had always
believed in me.

My brothers ‘**Ayoub & Raid**’

To my supervisor ‘**Mrs. Chereit Meryem**’

To all those who have been helpful, caring, and patient, I dedicate this
simple work.

Benassou Khaoula.

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Abstract

This work tries to investigate the attitudes of teachers and students towards using English as a medium of instruction in the scientific fields. To achieve this aim, the present research adopts a combination of qualitative and quantitative method. In order to gather data about students' and teachers' Attitudes, a questionnaire was administered to one hundred (100) second year students of biology at Guelma University in addition to an interview that was conducted with five (5) teachers in the same department. The analysis of results revealed that both students and teachers are conscious of the importance of the English language, they accept to use this language instead of French in the Algerian universities. Moreover, the majority of the participants had positive attitudes towards using English as a medium of instruction in the scientific fields. On the basis of these findings, this inquiry suggests some pedagogical implications for learners, teachers, and policymakers to aid them in the process of applying English as a medium of instruction in the scientific fields of study.

Key words: English as a medium of instruction, teachers' attitudes, students' attitudes, scientific fields, biology.

List of Abbreviations

EFL: English as Foreign Language

EMI: English as a Medium of Instruction

ESP: English for Specific Purposes

LMD: License Master Doctorate

Q: Question

%: Percentage

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General Introduction

The spread of English as an international language can be regarded as one of the various metamorphoses that globalization initiates in today's world. It is regarded as the international common tongue. Indeed, this language proved its efficiency in all domains: technological and scientific inventions, medical development and even to set a global understanding of different situations, phenomenon and issues. Being one of the most important sources of knowledge, academic research and change, the Algerian universities should not be immune from such beneficial adaptation and should highly consider the use of this language. Algerians believe that it is past time to break up the presence of the French language in Algeria on the grounds that it was of the colonizer and that it is not an international business language. Tayeb Bouzid, the ex-Minister of Higher Education and Scientific Research launched a survey on the replacement of French by English in higher education. Thus, he stated that we should attempt to put in place the required procedures within the scope of university educational institutions and to reinforce the use of English in research since English is the language of international networks and scientific publications.

1. Statement of the Problem

Despite the fact that teaching English has become a major concern for the educational policy of many countries due to its importance and status in the world, it is still taught as the second foreign language in Algerian middle and secondary schools while French is taught as the first foreign language. The status of French in Algeria was a result of historical events related to the French colonization in Algeria for 132 years. Many people consider it as their second language, it is taught as a subject and as the first foreign language, starting from the third year in primary

school. Besides, French is still the language of instruction in the majority of scientific disciplines in the Algerian universities and has remained the language with higher social status and prestige.

In recent years, due to many political reasons, Algerian policy makers showed more interest in enhancing English language Teaching and a tendency towards a gradual abundance of the use of French. Among these suggestions is integrating English in the Algerian primary schools and using it as the main medium of instruction in the scientific fields in the Algerian ongoing universities.

This change in the educational policy raised public debates among teachers and students who might have different opinions towards this new orientation in teaching. Accordingly, the present research aims at exploring teachers' and students' attitudes towards the use of EMI of instruction in the department of Biology as one of the scientific fields in the university of 8Mai 1945-Guelma.

2. Research Questions

The present research is intended to answer the following questions:

1. what are the attitudes of teachers and students of biology toward using EMI?
2. what are the benefits that EMI may bring to Guelma university?
3. What challenges, if any, are associated with using EMI in scientific fields?
4. What are the educational changes that could be implemented to overcome these problems?

3. Aims of the Study

This study seeks to investigate the different attitudes and perspectives of Algerian students and teachers towards having EMI in the scientific fields. Secondly, it attempts to figure out the difficulties that may face students and teachers while using EMI. In addition to that, the study sheds light on the advantages of integrating English in the teaching/learning process in the scientific studies.

4. Research Methodology and Design

4.1. Research Method

In order to investigate teachers' and students' attitudes towards the use of EMI in the scientific fields, the present research required the use of quantitative and qualitative descriptive methods.

4.2. Population and Sampling

The population of the current study consists of second year students and teachers of biology at the University of 8Mai 1945-Guelma. The sample is selected randomly, it is composed of one hundred (100) students out of a population of 160 students, in addition to five (05) teachers. The reason behind choosing them as the population of the study is that they have enough knowledge and background of the English language, and they have already experienced one year studying in French. Eventually, they are aware of the difficulties that may face them when replacing French with English as a medium of instruction. Hence, they would help in collecting more reliable data.

4.3 Data Gathering Tools

The current study is conducted to check the validity of the research questions. The students' questionnaire and teachers' interview would provide enough information about the different perspectives and attitudes of teachers and students towards using EMI in the scientific fields. A total number of one hundred (100) second year students and five (05) teachers at the Department of Biology, 08 Mai 1945 university of Guelma, participated in answering the questionnaire and the interview as the tools used to carry out this study. Therefore, they are the appropriate tools to gather data about students' and teachers' attitudes behind using English as the language of instruction.

5. Structure of the Dissertation

The dissertation is divided into theoretical and practical parts that comprise three chapters. The first chapter deals with EMI and its importance for the teaching and learning process, its benefits, and the challenges that may face teachers and students of scientific fields. The second chapter is devoted to cover the meaning of attitude, its types, and its importance in EFL teaching and learning. Whereas, the third one is the field of investigation that provides a detailed description of the student's questionnaire, the teachers ' interview, and a discussion of the main findings of both of them. In addition to that, the chapter clarifies some limitations of the study and provides pedagogical implications for teachers, students, and policy makers.

Chapter One: English as a Medium of Instruction

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Introduction

The English language has established itself as a global language of communication. It is now used as a lingua franca by people from all over the world with diverse linguistic and cultural backgrounds. Along with the global importance of English, the notion of EMI has become a growing global phenomenon in the present-day academia. The use of EMI at tertiary level of education has been the subject of considerable debate in recent decades. Therefore, the aim of the present chapter is to discuss the importance of EMI in the educational system. It will review the growth of English to become a medium of instruction. Secondt, this chapter deals with EMI definition, its growth, and challenges for EMI lecturers. It provides the benefits and the effects resulted from using English as a medium of instruction. Finally, it sheds light on the place of EMI in the Algerian context.

1.1. Definition of English as Medium of Instruction (EMI)

The medium of instruction in higher education has conventionally been the local language of the country where the institutions operate, and it continues to be the learners' mother tongue in many parts of the world. Recently, however, English is increasingly used as the language of instruction more than ever before in Europe and many other countries (Dearden ,2014; Doizet al., 2013). For Graddol (2006), the spread is to the extent that more than half of international students are now taught in English. This is because English is widely used for the dissemination of research results in books, journals, and conferences (Mauranen et al., 2010).

The definition of English as a medium of instruction (EMI) varies according to the context in which it is adopted. For the purposes of this study, Hellekjaer (2010) stated that EMI is acknowledged as a practice in which non language courses, for instance medicine, physics or

political science are taught in English to students for whom it is a foreign language. As often as not, it is also taught by a lecturer whose first language is not English (L1) (p. 11). Besides to that, Macaro (2018) defined EMI as “the use of the English language to teach academic content (other than English itself) in countries or jurisdictions where the first language (L1) of the majority of the population is not English” (p.19). That is to say, there appears to be a fast-moving worldwide shift, in non-anglophone countries, from English being taught as a foreign language (EFL) to English being the medium of instruction (EMI) for academic subjects. Nicola and Heath (2021) gave alternative definitions that have sought to widen the scope of what is labelled as EMI to be inclusive of Anglophone contexts, given that the rising number of L2 English speakers in such universities have created multilingual educational contexts; although the extent to which such contexts are comparable is still hotly debated (p. 2).

The importance of English language development in EMI contexts has sparked debate, as well as whether or not the present definitional scope is too restricted in excluding English medium educational practices in Anglophone settings. Pecorari and Malmström (2018), for example, observed that some members of the EMI research community interpret EMI more broadly to include "contexts in which English is a dominant language and in which English language development is supported and actively worked for"(p. 507). Similarly, Baker and Hüttner (2016) stated that excluding Anglophone contexts from EMI is ‘unhelpful’ by failing to include the experiences of multilingual students in Anglophone universities who learn through their L2 (p. 502). Dafouz and Smit (2016) prefer the term English-Medium Education in Multilingual University Settings (EMEMUS), because the ‘label is semantically wider, as it does not specify any particular pedagogical approach or research agenda’ (p. 399).

For now, Dearden (2015) reported that EMI is a growing global phenomenon in all phases of education and educational settings. EMI is arguably an umbrella term for academic subjects taught through English, one making no direct reference to the aim of improving students' English. It is a term used across the world and usually in higher education (HE). For that reason, Lasagabaster et al. (2014) indicated that Globally more and more universities are caught up in the rush to offer both undergraduate and postgraduate programs through the medium of English.

1.2. The Growth of EMI

English as a medium of instruction (EMI) is a global educational phenomenon that is quickly expanding throughout educational systems worldwide and has become one of the most significant trends in Higher education. In non-anglophone nations, there appears to be a rapid movement from English as a foreign language (EFL) to English as the medium of instruction (EMI) for academic topics such as science, mathematics, geography, and medicine.

Crystal (2003) noted that beginning with the pioneering expeditions to the Americas, Asia, and the Antipodes, the historical story recounts the migration of English across the world. It was an expansion that continued with nineteenth-century colonial activities in Africa and the South Pacific, and which took a major stride forward when it was chosen as an official or semi-official language by numerous newly independent nations in the mid-twentieth century. Every continent currently has an English-speaking population, as well as islands in the three major seas — the Atlantic (St Helena), Indian (Seychelles), and Pacific (Seychelles) (in many islands, such as Fiji and Hawaii). This spread of representation makes the application of the label 'global language' a reality.

Moreover, the rise of British colonial power, which peaked at the end of the nineteenth century, and the development of the United States as the world's dominant economic power in the twentieth Century are the major causes of English's world's current dominance. Most pre-twentieth century critics would have had no problem responding to the question « Why World English? » with a single, political explanation. Pitman (1873) said that 'since The British Empire spans about a third of the earth's area, and British subjects account for nearly a fourth of the world's population,' (p. 289) to validate his projections regarding English being the language of the future.

The expansion of English over the world, particularly in the second half of the twentieth century, has never been seen before. Ferguson (1982) in his introduction to the first edition of the volume "The other tongue" (as cited in Krashru 1992) stated that:

There has never been before a single language which has spread [as lingua franca]

Over most of the world, as English has done this century [...]. The spread of English is as significant in its way as the modern use of computers. (n. p)

This means that, English play an important role in the world and it became the language of technology and internationals. Krashru (1992) stressed the unique international position of English which is certainly unparalleled in the history of the world. For the first time a natural language has attained the status of an international (universal) language, essentially for cross-cultural communication (p. 67). That is to say, English is a universal language that helps people to connect and communicate with other cutlers all over the world.

Additionally, the spread of English appears to be speeding. Graddol (1997) predicted that the number of 'native' or 'first language' (L1) speakers would drop while the number of second language (L2) speakers would rise. In the same regard, Crystal (1997) estimated that there were

roughly 33.7 million L1 English speakers in 56 countries, with L2 speakers believed to be between 1.2 and 1.5 million. Simply, this means that English is a global language that is spoken and understood at international level by a wide variety of people.

As a result, English is the language of a large portion of the world's knowledge, particularly in science, technology, education to provide access to knowledge. Education is one of the most important factors that lead many countries have made English their official language or selected it as their primary foreign language in schools in recent years. Thus, for what been discussed above, Macaro et al. (2018) confirmed that it is now well established that in higher education EMI is growing at a very fast rate and in most countries around the world (p. 36).

Wanphet and Tantawy (2018) noted that across the world, English has progressed from a second language (L2) to the language of academic fields in higher education (p. 145). As a result, Subjects such as Science, Mathematics, Geography and Economics are being taught through the medium of English – known as English Medium Instruction, or EMI.

1.3. The Importance of EMI

Graddol (2006) emphasized that English is utilized as an Educational Medium of Instruction (EMI) to provide greater options for institution's development, besides to that, English is an international language that is used by the majority countries in communication, business, education, diplomacy, technology, and international organizations. Many countries agree to use English as a global language (p. 87).

English has an important position in the world, it spreads widely in each country, no matter the area or information transfer. As the specification of a global language, it essentially refers to a language that is learned and spoken internationally. Crystal (2003) mentioned that according to

the number of English-speaking calculations, English is the official language used by most countries, it is the most widely used second language in the world, and the percentage of web pages with English content is estimated to be over 50%.

Wanphet and Tantawy (2018), confirmed that EMI is used in many other countries as an internationalization strategy in higher education. It has evolved from being foreign language or L2 to the language of academic disciplines in tertiary education. So that, a major outcome of international colleges particularly in terms of internationalization is the adaptation of English as a medium of instruction for all the study programs. Furthermore, Doiz et al. (2013) declared that English-medium domination is deeply rooted in social, economic, and technological development as well as in international communication due to the results of globalization noticed in more English medium programs in higher education institutions. As a result, all foreign colleges, as well as international programs of faculties and higher education institutions use EMI to implement their course curriculum as an internationalization approach. Because of its great importance, EMI is being promoted in some countries by policymakers, administrators, teachers, and parents as a certificate to today's world who see EMI as a mechanism for internationalizing their education offerings, allowing students to participate in a global academic and business community, they consider EMI as a means of rapidly increasing global mobility and a way to strengthen their home country's English language capacity ensuring that their home students can compete in a global market.

Additionally, according to Luangangoon (2020), the development of English as EMI is of great interest to language policy researchers in an era of globalization and internationalization. Despite the recognition of some implementation problems and constraints, EMI has been widely introduced into various non-native English-speaking countries. As a result, some foreign colleges,

as well as international programs of faculties and higher education institutions use EMI to implement their course curriculum as an internationalization approach.

English becomes a basic method of second language learning / teaching, a source of current information and scientific research, and a means of worldwide communication and earning a livelihood in a huge number of nations. Using English as a medium of instruction offers a lot of benefits. Thus, Karvonen (2017) argued that one of the benefits of using EMI is giving better accessibility of English materials as well as the existence of better curricula (p. 28). In this regard, he also mentioned that both the students and the teachers have better resources or references available in the English language, more specifically, they have access to international websites and books written in English (p. 28).

Karvonen (2017), added that using English as a medium of instruction offers better job opportunities and career development (p. 28). Accordingly, a separate test to check someone's English fluency is required for the majority of good government jobs. By using English as a common language, one may interact with consumers and sellers from all over the world, allowing one to grow their business and earnings. For instance, Kassim and Ali (2010) in a Malaysian study of professionals working for multinational companies found out that oral communication skills in English are essential in the workplace (p. 168).

Baso (2014) reported that in one Indonesian study which investigated how employers of multinational companies operate in the oil and gas sector, English is an essential skill that they look for in applicants and they are willing to train them for such a skill if newly hired employees "do not meet the standards" (p. 50). The study highlighted that there could be a disconnect between what is offered in the English language curriculum and the language demands in the workplace.

In addition, Karvonen (2017) mentioned that the use of English as a medium of instruction was seen to help the students communicate with diverse people and to make interaction with the international community easier (p. 29). English as a common language would help everyone to communicate better.

1.4. The Challenges Related to Lecturers

Despite the benefits of having English as a medium of instruction, there are many controversies among teachers regarding the implementation of EMI in content teaching. Bradford (2016) Proposed four categories of challenges found in EMI, namely linguistic Challenges, cultural challenges, structural challenges, and identity-related (institutional) challenges.

Linguistic challenges are those related to language issues that both lecturers and students in EMI programs face. According to Hellekjr (2010), these problems are frequently encountered by non-native students, who struggle to understand native lecturers accented English and have difficulty in understanding lecture content delivered in English in general. They also face numerous challenges in EMI, where they are unable to comprehend published academic literature in the English language due to their insufficient English proficiency. As a result, students' low English proficiency causes them to participate in class at a low level during the lesson. This issue in the teaching and learning process becomes a challenge for the teacher because they must consider how students with low proficiency will catch up with the lesson.

Bradford (2016) defined cultural challenges as a mismatch between the characteristics and expectations of students outside the country and those from within. These challenges are highly influenced by the experience of EMI lecturers and teachers. For instance, and according to King (2013), a speaker from Britain may be familiar with a showing conveyance style that is profoundly

intuitive while such a style is not viewed as the dominating dynamic in Thailand college where the students prefer to be passive learners. Besides, Negash (2006) confirmed that when the medium of instruction is English, curricula and learning materials are often adopted from other language and cultural settings, which can make them both inadequate regarding the language level of the students as well as culturally irrelevant for the local students (p. 33).

Another type of cultural challenge is cultural anxiety about EMI and the associated perceived superiority of English instruction to the detriment of local languages, which appeared to occur particularly in countries where domestic « minority » languages had previously been subjugated. Splunder (2010) exemplified that in Flanders, Belgium, Dutch was not recognized as an official language until 1930, and French dominated scientific and cultural life for a century or more.

Bradford (2016) added structural challenges which are related to overall programmatic coherence and included issues related to an insufficient number of EMI courses and support staff cannot work with diverse populations (p. 4). Furthermore, Byun et al. (2011) indicated that potential EMI lecturers are hesitant due to a lack of confidence caused by a lack of training or a lack of financial incentive. Concerning lack of confidence, there is an overlap with the previously mentioned linguistic challenge, with a vicious circle of administrators and potential EMI lecturers assuming that very high proficiency levels are required to teach EMI courses, but with little or no institutional assistance to achieve such levels.

Finally, according to Bradford (2016) the identity-related (institutional) challenge is related to how the EMI program is perceived from outside and the identity of the EMI program, the lecturers who are teaching the EMI program, and the students' enrollment (p. 12). Institutional identity, particularly the preoccupation with how it is perceived by the rest of the world such as in world

rankings, appears to be a growing concern among higher education institutions seeking to internationalize as a key driver of EMI policy (Knight, 2015).

1.5. Challenges Related to Teachers

1.5.1. Teacher's Quality

In many EMI settings, teachers' insufficient professional use of English has become widely recognized as one of the major factors contributing to negative outcomes. Besides, teachers play a fundamental role in their learner's academic achievement and their quality can highly influence student outcomes. Teacher's quality is one of the challenges in implementing English as a Medium of Instruction. According to Mellion (2008) a « threat » was posed by a lack of teacher proficiency, which resulted in communication breakdowns, loss of rapport, and a lack of discussion in the classroom.

1.5.2. Guidelines

The Guidelines' impact on the quality of the teaching and learning process is undeniable. Dearden (2014) discovered that 60 percent of the 55 countries studied have no guidelines for implementing EMI, while only 27.3 percent have guidelines. However, Manh (2012), and Sert (2008) insisted that the lack of guidelines leads to a misalignment between goals and actual implementation. Dearden (2014) discovered that 76 percent of respondents reported that their country did not have written guidelines stating whether or not English should be the only language used in the EMI classroom. This fact causes confusion about whether teachers use English-only or code-switching, and it has sparked a debate. According to Hughes et al, (2008), when a speaker is not fluent in the target language, code-switching allows them to continue speaking.

1.5.3. Resources

Vu and Burns (2014) discovered that teachers faced challenges in the classroom due to a lack of reference materials and teaching equipment. Resources such as textbooks, activity books, reference books, and teacher books are not available to assist teachers in teaching content subjects in English, despite the fact that these are critical components in the successful implementation of EMI. The resources also assist the teacher in determining how to teach the content subject in relation to several terms used in English. It's also more effective and essential because the teacher doesn't have to spend time looking for appropriate materials for their students. Furthermore, Kaplan and Baldauf (2005) stated that successful implementation of EMI programs necessitates adequate resources and generous funding.

1.6. English in the Algerian Context

1.6.1. Literature Review

1.6.1.1. The Sociolinguistic Profile of Algeria

Algeria, like many other multilingual countries around the world, has a complicated linguistic situation. The presence of diverse languages, which causes some sociolinguistic issues reflects the long colonial experience, the population's multifaceted social and linguistic make-up, and the willingness to meet international language demands. To begin with, Algeria has a long history of invasions and crossroads of civilizations, which has resulted in linguistic diversity. Berbers, also known as Numidians and Imazighen, were the first inhabitants. According to Benrabah (1999), the Imazighen maintained long-term contact with the Phoenician conquerors and traders who settled in North Africa. This contact resulted in the Libyco-Berber language, which Tifinagh used to create alphabets for the modern Touareg. Furthermore, Benrabah (1999) stated that the Roman

occupation of North Africa compelled the majority of Berbers to learn Latin, which already included Libyco-Berber.

The spread of Islam by Arabs around the seventh century had a significant impact on the spread of Classical Arabic. According to Benrabah (1999), mosques and missionaries converted many Berbers to Islam, and as a result, they learned Classical Arabic. Benrabah went on to say that because it was the language of the Koran, this language gained godlike status. As a result, the majority of Berbers who converted to Islam became Arabic speakers, and the new religion provided the Arabic language with the opportunity to pervade widely in different spheres of society.

From the fifteenth century to 1830, the majority of Algeria's natives spoke Algerian Arabic and/or Berber. Algerian Arabic, also known as « Derja, » became the first language of the Arabic-speaking population. Because of the influence of indigenous Berber varieties spread during this period, it was a different language than the Middle East Arabic language.

Benrabah, (1999) emphasized that from 1830 to 1962, the French settled in Algeria and gradually and exclusively established their educational system, with the goal of eradicating the Arabic language. The colonial authorities preferred the Kabylia (Berber) population over the Arab population for education, and thus did not prevent the development of the Kabylia language. Since then, French has been introducing its culture into indigenous society, while Arabic traditional schools have disappeared because the majority of these schools have been converted into French schools. Algerians forbade their children from attending colonial schools. The latter, for their part, were not generous in providing such an opportunity for Algerian children to attend the school; thus, the vast majority of the students were European, while Algerians constituted a small percentage and were the children of the bourgeoisie or those who had some tendencies and

loyalty to the colonial authorities. In broad strokes, Benrabah, (2007) stated that French was the official language of colonial Algeria during this time period, Standard Arabic was declared a foreign language in 1938, and the illiteracy rate reached 90% with the declaration of independence in 1962.

Following independence, the languages of daily use were Algerian Arabic, Berber, and French, with Classical Arabic being used only in a few Medersas, which were Coranic institutions such as Mosques, Zaouia, and Katatib where learners learned Koran and literacy skills. According to Benrabah (2007), there were only few trained teachers to teach Classical Arabic at the time, and there were only seven hours of instruction per week. Whereas, Mostari (2004) declared that the French language was recognized as a foreign language in 1976, and it is taught beginning in the fourth year of primary school, while classical Arabic is the country's sole official language. The goal of this policy was to stop the spread of the French language.

Mize (1978) noted that the first step taken to promote English was the establishment of a General Inspectorate of English in 1969. At the time, the ministry of education declared that there was a shortage of English teachers, which is why the ministry brought in some teachers from other countries and launched an action to quickly recruit and train Algerian teachers. Since 1980, Algeria has expanded its economic markets to include some western countries, primarily the United Kingdom and the United States, which have invested in Algeria's oil and gas industries; thus, the need to integrate this language intensively has grown. As a result, many reforms were implemented, including the extension of teachers' training and teaching periods. Furthermore, by that time, there were more English departments at universities opened.

In 1993, a new reform to improve foreign language teaching was implemented at an early age, allowing fourth graders in primary school to choose between French and English as a compulsory

foreign language. At the time, the government sought to promote English, recognizing that it is an international language that allows full membership in the international community, and thus it needed to be taught as early as fourth grade.

However, contrary to the government's intention, most parents chose French over English, arguing that French is widely spoken in Algeria and that their children may struggle to learn a language that has not been given the credit it deserves. Algeria has since initiated a series of changes in order to implement new roles that English may play in this complex linguistic situation. Currently, French is being reintroduced as the first foreign language taught in the third year of primary school, and English has been moved from primary school to the first year of middle school.

1.6.2. The English Language and the University Sector

Using English at higher education institutions and universities for research and pedagogical purposes is viewed as an unavoidable route that policymakers throughout the world should carefully explore. In this respect, Balan (2011) noted that the process of using English in higher education is regarded as "a parallel and unavoidable process resulting in improved international academic communication worldwide" (p.15). According to the same researcher, the benefits of this adoption can be seen in university exchange programs, where learners do not experience any linguistic barriers when conducting research because they have mastered English.

Moreover, teaching and learning English has been transformed by technological advancements. Because of the necessity for broad use of various technology instruments and invention, institutions at the higher education level should consider adopting English as a medium of instruction. The application of this language might be used to help with learning or to open up new possibilities for innovations or discoveries. Some scholars, such as Moursund and Bielefeldt

(1999), thought that the primary benefit of technology is to improve people's lives. As a result, researchers and academics must embrace English in order to use these technologies effectively, as the bulk of technologies are the outcome of studies and research conducted in the English language.

Moreover, English is a means of gaining access to academic and scientific information. The bulk of academic, scientific, medical, and technical publications, such as Elsevier, Nature, Science, and Taylor & Francis, are undeniably published in English. Additionally, knowing English allows learners from all professions to have more opportunities to pursue their studies around the globe. Graduate students who master this language have a better chance of finding work in a variety of fields, including medical, industrial, and technological fields, as well as in international firms.

1.6.3. EMI in Algerian Universities

Algerian society is at a crossroads in its history. Language is a recurrent topic of discussion in the country. Many voices have been raised against the French language since the outbreak of the popular uprising; a language that has been in Algeria for over a century and a half. Algerians believe that it is past time to abolish the existence of the French language in Algeria, claiming that it was the language of the colonizer and that it is not an international business language, and that it should be replaced with English.

This idea of switching a language has been already emerged since Former Minister of Higher Education Rachid Harraoubia (2010) who announced that his department was working seriously on the potential of using the English language instead of French in universities, notably in scientific and technological fields. Recently, in 2019, Tayeb Bouzid, the ex-Minister of Higher Education and Scientific Research called university rectors to support the exploratory process aimed at promoting and expanding the use of English in Algerian institutions. As cited in Ghanmi (2019),

"Within the framework of the policy to encourage and strengthen the use of English to give better visibility of education and scientific activities in higher education, I urge you to use both Arabic and English in official documents"(p. 13). He added "the French language does not get us anywhere" (p. 13). Ghanmi (2019) appended that the decision intended to help English replace French as Algeria's leading foreign language, ignited a passionate discussion regarding the country's strong linguistic and cultural links to France, 57 years after the end of a 130-year French colonial rule.

Since English was regarded as the language of science and technology, it is believed that English as a first foreign language has the potential to help enhance the quality of education in Algeria and promote social growth. Such a significant decision for universities, students, and scientific research necessitates extensive reforms beginning in the primary cycle and a multi-year framework. It is launched by the government without any prior planning. It should also be noted that Algerian education is delivered in Arabic from basic to secondary levels. French is only taught in the third grade, whereas English is only taught for a few hours in the first year at the middle school. As a result, because this is a project that will last several years, academics and experts should establish a long-term plan that considers a variety of factors.

Conclusion

English as a medium of instruction (EMI) is becoming more popular around the world, particularly in higher education. This chapter highlights the importance of EMI as the most geographically widely spoken language in the world. Because of its importance and phenomenal growth, higher education institutions are now eager to offer their programs in English. Despite the challenges that both teachers and lecturers may face, English ends at playing a crucial role in

university rankings and eligibility for government funding and also perceived to help institutions compete globally. In addition, it points up the status of EMI in Algerian higher education.

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Introduction:

Human beings react to their environment in an evaluative fashion. They hold attitudes which refer to feelings, beliefs, and reactions towards an event, phenomenon, objects or a person. Moreover, attitudes can be defined as a positive or a negative affective reaction toward a denotable abstract or concrete object or proposition. This chapter introduces the important issues regarding the attitude concept. First, it discusses the definition of attitude, its types, and the way it is formed. Second, it devotes attention to the content of attitudes. It shows that attitudes have affective, cognitive and behavioral components. Third, it highlights the structure of attitude, its functions, models, and theories. Further, it sheds light on the way attitudes can be measured. Finally, it deals with attitudes in EFL learning and teaching.

2.1. Definition of Attitude

Attitude is a French term that comes from the Italian word *attitudine*, as well as the Late Latin words *aptitūd* and *aptitūdin* (American Heritage Dictionary of the English Language, 2000; Venes, 2001). The term attitude is most often defined as a noun and the following are definitions found in various dictionaries and thesauri.

- “A settled opinion” and “behavior reflecting this” (Abate, 1999, p. 44)
- “Behavior based on conscious or unconscious mental views developed through cumulative experience” (Venes, 2001, p. 189).
- “An enduring, learned predisposition to behave in a consistent way toward a given class of objects, or a persistent mental and/or neural state of readiness to react to a certain class of objects, not as they are but as they are conceived to be” (Dark, 2005).

Some synonyms to the term attitude include orientation, approach, outlook, manner, stance, position, feelings, thoughts, mind-set, way of thinking, and way of behaving, and some related words are opinion, point of view, view, standpoint, line, posture, and pose.

There are a lot of definitions given by different scholars. According to Allport (1935) an attitude is a mental or neural state of readiness that is organized by experience and has a directive or dynamic impact on the individual's behavior to all objects and events to which it is linked. A mentality or a predisposition to respond in a specific way owing to both an individual's experience and temperament is a simplified definition of attitude. Bruvold (1980) also defines an attitude as a positive or negative emotional reaction to a denotable abstract or tangible object or proposition. Along with, Zinbardo (1998) defined attitude as acquired judgments about the acts that are suitable for specific categories of persons or situations. Attitudes are typically stable, yet they may be altered.

In addition, Adewuyi (2006) regarded attitudes as individualistic, an abstract entity, and a type of intervening variable introduced in order to explain regularities in behavioral responses. While, Eagly and Chaiken (1993) defined attitudes as "a psychological tendency expressed by evaluating a particular entity with some degree of favor or disfavor" (p. 1). This concept includes the idea that reporting an attitude entails making an evaluative judgment about a stimulus item. To put it another way, reporting an attitude involves making a decision about liking vs. disliking, approving vs. disapproving, or favoring vs. disfavoring a specific issue, object, or person.

2.2. Components of Attitudes

According to Wood and Wood (1993), attitude is a relatively stable evaluation of a person, object, situation, or issue. They defined attitude as having three components: cognitive, affective or emotional, and behavioral.

Thoughts and beliefs about the attitudinal object comprise the first cognitive components. In other words, the cognitive component of attitude represents a person's knowledge about what is true or false, good or bad, desirable or undesirable, held with varying degrees of certainty.

The second is the emotional component of attitude which is made up of one's feelings toward the attitudinal objects. It is also known as the affective component because, under a certain condition, the belief has the ability to elicit an arousing effect of varying intensity centered on the object of the belief.

The behavioral component is the third component of attitude. It is concerned with how people are predisposed to act in relation to the attitudinal object. It is referred to as the behavioral component because the belief, as a response or predisposition with varying thresholds, must result in some actions when appropriately activated.

2.3. The Formation of Attitude

Pickens (2005) stated that attitude formation is a result of learning, modeling others, and people's direct experiences with others and situations. Attitudes influence people's decisions, guide their behavior, and impact what they selectively remember (not always the same as what they hear). Attitudes come in different strengths, and like most things that are learned or influenced through experience, they can be measured and they can be changed (pp. 47-48).

Bordens and Horowitz (2002) stated that attitude formation refers to the movement persons make from having no attitude toward an object to having some positive or negative attitude toward that object (p. 167). Thus, they acknowledge four mechanisms of attitude formation. First, Mere Exposure by being exposed to an object increases feelings, usually positive, toward that object, repeated exposure can lead to attitudes. Second, Direct Experience in which attitudes are acquired

through it are likely to be strongly held and to affect behavior. People are also more likely to search for information to support such attitudes. Third, Operant & Classical Conditioning, where most social psychologists would agree that the bulk of the attitudes are learned. That is, attitudes result from experience not genetic inheritance. It is composed of operant and classical conditioning. Operant conditioning is a method by which attitudes are acquired by rewarding a person for a given attitude in the hopes it will be maintained or strengthened. Classical Conditioning is a form of learning that occurs when a stimulus comes to summons a response that it is previously did not evoke to form an attitude. Finally, Observational Learning concerned with attitude-formation through watching what people do and whether they are rewarded or punished. Then, imitating that behavior. When there are discrepancies between what people say and do, children tend to imitate the behavior.

As a natural process, the formation of attitudes is inevitable. Coon and Litterer (2008) pointed out "Attitudes are intimately woven into our actions and views of the world"(p. 535). Whether consciously or unconsciously formed, attitudes are considerably beneficial for social and psychological survival. Smith and Mackie (2000) recognized that: "we develop attitudes because they are useful to us" (p. 250). Social psychologists widely acknowledge that attitudes are invisible but express themselves in beliefs and emotions. For this sake, Coon and Litterer (2008) stated that attitudes are expressed through beliefs and emotions. And eventually, they predict or direct future actions. Differently stated, attitudes are the instigators as well as compass of behavior. Phillips and Gully (2011) conceptualized those beliefs lead to feelings; feelings lead to attitudes; attitudes lead to intentions, and intentions culminate into behavior (p. 136).

2.4. Functions of Attitudes

Individuals' attitudes can vary in response to the situation and motives in their surroundings, and they can be modified in connection to the person who possesses that psychological state. The functional view of attitude, on the other hand, is primarily concerned with fulfilling people's wants in some way, also each attitude's role is to mediate between an individual's internal demands and the external environment. Katz in (1960) have proposed four attitude functions in order to understand the world (as cited in Milfon,2009, p. 242).

2.4.1. The Instrumental Function

This function makes people recognize their own selves and its relation to outside circumstances. In daily life individuals try to minimize punishment and maximize rewards to reach specific goals, that's why they need to develop their learning about objects. Hence, they can think, evaluate what is beneficial for them. Katz (1960) stated that perception of past and present efficacy object may help strongly in the formation of positive attitudes which results the satisfaction of aims (as cited in Milfon,2009, p. 246).

2.4.2. The Value Expressive Function

On one hand, holding an attitude helps people to develop their personalities and their ideas, since the self-concept is formed in the individual's childhood during formation period, it makes them able to confirm what is bad and right and being accepted by elders' models. On the other hand, it gives them the opportunity to express individuals' held values, and to develop their interactions in social groups or organizations through discovering its values. (Katz, 1960, p. 173).

2.4.3. The Knowledge Function

Some attitudes are beneficial because they help to understand the universe well, they also allow people to simplify the complex components natural environment which able them to accept the coming changing of situations in order to deal with such inconsistency. This function makes them more knowable, and predictable about the world as well increasing the efficiency of information processing, it serves the needs of the cognitive organization. (Katz, 1960, p. 175).

2.4.4. The Ego-Defense Function

This function serves to protect the self from psychologically harming events. It allows people to defend their selves basically from inner conflicts of one's own personality and makes them better in facing environmental threats. Therefore, this function has some aims: on one hand, to be conscious of fulfilling the need for understanding and self-expression. It helps to get meaning, which object to approach and which to avoid. Further, to communicate with others and developing one's self-esteem. On the other hand, understanding and integrating the previous functions effectively. (Katz, 1960, p. 172).

2.5. Theories of Attitudes

Theories are useful for guiding individuals in their behavioral actions in life, and they are also useful for research studies in the social and behavioral sciences. Its purpose is to guide individuals in the formation of attitudes, as well as attitudinal and behavioral changes. There are several theories of attitude formation and attitudinal/behavioral changes, but the following are the most important:

Wrightsmann (1985) identified five different theories of attitude change.

2.5.1. Stimulus-Response and Reinforcement Theories

Stimulus refers to an item, event, or person in psychology. It is the stage at which an individual learns to respond solely to stimuli that are identical to the initial conditioned stimulus. The accompanying behavioral reaction to comparable stimuli in the environment is referred to as stimulus generalization. If an object, event, or person resembles the initial stimulus to which it was conditioned, the behavior will resemble that related stimulus. People acquire learned habits by connecting a certain input with a specific reaction.

Stimulus-response and reinforcement theories make the assumptions that attitudes are changed only if the incentives for making a new response are greater than the incentives for maintaining the old response.

2.5.2. Social-Judgement Theory

The way people influence the thoughts, feelings, and behaviors of others is referred to as social influence. Sherif and Hovland's (2002) assimilation contrast theory and Helson's (2000) adaptation level theory are two examples of social judgement theories of attitude change. The assimilation-contrast theory conceptualizes attitudes on a scale. Within this scale, there is a zone known as the latitude of acceptance, the boundaries of which are the limits of the attitude statements with which the respondent agrees. Attempts to change attitudes must present new positions that fall within this acceptance range. According to Sherif and Hovland's (2002) assimilation-contrast theory, the greater a person's ego-involvement with an attitudinal object, the narrower his latitude of acceptance and the wider his latitude of rejection.

2.5.3. Consistency Theory

According to Wrightsman (1985) psychology has a family of consistency theories that help explain attitude organization and change, the most researched and debated of which is the Cognitive-dissonance theory. When a person has two cognitions, one of which is contradictory to the other, cognitive dissonance is said to exist, and people's attitudes are organized and changed as a result of the principle of cognitive consistency. This principle implies that people strive for consistency in their beliefs, values, behavior; and in their different attitudes. Cognitive consistency is such a powerful force in people's social lives that its absence, or inverse (inconsistency), is psychologically uncomfortable.

2.5.4. Self-Perception

It is a specialized form of attribution that involves making inferences about oneself after observing one's own behavior. It proposes that people observe their behavior and then change their attitudes to be consistent with their behavior, and that people's behavior determines their attitude. According to self-perception theory, a person's attitudes are formed through self-observation of their behavior. It is concerned with how individuals understand, perceive, value, and evaluate themselves when interacting with other people in a given environment or reacting to an event.

2.5.6. Functional Theory

The basic proposition of the functional theory of attitude is that people hold attitudes that are appropriate for their needs. To change their attitude, they must first determine what their needs are.

2.6. Types of Attitudes

Attitude is not fixed, but it changes with circumstances and needs. Furthermore, several factors such as one's experience, social norms, and conditioning contribute to different types of attitudes. According to Jonas (2021) there are four types of attitudes:

2.6.1. Positive Attitude

A positive attitude entails having a positive mindset and thinking about the greater good regardless of the situation; it aids in accepting one's strengths and weaknesses and remaining resilient. People with a positive attitude see a mistake or failure as an opportunity to learn from their mistakes and move forward in life. A positive outlook is essential for academic and professional success.

2.6.2. Negative Attitude

Jonas (2021) stated that people who have a negative attitude are unable to look at things with hope or happiness. It is the polar opposite of having a positive attitude. People with a negative attitude ignore the good and focus on the bad in others, situations, events, and so on. Furthermore, they are more likely to complain about changes rather than adapt to them. They may also blame their failure on others, and they are frequently confronted with adversity, which causes them to adopt a negative attitude towards life like anger and doubt. Constantly that feeling can have a negative impact on one's mental and physical health.

2.6.3. Neutral Attitude

People with a neutral attitude are typically self-satisfied. They can detect a neutral attitude by observing its various symptoms, which include not showing emotions or reacting to situations,

materialistic possession, and indifference to challenges. Neutrality, one of the most distinctive types of attitudes, has advantages and disadvantages, but it can assist by maintaining stability in the face of setbacks. It can also make the person feels disconnected from people and the needed goals. People with a neutral attitude do not place enough weight on situations or events, but they dismiss the issue and leave it to someone else to resolve.

2.6.4. Sikken Attitude

Sikken is one of the most difficult types of attitudes to understand. It exudes a constant sense of negativity and aggression. It is difficult to navigate this type of attitude because it is rooted in one's personality, and it is extremely difficult for people to change their viewpoint significantly.

2.7. Structure of Attitude

The phrase attitude structure appears frequently in the literature. Fabrigar et al. (2005) stated that the notion of structure must start with the concept of attitude, and it makes sense to think of an attitude as a form of knowledge structure stored in memory or produced at the time of judgment in order to exist. Some attitude theorists for example, Fazio (1989, 1995) have advocated that attitudes can be seen as object-evaluation relationships. That is, an attitude may be seen as a simple two-node semantic network, with one node representing the object, the second node indicating the item's global assessment, and the connection between the two nodes reflecting the strength of the relationship.

Although attitudes can be defined as simple object-evaluation links, they can also be part of bigger sets of knowledge structures (Eagly & Chaiken, 1993, 1998; Petty & Krosnick, 1995; Pratkanis, Brckler, & Greenwald. 1989). Fishbein & Ajzen (1975) exemplified that one may correlate specified qualities with the object's representation, and each of these attributes could then

be associated with an assessment. Similarly, Zanna and Rempel (1988) saw that distinct emotional reactions may be connected with an item, and each of these affective states may be associated with an assessment. From this vantage point, an attitude's structure may be described as an object-evaluation relationship and the knowledge structures that are associated to it. Eagly and Chaiken(1998); Wegener and Gregg (2000) pointed out that the term attitude structure refers to the number and content of knowledge structures, and the strength of the associative links that comprise the attitude and its related knowledge structures.

Eagly and Chaiken (1993, 1995, 1998); McGuire (1989) differentiated two forms of attitude structure. The structure of a single attitude is referred to as intra-attitudinal structure whereas inter-attitudinal structures are those that involve more than one attitude which are also known as attitude systems (Judd, Drake, Downing, and Krosnick, I 991; McGuire, 1989); or belief systems (Converse, 1964).

As previously stated, an overall attitude toward an item may be impacted by evaluations of several individual features of the object or emotions linked with the thing. As a result, even when just one object is evaluated, many situations might potentially be described as involving inter-attitudinal structure. However, Fabrigar et al. (2005) kept the earlier designations of intra-attitudinal when considering a single object and inter-attitudinal when considering two or more objects (typically at approximately the same level of abstraction).

2.8. Attitude Models

Various researchers have presented a variety of attitude models. Some of the more essential and well-known models are listed below:

2.8.1. Expectancy-Value Model

Rosenberg (1956) offered an early expectancy-value model in which he proposed that value significance and perceived instrumentality are independent and perhaps manipulated elements of attitude-related cognitive processes. There is widespread agreement that attitude may be defined as a full appraisal of an attitude object. According to Calder and Ross (1972) this model is made up of two parts: the likelihood 'expectancy' of each belief that makes up an attitude and the worth 'value or affect' connected with each belief. Referring to Fishbein and Ajzen (1975), the Expectancy-Value Model of attitude suggests that a person has numerous beliefs about an attitude object; an item is perceived to have many features.

2.8.1.1. Multiattribute Measurement Model

The Multiattribute Measurement Model is one of the most well-known and widely used Expectancy-Value-based models of attitude. This model is proposed by Fishbein (1963). Attitude, according to him, is an independent measure of affect for or against the attitude object, and it is a function of belief strength and an evaluative feature linked with each characteristic. Further, Anderson (1971) proposed another model, which can be viewed as an expectancy-value approach, in which he argues for the extension of his information integration model to attitude change.

2.8.1.2. Vector Model

In their method, Calder and Lutz (1972) portrayed attitude structure as a two-dimensional metric space known as Vector Model. They believe that one measure indicates an emotive component (liking or favorability) while the other represents a cognitive component (likely or probable). Any belief a person has about a product is represented by a value on each of these dimensions as a set of coordinates in cognitive space.

2.8.4. Tripartite Model

This approach divides attitude into three parts: feelings, beliefs, and behavior. The first component is an individual's emotion, which is represented by verbal statements of feeling, the second component is an individual's cognitive response, which is represented by verbal statements of belief, and the third component is an individual's overt action, which is represented by verbal statements about intended behavior in response to environmental stimuli.

2.8.5. Technology Acceptance Model (TAM)

TAM is an applied model of attitude proposed by Davis (1989, 1993) in which intention to use a technology is impacted by attitude toward that technology and assessment of its utility. Attitude is impacted by a person's perceptions about how valuable technology is and how simple it is to be used. In this situation, both simplicity of use and usefulness impact attitude. Djamasbi et al. (2009) pointed out that the degree to which utilizing a technology requires no effort is defined as ease of use, and the degree to which the technology can aid to improve work performance is measured as usefulness.

2.8.6. ABC Model

Eagly and Chaiken (1998) and Van den Berg et al. (2006) suggested the ABC model which is one of the most often mentioned attitude models. According to the ABC model, attitude consists of three components: affect which describes an individual's sentiments toward an attitude object, behavior which expresses an individual's desire toward an attitude object, and cognition refers to an individual's views about an attitude object.

2.8.7. Cognitive-Affective-Conative Model

According to Schiffman and Kanuk (2004), attitudes are built around three components: a cognitive component (beliefs); an emotional component (feelings); and a conative component (behavior).

2.9. Importance of Attitudes

Allport (1935) stated that attitude is social psychology's most essential notion. He seems to believe that the significance of attitudes was so obvious that he did not need to clarify the basis for his conclusions.

2.9.1. Attitudes Are Pervasive

According to Osgood et al. (1957) this observation is correct, as evidenced by the convenience with which people report evaluative reactions to a wide variety of items, the complexity in identifying categories of objects within which evaluative distinctions are not made, and the pervasiveness of an evaluative component in judgments of meaning. Yet, the pervasiveness of attitudes is not a reason to conclude that attitudes are crucial in understanding social behavior. As Bern (1967) proposed, attitudes might be cognitive illusions formed after the fact of activity.

2.9.2. Attitudes Predict Behavior Toward Their Objects

La Piere (1934) provided an important early criticism of the efficacy of attitudes in forecasting conduct. Further, Festinger (1964) criticized the absence of written support for the fair anticipation, and that changes in attitudes should translate to changes in behavior toward their objective thirty years later. Wicker (1969) went on to evaluate a corpus of research that found

relatively minimal relationships between measures of attitudes and measures of conduct toward their objectives.

Two significant study efforts in the 1970s and 1980s were successful in defining attitude-behavior relationships. The first, directed by Fishbein and Ajzen (1974), demonstrated that attitude and behavior are correlated when the observed behavior is judged to be relevant to the attitude, when attitude and behavior are observed at comparable levels of specificity, and when behavioral intentions are considered to mediate the attitude-behavior relation. The second significant program, supervised by Fazio (1986), demonstrated that attitude and behavior, as well as changes in behavior, are connected when the attitude is based on direct experience with the attitude object, and to the extent that the attitude is cognitively accessible.

Despite the fact that the successful Fishbein-Ajzen and Fazio research programs proved that attitudes may and do predict behavior toward their targets, these programs also imposed major qualifying constraints on the attitude-behavior link. Attitude-behavior relationships do not appear to be powerful or robust enough to prove the significance of attitude as a theoretical construct.

2.9.3. Attitudes Are a Selective Force in Perception and Memory

It has long been assumed that attitudes drive perceptual and cognitive processes. For Festinger (1957) persons selectively seek information that agrees with their attitudes while avoiding disagreeing information, whereas Levine and Murphy (1913) recall attitude-agreeable information in preference to unpleasant information. However, according to Freedman and Sears, (1956), Greenwald and Sakumura, (1967), WaIy and Cook (1966) the empirical foundation for both of these postulated perception and memory distortions was called into doubt in the 1960s. Wicklund and Brehm (1976) saw that these selective effects on information seeking and memory appear to

occur only under very specific conditions. As a result, these events do not support the significance of attitude as a theoretical concept.

2.9.4. Attitudes Serve Various Psychic Functions

The functional analyses of Smith et al. (1956) and Katz (1960) paid the most direct attention to the importance of attitudes; they proposed that attitudes serve functions designed by labels such as utilitarian, social adjustment, object appraisal, knowledge, value expression, and ego-defense. Because these functional theories spawned so little research, statements about the functions of attitudes are often unfounded.

2.10. Attitudes Measurement

According to Harvey (2012) an attitude measuring assessment is an investigation of a certain community based on a properly drawn sample to determine how individuals in that group feel about a specific problem. Attitude surveys are often conducted using properly developed, standardized questions. According to him, attitude scaling is the process of creating a measure to serve as a foundation for giving a quantitative score to a person's attitude and comparing him or her to others. This is achievable, when an attitude is thought of as a single metric. In principle, a scale like this can be nominal, ordinal, or interval, although most of them are built and utilized as interval scales.

The Thurstone, Likert, and Guttman techniques are some of the most well-known approaches for attitude measuring:

2.10.1. Thurstone Scale

Thurstone (1928) developed Thurstone scale which is an attitude measure that consists of elements (statements) with which the respondent must agree or disagree. Only those elements are graded with which they agree. Each item has a numerical value, and the respondent's rating scale corresponds to the midpoint of the things with which he or she agrees. The item scores are normally calculated by having a group of judges rank each item on the scale using an eleven-point scale that reflects the attitude being assessed. The midpoint of the judges' individual ratings is used to get the final score for each item. The final selection is based on two criteria: first, that things encompassing the whole eleven-point range are included; second, that items have a tiny variance (between judges).

2.10.2. Likert Scale

Likert (1932) defined it as a method of attitude measuring in which respondents indicate the amount to which they agree with each item on a scale (e.g., a five- or-seven-point scale) and the total of their scores for each item determines their scale to evaluate. In 1932, as a development of Thurstone scales, Likert scales were created with the goal of eliminating the inaccuracy of utilizing intermediary judges in scale creation. Likert scales did not include a neutral or middle point in the beginning, and respondents were 'pressured' to agree or disagree with the scale item. Most contemporary usage of Likert-type scales do not adhere to this standard.

Likewise, Likert (1932) pointed out that the sample might be divided into deciles based on scale scores. The higher quartile's mean score on each item is compared to the lower quartile's mean score on the same item. The discriminating power of an item is defined as the difference in

mean scores for each item. Those with more discriminating power are preferred, particularly if their aggregate item score means are close to the predicted mean.

Although Likert scales are not necessarily unidimensional, the technique is based on the assumption of a single dimension. It has been suggested that analyzing a Likert scale can reveal clusters that are representative of several dimensions, albeit this is far weaker than the multi-dimension identification stated for Guttman scaling.

Like Thurstone, the Likert technique entails forming judgments about the latent classes into which the manifest data may be categorized. Unlike the Thurstone scale, which requires judges to evaluate one item's relationship to others rationally, Likert scale items do not need to be explicitly tied to the attitude being examined. The item's link with the overall scale score determines what is included. As a result, information demonstrating 'underlying' linkages can be included. However, for some critics, this raises questions about objectivity.

2.10.3. Guttman Scale

Guttman attitude scales were created by Guttman (1944), and they entail the researcher creating a collection of hierarchical statements relevant to the issue under inquiry. The strength of one's attitude should be shown in these remarks. The respondent's scale position is reflected by the point at which he or she disagrees with a statement. According to him, if a respondent disagrees with statement 5 (after agreeing with statements 1–4), the respondent will disagree with statements 6 and 7, and so on, because they are more severe representations of the attitude under investigation. Guttman scales aren't flawless in practice. The researcher, the subject, and independent judges may or may not perceive the rank order of the claims in the same manner. Pilot studies usually provide a rank ordering reliability coefficient.

Finally, Harvey (2012) saw that The Guttman method's strength is its ability to identify more than one scale dimension. The repeatability coefficient indicates how closely the material is related to a specific dimension. Furthermore, the Guttman technique does not draw conclusions about the data's latent nature, instead manipulating actual data directly to determine an attitude.

2.11. Attitudes in EFL Teaching and Learning

According to McGroarty (1996) attitudes are commonly characterized as anything that is "closely tied to a person's values and views, and supports or discourages decisions made in all spheres of activity, whether academic or informal" (p. 5). Language planning, bilingual education, and, in particular, second or foreign language acquisition are some of the domains that necessitate study on language attitudes. Many studies (see, for example, Agheyisi and Fishman ,1970; McGroarty 996) have demonstrated the critical role that affective factors play in the process of second or foreign language learning. Learner attitudes are recognized as one of the most important factors influencing language learning (Fakeye, 2010), as well as one of the most effective factors for success in learning a foreign language. One case in point is Spolsky (1969), who almost 40 years ago strongly underlined

The importance of attitude as one of the factors explaining degree of proficiency a student achieves in learning a second language. His attitude to speakers of the language will have a great effect on how well he learns. A person learns a language better when he wants to be a member of the group speaking that language. (p. 281)

According to Oxford (1990), learners' attitudes, skills, and strategies determine their underachievement or accomplishment. Moreover, Ajzen (2005) pointed that attitudes toward

language learning are a hypothetical construct that cannot be directly observed and must be inferred from responses reflecting evaluations of the attitude object. Aside from intellectual aspects, the nature of language learning includes psychological and social aspects and is primarily determined by the learners' motivation and attitude toward learning the target language (Padwick, 2010). Thus, Language achievement is based not only on intellectual capacity, but also on the learner's attitude toward language learning. As Thomas & Wareing (1999) has stated, "awareness of how attitudes might be formed or manipulated may not make us immune to them, but it may help us to evaluate their influence on our own practices." (p. 188) Gardner and Lambert (1972) concluded that students' ability to learn and develop a second language is influenced not only by their mental competence or language skills, but also by their attitudes and perceptions of the target language. Furthermore, they argued that the attitude concept could improve the process of language learning by influencing the nature of students' behaviors and beliefs about the target language. As a result, learners' attitudes should be considered in language learning because they will influence their performance towards the teaching and learning process of the language.

Conclusion

Individuals develop strong attitudes towards political parties, national security and all other issues and institutions in the society. They tend to influence people throughout life. This chapter highlights the definition of attitudes, their types, functions, and theories that guide individuals in attitude formation. In addition, it focuses attention on the different models of attitudes, their structure, and the importance of attitudes as social psychology's most essential notion. Finally, it points out the different scales through which attitudes can be measured, besides to its role in EFL learning and teaching.

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Introduction

The present chapter is devoted to the practical part of this research, which seeks to investigate the views and attitudes of students and their teachers towards using English as a medium of instruction in the scientific field. It presents and analyzes the findings from data collection in the current study in accordance with the theoretical framework. In doing so, two data gathering tools have been used. Thus, a questionnaire was administered to second year biology students, and an interview was conducted to their teachers at the University of Guelma. Furthermore, the interpretation of these results is provided in order to find an answer to the research questions. It concludes with some pedagogical implications, limitations of the study, and some recommendations for further research.

3.1 Students' Questionnaire

The questionnaire is submitted to investigate students' attitudes and opinions towards English as a medium of instruction in the scientific field. It also deals with the extent to which students are interested in using and applying this language.

3.1.1. Population of the Study

The population of the questionnaire is second year students of Biology at Guelma University. The informants are composed of one hundred (100) students who were chosen randomly to respond to the research instrument. Thus, it can be said that this sample would permit the researcher to generalize the results to the whole population.

3.1.2. Students' Sample

The questionnaire took place during the academic year 2021-2022. The sample has been chosen randomly from six groups (160) of second year students of biology at the department of Biology, Guelma University. Females represent the majority of the participants (80%) and the rest (20%) are males, ranging in age from 19 to 20 years. So, the sample could be representative of the theoretical population.

3.1.3. Description of the Students' Questionnaire

Students' questionnaire mainly aims at investigating students' attitudes towards using English as a medium of instruction in the scientific field. Through this questionnaire, the researchers seek to know what students know about the term EMI and whether they agree to study using the English language or not. This questionnaire consists of twenty questions (20) which are classified into three major sections, each section focuses on a particular aspect (see Appendix A). Both closed-ended and open-ended questions are used in this questionnaire, in addition to the type of follow-up questions in the form of clarification "please explain" in order to obtain clear and complete responses, and free answer questions where participants answer freely using their own words.

The first section is devoted to general information. It consists of questions about students' general information. It includes three main questions (Q1 to Q3) which aim to describe the sample. The second section contains eight questions from (Q4 to Q11). It deals with learners' knowledge about English as a medium of instruction, their level of understanding this language, and the importance of applying it on the scientific field. The aim of this section is to know students' views about the meaning of EMI and its importance for scientific fields. Furthermore, the third section contains nine questions from (Q12 to Q20). It seeks to explore students' preferences concerning

the language used as the medium of instruction, their attitudes towards switching to English, and the challenges they may encounter while using this language as a medium of instruction. Finally, the fourth section contains only one open-ended question (Q21) which gives students full freedom to add any comment/suggestion about the topic under investigation. The reason behind the variation of questions is to collect reliable data and confirm the validity of the research.

3.1.4. Administration of Students' Questionnaire

The questionnaire was administered to second year students of biology at the University of 8 Mai 1945 -Guelma- during one day " 15th May 2022. It is worth noting that the questionnaire was conducted in Arabic because vast majority of the students were not qualified to use English, and few of them did not reply to some questions. It was distributed in a good relaxed environment and the students were very cooperative in this process, the students showed interest in the topic itself and considered it as an important and new subject to be discussed. The questionnaire has been answered anonymously inside the classroom at the end of the sessions. During the distribution of the questionnaires, we have explained some concepts that might be ambiguous to the participants in order to help them understand and provide appropriate answers.

3.1.5. Data Analysis and Interpretations

This section consists of the results and findings of students' questionnaire. It is divided into four main parts: general information, English as a medium of instruction, attitudes towards using English as a Medium of Instruction, and the last which is further suggestions and/or comments.

3.1.5.1. Analysis of Results and Findings from Students' Questionnaire

This section contains a detailed analysis of the questionnaire results.

Section One: General Information

Question 3: How long have you been studying English?

Table 3.1

Students' Experience in Studying English

Option	Number	Percentage
9 years	79	79%
10 years	17	17%
11 years	4	4%
Total	100	100%

In response to the third question, the majority of the respondents (79%) have been studying English for 9 years. However, (17%) claimed that they have been studying English for 10 years, and only (4 %) have been studying English for 11 years. The results confirm that the majority of the students have succeeded in their studies while just few of them may have repeated one year at least. This also implies that all students have an experience in studying English.

Section Two: English as a Medium of Instruction (EMI)

Question 4: Are you exposed to modules using English language?

Table 3.2.

Students' Exposure to Modules Using English Language

Option	Number	Percentage
Yes	100	100%
No	0	0%
Total	100	100%

According to the results in table2, (100%) of students have said that they are exposed to modules using English language. This indicates that they are somehow familiar about the teaching and learning process will be in English.

Question 5. If yes, how many modules do you study in English?

All of the students who said “yes” reported that they are exposed to one module which is ESP where its focal point is that English is not taught as a subject separated from the students' real world (or their needs); instead, it is integrated into a subject matter area important to the learners.

Question 6. How do you assess your level of comprehension in English?

Table 3.3.

Students' Level of Comprehension in English

Option	Number	Percentage
Low	8	8%
Average	62	62%
Good	25	25%
Very good	5	5%
Total	100	100%

As students described their level in this language, the majority of the students claimed that they have an average level, while few of them reported that they have low level of understanding. This implies that most of the students are somehow satisfied with their level and achieved enough goals to reach it. Accordingly, it is worth mentioning that the chosen sample consists of students with average level who will help in valuing the results of the research.

Question7: Are you familiar with the term EMI?

Table 3.4.

Students' Knowledge of EMI

Option	Number	Percentage
Yes	34	34%
No	66	66%
Total	100	100%

According to the table4 above, (66%) asserted that they do not know what is meant by the term EMI. However, (34%) of the students indicated that they are familiar with the term EMI. This reveals that the majority of learners are not familiar with the term EMI.

Question8: What do you think the definition of EMI?

- A.** It is a practice in which scientific courses are taught in English
- B.** It is the use of the English language to teach in situation where English is the first language
- C.** It is the use of English as the primary medium of instruction, particularly where English is not the mother tongue of the students.

D. All of them

Table3.5.

Definition of EMI

Option	Number	Percentage
A	22	22%
B	17	17%
C	50	50%
D	11	11%
Total	100	100%

According to the students' responses to the definition of the term EMI, the half of the sample have chosen that the definition of EMI is the use of English as the primary medium of instruction, particularly where English is not the mother tongue of the students. (22%) of students identified the definition of EMI as a practice in which scientific courses are taught in English. Also, (17%) of them recognized it as 'the use of English as the primary medium of instruction, particularly where English is not the mother tongue of the students', while only (11%) of them comprehend that the meaning of EMI as all the above-mentioned suggestions. These percentages indicate that the informants recognized the meaning of EMI and perceived it correctly.

Question9: Do you agree that English should be used in the scientific fields?

Table 3.6.

Students' Opinions Towards Using English in The Scientific Fields

Option	Number	Percentage
Yes	69	69%
No	31	31%
Total	100	100%

In question (Q9), students are asked whether they agree to use the English language in the scientific fields or not. The majority (69%) answer yes, while only (31%) of the reporters said 'No'. This shows that most of the students accepted using the English language as medium of instruction in the scientific fields instead of other languages, while the others refused this idea.

Question10: If yes, why?

All of the students who said "yes" believed that the English language is very important and it is the most widely spoken language in the world. Some students noted that most of the developed countries depend on this language in the scientific fields. Where others stated that it enables them to study or work in a foreign language environment or international companies, and offers better job opportunities. Furthermore, they agreed on using it because it gives them better accessibility to English materials as well as the existence of better curricula, and a positive influence on the wider community and wider chances for communication. In addition to that, all the participants claimed that most of the scientific articles and research papers are published in English. Moreover, they answered that it is a flexible language that is easy to be acquired.

Question11: To what extent applying EMI in the scientific fields is important?

Table3.7.

Importance of Applying EMI in the Scientific Fields

Option	Number	Percentage
Extremely important	30	30%
Important	39	39%
Normal	26	26%
Unimportant	3	3%
Extremely unimportant	2	2%
Total	100	100%

The table7 above demonstrates that the majority of the students claimed that applying English as a medium of instruction (EMI) is important. While rest of them assumed that it is normal to be applied. This might reveal that they are motivated to use English. They also have a positive outcome about the importance of applying English as a medium of instruction in the scientific fields.

Question12: What is the importance of using English as a medium of instruction?

- A. It opens doors to more information than any other language.
- B. It plays a key role in the world and functions as a passport.
- C. It is utilized as an Educational Medium of Instruction (EMI) to provide greater options for institution's development.
- D. All of them.

Table3.8.

The Importance of Using English as a Medium of Instruction

Option	Number	Percentage
A	21	21%
B	12	12%
C	10	10%
D	57	57%
Total	100	100%

As indicated in table8, (21%) of the students viewed that the importance of using the English as a medium of instruction is that it opens doors for more information than any other language in the world. (12%) of them agreed on the fact that it plays a key role in the world and functions as a passport. While only (10%) have chosen that English is utilized as an Educational Medium of Instruction (EMI) to provide greater options for institution's development. However, the majority of the students (57%) have chosen the option "all of them". This might indicate that they saw English as a great source of knowledge that offers access to reliable journals, magazines and books produced in English. In addition, they are aware of the importance of using English as a medium of instruction while few of them are not.

Question13: How much is good for Algeria to adopt EMI in scientific fields?

Table3.9.

Students' Opinion about the Effect of Adopting EMI in Scientific Fields in Algeria

Option	Number	Percentage
Very good	29	29%
Good	63	63%
Bad	08	08%
Very bad	00	00%
Total	100	100%

When it comes to students' opinion about how much is good for Algeria to adopt EMI in scientific fields. The majority of the students said that it is good for Algeria to apply it. So, this indicates that they have mastered the benefits of adopting this language as a medium of instruction in scientific fields for Algeria. However, few of the participants opted for bad, and no one choose very bad. This also signifies that the majority of students have positive attitudes towards using EMI in the Algerian context.

Section three: Attitudes towards Using English as a Medium of Instruction

Question14: In which language do you prefer to study?

Table3.10.

Preferable Language for Study

Option	Number	Percentage
English	42	42%
Arabic	24	24%
French	28	28%
Arabic + French	2	2%
Arabic + English	4	4%
Total	100	100%

As indicated in table10 most of students have said English is their preferable language, while others agreed on Arabic. In addition, some participants were more potential to French. Furthermore, only few students preferred to mix either between Arabic and French, or between English and Arabic. These results go hand in hand with the previous ones and affirm that the majority of students share positive attitudes towards EMI.

Question15: How your English has become since attending this university?

A. Stronger

B. Weaker

Table3.11.

Students' level of English since Attending the University

Option	Number	Percentage
Stronger	63	63%
Weaker	37	37%
Total	100	100%

By this question students are asked about their level of English after attending the university, the majority of them have confirmed that their level become stronger. This might indicate that students work to improve their level of English, or this strength is related to the course of English that they are taking. However, the other students have said that their level became weaker which might mean that they do not have interest to improve their level of English, or the course is not enough to cover their weakness.

Question16: What language/s do you use in your field of learning?

Table3.12.

The Language/s Students Use in Their Field of Learning

Option	Number	Percentage
French + Arabic	100	100%
Total	100	100%

As it is indicated in table12, all the students (100%) claimed that they tended to mix between Arabic and French in their field of learning. This shows that students use French because it is the medium of instruction in the university, besides the Arabic language to simplify the learning process.

Question17: Do you agree on switching to English?

Table3.13.

Students' Attitudes towards Switching to English

Option	Number	Percentage
Yes	61	61%
No	39	39%
Total	100	100%

When asking students whether they agree to switch to English or not, the majority agreed on this decision, while the rest did not. This shows that most respondents have good insight about the interference of English in improving the teaching and learning process.

Question17: How do you feel about attending a university where the medium of instruction is English?

Table3.14.

Students' Views about Attending University where English is the Medium of Instruction

Option	Number	Percentage
Answered	15	15%
Not answered	85	85%
Total	100	100%

Only few students answered this question, while the overwhelming majority of them did not answer. For those who answered it they reported that it is interesting to attend university where the medium of instruction is English. They also noted that it is something good for them and it will be more beneficial to improve their level and communicative skills.

Question18: Do you face any problems in your courses because of your English-language level?

Table3.15.

Students' Problems with Their English-language Level

Option	Number	Percentage
Yes	62	62%
No	38	38%
Total	100	100%

It seems from table15 that students face problems in their courses because of their English-language level. The results demonstrate that most of the students answer 'yes'. However, the rest of them argue that they do not have problems with their English-language level. These results contradict with the results in question (13), the fact that makes it difficult to adapt English for the Algerian universities.

Question 19: If yes, what are they?

A. Lack of vocabulary

B. Hard terms

C. Problems in comprehension

D. Problems in pronunciation

Table.3.16.

Students' Problems with Their English-language Level

Option	Number	Percentage
A	10	16.12% %
B	8	12.90%
C	4	6.45%
D	2	3.22%
A + B	16	25.80%
A + C	10	16.12%
A +B+ C +D	12	19.35%
Total	62	100%

As table16 demonstrates, some students reported that they suffered from a lack of vocabulary, while others stated that they had problems with hard terms. In addition, few of the students found difficulties in comprehension. Whereas the lowest percentage have problems in pronunciation.

Other students master more than one aspect, where the majority of them had declared that they have problems with hard terms and lack of vocabulary. Moreover, some stated that they had difficulties with comprehension and lack of vocabulary. Additionally, the rest of the sample reported that they suffered from all the mentioned problems. The above results demonstrate that the majority of the students suffer from lack of vocabulary and hard terms. This may reveal the need of these students for ESP courses based on their needs in addition to terminology courses.

Question20: Do think that delivering courses in English would make them less interesting?

Table3.17.

Students' Opinion about Delivering Courses in English

Option	Number	Percentage
Yes	77	77%
No	23	23%
Total	100	100%

The table17 clarifies students' opinion about delivering courses in English. The overwhelming majority claimed that delivering courses in English language did not make them less interesting. However, the rest of the participants responded that delivering courses in English will make it less interesting.

Question21: If yes, why?

Some students confirm that delivering courses in English will make them less interesting, and they provide us with some reasons about it. The first reason is that the difficult terms hinder understanding of lessons which leads to a lack of interest; the second reason is that they do not have a good level in English. And The last reason they provide, is that they find difficulty to communicate and interact in the classroom using English since it is not their mother language or the first foreign language. 2

Question22: Does your department provide you with services to help you with your English?

Table3.18.

Services to Improve Students' English

Option	Number	Percentage
Yes	100	100%
No	0	0%
Total	00	00%

The table18 above clarifies students' opinions about whether their department provide them with any services to help them with their English or not. Consequently, all the students answered that their department does not offer them with any services. This shows why students found difficulties in English as students responded to the question (18).

Question23: Do you think that using English as a medium of instruction will be beneficial?

Tables3.19.

Students' Awareness about the Benefits of Using English as a Medium of Instruction

Option	Number	Percentage
Yes	88	88%
No	12	12%
Total	100	100%

In this question, the overwhelming majority of the sample opted for yes, i.e. they agree that using English as a medium of instruction will be beneficial. However, the rest respond 'No'. The above results demonstrate that the vast majority of the students are aware of the benefits of using English as a medium of instruction.

Question24: If yes, what are these benefits?

A. Advancing university ranking

B. Better access to scientific articles

C. Communication with other universities

D. Positive influence on the wider community

E. All of them

Table3.20.

Benefits of Using English as a Medium of instruction

Option	Number	Percentage
A	4	4.54%
B	20	22.72%
C	12	13.63%
D	2	2.27%
E	25	28.40%
B + C	10	11.36%
A + B + C	15	17.04%
Total	88	100%

According to the results obtained in table20, some have agreed on advancing the university ranking. Other students argued that using English as a medium of instruction offers better access to scientific articles, while others reported that it helps them to make communication with other universities. Only two students saw that using English gives them a positive influence on the wider community. Whereas, a higher percentage of the participating students admitted that the benefits

of it as a medium of instruction has many advantages including all the above-mentioned. Few participants considered that the benefits of it is only to have better access to scientific articles and to communicate with other universities. Others have agreed on having better access to scientific articles, enables them to communicate with different universities, and gives positive influence on the wider community. This indicates that all students are aware of the benefits of using the English language as a medium of instruction.

Section Four: Further Suggestions

In response to the last question where the participating members of the sample were required to provide some additions or comments about the topic of the research. The less percent number (22%) represents those students who answered this part. However, the majority of them (78%) left it blank. They may feel that the previous questions are enough to explore all the ideas they have about the topic or they may be in a hurry or bored from answering questionnaires.

Some of the participants who answered the question have provided some comments about the topic. they commented that it is interesting topic, others said that it is difficult. Some said that they enjoyed answering the questionnaire. Also, some of them preferred to just wish a good luck for the researcher. While others agreed on three main points; whereby they insisted on the importance of the English language and its status in the world. Others stressed on learning it. In addition, they emphasized on the benefits of using English as a medium of instruction in the scientific fields.

Their suggestions can be summarized in the following statements:

It is really important that our department devotes more classes for English from the beginning of university studies, because it is not sufficient to study English only for one session per week.

- Providing educational courses and services in universities to improve the level of students in this language.
- Introducing the English in the primary school.
- Increasing English language classes
- Dissemination of the English language in all fields not only scientific fields.

Generally speaking, it seems from the above suggestions and comments that students are aware and appreciate the important role that English plays in the world.

3.1.6. Summary of Results and Findings from Students' Questionnaire

The data gathered from the questionnaire have been presented and analyzed in the previous section. Accordingly, the present section provides a summary of findings according to the main research question raised at the beginning of the study.

The findings of section two, which is about English as a medium of instruction when most of the informants stated that they are exposed to one module in English. Besides, students showed their satisfaction about their level in the language. Having a good level refers to their success to achieve their intended goals in learning that will make them more eager to learn and develop more skills. Furthermore, they declared that they are not familiar with definition of EMI and they are not aware about its meaning. Moreover, the overwhelming majority believes that it is important to apply EMI in scientific fields. While in Q9 which is about whether they agreed to use English as a medium of instruction in the scientific fields, most of the students show their acceptance, because they believed that it is easy to be learned and understood. In addition, they thought that it offers better job opportunities for them, gives them better access to scientific articles and research papers

that are published in English, and helps them to communicate with people all over the world. In addition, most of them insisted that it is good for Algeria to adopt EMI.

In the light of the third section, most students reported that they prefer to study in English. Also, they were asked about their level of English since attending the university where more than the half of the sample stated that their level become stronger. Therefore, many students accept to switch to English language rather than French. They added that they face many difficulties related mainly to the lack of vocabulary. All students reported that delivering courses in English will make them more interesting. Additionally, they claimed that using English as a medium of instruction will be beneficial for them. Thus, they concluded by recommending for the integration of English starting from the primary school, and providing English courses in the universities.

To sum up, based on the data collected from analyzing students' questionnaire it can be assumed that the majority of the students have a positive attitude towards switching to English language. Despite the fact that they have problems with this language, because of lack of hourly volume devoted to teach English starting from the middle school. They showed their acceptance to use it as a medium of instruction in scientific fields. It can be noticed that they are motivated and interested to use English. As a result, this is what makes the integration of the English language harder for the Algerian universities, since they are required to make new reformulations starting from increasing the English language classes and disseminating it in all fields not only scientific ones.

3.2. Interview for Teachers

3.2.1. Population and Sample

The sampled population of the current study consists of five (05) teachers of biology at the department of biology, University of 8 Mai 1945-Guelma-. The teachers are chosen randomly without specifying any particular specialty in order to investigate their perspectives and attitudes about using English as a medium of instruction in scientific fields.

3.2.2. Description of the Interview for Teachers

The interview consists of ten (10) questions (see Appendix B) which are ordered from the general to the specific and tackle the research objectives. The interview's items vary from closed questions to open-ended ones. The first question seeks to ask about Which language they prefer to use in teaching. The following questions (from 2 to 5) are concerned with teacher's attitudes. Accordingly, they tackle teachers' expectations about the importance of EMI, the benefits that it may bring for the university, if they agree to have it or not, and their attitudes towards this topic. The next set of questions (from 6 to 10) deals with the challenges that teachers and their students may face while using English as a medium of instruction, besides to the difficulties that the Algerian government may encounter with this decision, their expectations about how the teaching and the learning process will be, and some suggestions for better integration of the English language in scientific fields .

3.2.3. Administration of the Interview for Teachers

The interview was conducted at the department of biology, University of 8 Mai 1945 -Guelma-. Five teachers of biology were interviewed using the Arabic language because they are not well qualified to speak with English. This fact can reflect teachers' level in English and the challenges

they are going to face in case they were asked to use English as a medium of instruction. The interview lasted for three days starting from April 17th, 2022 to April 20th, 2022. The duration of each interview varies between ten (10) minutes to thirty (30) minutes and they were recorded after taking the teachers' permission. After being conducted, the participants answers were translated into the English language.

3.2.4. Analysis of the Results and Findings from the Teachers' Interview

Question One: which language do you prefer to use for teaching?

The aim behind this question is to know which language do teachers prefer to use in teaching process and delivering of their courses. The obtained data showed that three teachers choose to mix between the three languages English, French and Arabic to deliver their courses, this implies that they shift between these languages for better understanding of courses. Another teacher chose to teach using the Arabic language for having better results since it is the mother language of the students which they use starting from the primary level. The remaining teacher insisted on using the French language only instead of English and Arabic, this reveals that she totally disagrees on mixing between languages.

Question Two: what do you think is the importance of using English as a medium of instruction?

This question seeks to know teachers' views about the importance of using English as a medium of instruction. All of the teachers agreed that English is a very important language that should be used in the scientific fields. They stated that it is an international language that is spoken all around the world. Furthermore, it is the language of scientific research and technology, which enables them to keep track of everything new step by step in scientific fields because all scientific works and articles are published in English. To put it together, teachers' answers reveal that English is

the universal form of communication in science, and currently the best way to share one's research findings with scientists in other parts of the world.

Question Three: what are the benefits that the use of English as a medium of instruction will offer for university?

This question seeks to know teachers' views about the benefits that English use may bring for the university. The majority of the interviewees agreed that it is widely used around the world. They stated that learning this language can open up potential networking opportunities especially for learners who are sent abroad since most of the research institutions use the English language. To put it together, teachers' answers reveal that the use of this language will improve the quality of scientific research, the more teachers develop scientific articles in English, the more they contribute to ranking universities among the top which gives a chance also to be part of international competition.

Question Four: what is your attitude towards using English as a medium of instruction in Algerian higher education?

This question aims at exploring teacher's perception and views regarding the use of English language in Algerian universities. the majority of the teachers' have a positive attitude toward the use of English as a medium of instruction, as it is the language of the world and the language that developed countries have always used in the scientific fields. so that, applying it as the main language in Algeria will enhance the quality of education. Furthermore, they agreed on the fact that the French language stand in the second place after English due to the lack of references needed for scientific research. Because, according to what is mentioned before, English has long been the language of science all around the world.

Question Five: do you agree on using the English language? If yes, please clarify

This question tries to elicit the different point of view teachers may have towards English, from their answers, almost all teachers agreed that the English language is the main language not just for science but for all communications, it is easy to learn, practical, flexible and based on few simple rules that are relatively easy to master. However, for the last teacher using English as a medium of instruction requires a strict reformulation for both students and teachers to master this language and to ensure better results. Accordingly, she added English has become popular worldwide because it has easily adopted words from every language in the world over many centuries and gradually enriched itself.

Question Six: as a teacher who used to teach in French, what are the challenges that you may face when shifting to use English?

The purpose behind this question is to pinpoint teachers' perceptions about the difficulties that they face when shifting to use English language as a medium of instruction. The teachers' answers showed that since it is a new language for them, they will face problem in pronunciation and spelling of scientific terms, they also insisted on the fact that they are not well mastered to use it, and that the problem remains in the language itself. However, for one teacher, using this language will be easier, she can use it the same as French. She stated that it would be somehow difficult at the beginning but it is not impossible to be acquired. To put it together, most of the teachers agreed on the fact that they are more related to use French than English because they consider it as the first foreign language that they use from the primary School till university. Besides to that, it is the language of the Algerian society that is spoken everywhere, within Algerian families, and even in academic situations and newspapers. Algerians have a "fairly broad" grasp of French, and many people speak it as a second language. It continues to be the dominant language in business and

professional circles and that certain aspects of formal education and research are still carried in the French language. Furthermore, a great part of the economic and industrial sectors and press still use French extensively.

Question Seven: what is your expectation about the difficulties that can face students when using English as a medium of instruction?

This question deals with teachers' opinions concerning the difficulties that may face students when starting to use English as a medium of instruction. All the teachers confirmed that students will suffer a lot with this decision, because they master French more than English since they start studying French from the primary school. This resulted on the fact that most of the students have a tangency to use French more than English. So that, applying this language in scientific fields will bring problems in comprehension, understanding, lack of vocabularies and fluency.

Question Eight: In your opinion, what are the difficulties that the Algerian government may face when putting this decision into practice?

This question seeks to reveal teachers' opinions and expectations about the struggles that the Algerian government will experience because of its decision. In view of their answers, it can be noticed that any change will bring many challenges. Almost all the teachers indicated that it is a random decision that is launched by the government without prior planning. They insisted that they are not ready to use English language yet, because before putting this decision into practice teachers and students necessitate extensive reforms beginning in the primary cycle and multi-year framework. In general terms, applying English as a medium of instruction in higher education needs time and hard training for both teachers and students to meet the requirements.

Question Nine: How do you think the teaching and the learning process will be after bringing English to be the medium of instruction?

This question tries to elicit the different attitudes that teachers expect concerning how the teaching and learning process will be after starting to use English as a medium of instruction. Teachers answers varied from one to another to include that, this language will lead the university level to be better than it is now, because it is the language of science which have a big impact on the classification of the university. Others have no clear opinion, but they state that it depends on the teacher. It may bring good results if the teacher is fluent in the language, capable to deal with it, and uses easy-to-understand words, he may contribute more to make his students accept it. Or it may be the opposite, teachers lack of proficiency plays a great role in influencing students in a negative way. Thus, the respondents' answers have shown that depending this language in teaching process will be hard at the beginning but it is just a matter of time to be welcomed. Additionally, it will work with a great sense to develop scientific fields in Algeria.

Question Ten: would you please offer some suggestions for better integration of EMI in scientific fields?

This question endeavors to check the participants suggestions for the teaching methods, materials, and the training that they may have for the integration of English in scientific fields to ensure better results. Teachers suggestions differ from one to another, one suggested to provide more hours within the planning to teach scientific English starting from the primary level. Additionally, the department can give the opportunity for students to choose whether to study their modules in English or French. Another teacher suggested to specify some modules only for scientific terminology in English so that to enrich students' vocabulary from the first year of

license. One more teacher suggested to have module that teach students how to write scientific papers depending on the translation method where they are given paragraphs and asked to translate them in English looking for the sense rather than the form. From this, teachers must have a hard training to be professional to use English the same as French, and learners have to be ready and motivated to learn and accept it.

3.2.5. Summary of Findings from the Interview for Teachers

The first part of the interview has dealt with teachers attitudes towards the use of English as a medium of instruction. Despite the fact that all of the teachers used to teach in French but they all agreed on the idea that nowadays English language is the language of the world, the language of science, knowledge and technology. Further, they have unanimously agreed that its application in Algerian universities will contribute better to make them occupy the highest international ranks, as well as their entry into one of the widest doors in international competitions in terms of scientific research and development of scientific competencies.

The second part of the interview was designed to tackle the challenges that may stand in the side of teachers and students as well as the Algerian government concerning its decision. The results showed that the decision that y the government for future implications is a random one that was issued without prior planning or studies. As they stressed that their difficulties lie in the fact that the French language is the language of Algerian society and it is more widely used among societies, families and even public institutions. In addition, it is the first foreign language of instruction within Algerian educational institutions, starting from the primary stage. Therefore, in order to adopt English as a medium of instruction, it is necessary first to frame the teachers, raise their competencies and enable them to deal with English in a professional manner. In addition to

motivate students to learn and deal with it, and to focus more on acquiring the scientific terminology necessary in their field of study.

To sum up, despite the fact that French language plays a great role in the Algerian society and educational systems. Most of the teachers support the use of English language as a medium of instruction, they show a positive attitude towards this decision, and they expect that the teaching learning process will be better.

3.3. Correlation between the Students' Questionnaire and Teachers' Interview Findings

From the results of students' questionnaire and teachers' interview, both teachers and their students have a positive attitude toward using English as a medium of instruction in the scientific fields. Both of them are aware of the influence of English for the university improvement, this is why they support the decision suggested by the government. Additionally, while students suffer from lack of terminology in English, teachers' problems remain in lack of mastering the language. Moreover, they have common suggestions including the increase of English classes, its integration from the primary level, and its generalization in all fields not only scientific ones. However, some teachers added that it is better to devote modules that are specialized in teaching scientific English so that to help their students acquire more vocabulary.

3.4. Limitations of the Study

The current research journey was paved with some obstacles that restricted its completion. These obstacles were mainly related to the practical part. First, the research was conducted in another department "Biology". Thus, it was very difficult to find the needed teachers for the interview. In addition to the fact that the time of the interview took place during the month of Ramadan, what obliged to attend the department from the morning till the afternoon looking for

teachers to be interviewed. Second, for the questionnaire, it was time consuming to search for second year students within the classrooms in order to collect the needed information.

3.5. Pedagogical implications

The obtained data of the current study revealed that teachers have positive attitudes toward the use of English language as a medium of instruction in scientific fields. However, this would not deny the fact that biology students at the department of biology, 8 Mai 1945 University-Guelma are not able to use it due to the fact of using French as a main language for teaching and learning. In this regard, this section tends to provide some pedagogical implications for learners, teachers and policy makers in order to apply English as a medium of instruction in Algerian scientific fields.

3.5.1. Teachers Implications

The following are suggested recommendations for teachers that may help in better integration of EMI in the Scientific Fields in Algerian Universities:

- Teachers should develop a positive attitude towards the use of English in order to raise their learners' awareness concerning this topic.
- They can update their knowledge, enlarge their vision, and broaden their minds in regards to the benefits of EMI in scientific fields.
- Teachers are asked to direct the students' interest towards the advantages of integrating English in the teaching and learning process.
- Teachers are encouraged to Be tolerant, open-minded, and open to change before asking students to evolve.
- They should boost their students to raise their knowledge about the use of English language inside and outside the classroom.

- They are required to have a strict training to master scientific English, take actions and direct their attention towards practicing and applying it inside classrooms.
- Teachers can enhance their level in English by joining intensive language centers at the level of their universities. These centers provide intensive courses in many languages including English.
- Teachers are also encouraged to give their students the opportunity to write their research papers in English.
- Scheduling English courses designed to teachers to improve their English language in the four main skills.

3.5.2. Students Implications

Learners, on the other hand, are asked to:

- Being conscious that mastering the English language requires hard working and self-dependence.
- Accepting English to replace French, and working to extend their knowledge for using it as a medium of instruction.
- Learning scientific terms in English and gradually apply them in their context.
- Communicating with other people who speak English from all over the world to help enhance their level.
- Reading scientific articles in English, so that they can take an idea about how the teaching and learning process will be.
- Join intensive language centers.

3.5.3. Implications for Decision Makers

For the sake of better implementation of EMI in the Algerian universities, the following are some suggested reforms that can be integrated and applied by Algerian policy makers:

- Gradual integration of English through modifying the designed syllabi by specifying some modules to be studied in English starting from earlier stages of the learning process.
- Providing training for teachers to master the language, and to be familiar with the methods and the techniques used to teach the different modules through English language.
- Adopting English as the first foreign language starting from the primary level.
- Developing two kinds of universities, ones that depends the English language as a medium of instruction and others depend on French. Thus, giving the chance for students to choose which one suits their expectations.
- Adopting a new educational reform regarding the English language.
- Maintaining that the course of English subjects should be mandatory from the first year of the undergraduate phase to the last year of the Master degree.
- Creating some distinctive commissions to supervise the adoption of English in the different 106 Algerian universities. These commissions should follow a set of parameters, recommendations, organizational or pedagogical guidelines set by some national and international experts in such field.

Finally, it is worth mentioning that the "University of Continuous Studies " at the level of the University of Guelma provided a special course to get a license in Technical English. This course, that opened its doors during this year, can be considered as a very important opportunity for both

teachers and students of scientific fields to enhance their level in English and start to use it in their studies and research papers.

3.6. Suggestions for Future Research

The current research has dealt with the investigation of teachers' and students' attitudes towards the use of English as a medium of instruction in scientific fields. EMI is a very broad area of research. In this regard, the following points deal with some possible areas of further research:

- The integration of English in the Algerian primary schools.
- The role of EMI in improving Algerian scientific research.

Conclusion

This chapter has mainly shed light on teachers' and students' attitudes towards using English in scientific fields, to know what kind of benefits they will have when they use it, and to identify challenges that may face them while applying it in Algerian universities. The results gathered from the students' questionnaire show that the majority of them have a positive attitude towards applying English as a medium of instruction despite the difficulties they face with the English language. They also showed a deep awareness of its importance as a mean of instruction.

Concerning the analysis of teachers' interview, the majority of our respondents stand with the decision of applying English to be the medium of instruction in scientific fields, they stated clearly the benefits of using English language as a mean of learning and teaching in the Algerian universities despite the hard circumstances and the difficulties that they may face because of this decision.

GENERAL CONCLUSION

The present study is based on investigating teachers and students' attitudes and perceptions towards using EMI in the scientific fields. Since English has assumed the role of an international language due to historical, political, and sociological factors and is widely used as an international language. One of the most significant trends in higher education in non-anglophone countries has been the growth in English Medium Instruction (EMI).

To achieve this aim, the present research adopted a combination of qualitative and quantitative method. The former was conducted with five teachers of Biology to identify their attitudes and perceptions towards using English as a medium of instruction. Then, a questionnaire was administered to one hundred second year Biology students in order to investigate their perceptions about the possible use of EMI in the teaching and learning process for scientific fields.

The first theoretical part of this dissertation tried to explore the different meanings of EMI and its importance in scientific fields. Furthermore, it shaded light on the challenges and the obstacles that both teachers and students may face while attempting to apply English as a medium of instruction. Besides to that, it focused on the Algerian context, starting with the socio-political profile of Algeria and the place of English in the Algerian context. It turned to focus more on the use of EMI in the Algeria university sector. Moreover, Since the concept of attitude is also a core element of the current study, it stressed the types and components of attitude, its formation, its different functions, its theories and models, in addition to its importance in the field of EFL Learning.

The third chapter provided a detailed analysis and interpretation of the results obtained from the students' questionnaire and the teachers' interview. It also clarified some limitations of the current study and suggests pedagogical implications for teachers, students, and policymakers.

Based on the results discussed in the last chapter, the research questions can be answered. The first question is concerned with teachers' and students' perceptions toward using English as a medium of instruction. The results showed that the majority of participants believe that English is important as it is the language of the world, the language of science, knowledge and technology. Additionally, the results have shown that they stand with the idea that English helps to have access to a wide range of up-to-date sources. Thus, it is clear that both teachers and students have a positive attitude towards using English as a medium of instruction.

The second question was set to explore the teachers and students' perceptions about the benefits that the use of EMI may bring for Algerian universities. According to the obtained data, it is noticed that the majority of participants agree that its application in Algerian universities will contribute better to make them occupy the highest international ranks, as well as their entry into one of the widest doors in international competitions in terms of scientific research.

The third question was related to what challenges are associated with the use of EMI for both teachers and their students. Based on the results, both teachers and students agree on the fact that the implementation of English to be a medium of instruction is a random decision that is issued without prior planning or studies. Further, the adaptation of English as a medium of instruction, necessitates a frame for teachers, raise their competencies and enable them to deal with English in a professional manner. In addition, this change needs motivation from the students' part to learn and deal with English, and to focus more on acquiring the scientific vocabulary necessary in their field of study.

According to the results gathered from teachers interview and students' questionnaire, it can be realized that both of them are aware of the importance of EMI in the process of teaching/learning. Students declare that they are interested in using the English language to receive their courses in different modules. Furthermore, both teachers and students explained their desire to incorporate the English language as the main language in scientific fields and to keep up with the world development. They, also, argue about the need of the English language to be closer to all what is new in scientific articles and fields.

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APPENDICES

Appendix A

Surdents' Questionnaire

Dear students

You are kindly invited to respond to this questionnaire which is a part of research that is carried out at the Department of English. This questionnaire aims at investigating your attitudes towards using the English language as a medium of instruction in the scientific fields. All your answers will be taken into consideration and the information you provide is anonymous and confidential. Finally, we are extremely grateful for your contribution and your valuable time.

Thank you in advance

Ms. Benassou Khaoula

Ms. Bourenane Djihane

Department of English.

University of 8 Mai 1945, Guelma.

Section One: General Information

Q1: what is your gender?

- Male
- Female

Q2: what is your age?

-years

Q3: How long have you been studying English?

-years

Section Two: English as a Medium of Instruction (EMI)

Q4: Are you exposed to modules using English language?

- Yes
- No

If yes, how many modules do you study in English?

.....

Q5: How do you assess your level of comprehension in English?

- Low
- Average
- Good
- Very good

Q6: Are you familiar with the term EMI?

Yes

No

Q7: What do you think the definition of EMI?

A. It is a practice in which scientific courses are taught in English

B. It is the use of the English language to teach in situation where English is the first language

C. It is the use of English as the primary medium of instruction, particularly where English is not the mother tongue of the students.

D. All of them

Q8: Do you agree that English should be used in the scientific fields?

Yes

No

If yes, why?

.....

.....

.....

.....

Q9: To what extent applying EMI in the scientific field is important?

- Extremely important
- Important
- Normal
- Unimportant
- Extremely unimportant

Q10: What do you think is the importance of using English as a medium of instruction?

- A. It opens doors to more information than any other language.
- B. It plays a key role in the world and functions as a passport.
- C. It is utilized as an Educational Medium of Instruction (EMI) to provide greater options for institution's development.
- D. All of them.

Q11: How much is good for Algeria to adopt EMI in scientific fields?

- A. Very good
- B. Good
- C. Bad
- D. Very bad

Section Three: Attitudes towards Using English as a Medium of Instruction

Q12: In which language do you prefer to study?

.....

Q13: How your English has become since attending this university?

- A. Stronger
- B. Weaker

Q14: What language/s do you use in your field of learning?

.....

Q15: Do you agree on switching to English?

- Yes
- No

Q16: How do you feel about attending a university where the medium of instruction is English?

.....

Q17: Do you face any problems in your courses because of your English-language level?

- Yes
- No

If yes, what are they?

- A. Lack of vocabulary
- B. Hard terms
- C. Problems in comprehension
- D. Problems in pronunciation

Q18: Do think that delivering courses in English would make them less interesting?

Yes

No

If yes, why?

.....

Q19: Does your department provide you with services to help you with your English?

Yes

No

If yes, what are these services?

.....

Q20: Do you think that using English as a medium of instruction will be beneficial?

Yes

No

If yes, what are these benefits?

A. Advancing University ranking

B. Better access to scientific articles

C. Communication with other universities

D. Positive influence on the wider community

E. All of them

Section Four: Further Suggestions:

Do you have any suggestions and/or comments about what you have dealt with in the previous sections?

.....

.....

.....

.....

Thank you for your collaboration

Appendix B

Interview for Teachers

Dear teachers,

The aim of the current study is to investigate your attitudes toward using English as a medium of instruction in scientific fields. The interview attempts to collect useful information about whether the use of English language will be beneficial for scientific fields or not. Your answers are very important for the validity of the research we are conducting. We would be very grateful if you take a part in this interview which will be recorded based on your permission.

Ms. Bourenane Djihane

Ms. Benassou khaoula

Department of English

University 8 Mai 1945, Guelma

Questions

1. Which language do you prefer to use for teaching?
2. What do you think is the importance of using English as a medium of instruction?
3. What are the benefits that the use of English as a medium of instruction will offer for university?
4. What is your attitude towards using English as a medium of instruction in Algerian higher education?
5. Do you agree on using the English language? If yes, please clarify
6. As a teacher who used to teach in French, what are the challenges that you may face when shifting to use English?
7. What is your expectation about the difficulties that can face students when using English as a medium of instruction?
8. In your opinion, what are the difficulties that the Algerian government may face when putting this decision into practice?
9. How do you think the teaching and the learning process will be after bringing English to be the medium of instruction?
10. Would you please offer some suggestions for better integration of EMI in scientific fields?

Résumé

Ce travail vise à étudier les points de vue des enseignants et des étudiants sur l'utilisation et l'importance de la langue anglaise comme moyen d'enseignement dans les domaines scientifiques. Pour atteindre cet objectif, on a utilisé la méthode de recherche descriptive qualitative, tandis que le questionnaire et l'entretien ont été les outils de collecte des données qualitatives principales où l'étude a été réalisée à l'intérieur et à l'extérieur des classes du département de biologie de l'université de Guelma, pour savoir si les enseignants et les étudiants acceptent l'utilisation de la langue anglaise comme moyen d'enseignement dans leurs domaines ou non. L'échantillon était composé de cinq (05) enseignants et de cent (100) étudiants de deuxième année au département de Biologie de l'Université du 08 Mai 1945 - Guelma. L'analyse des résultats a révélé que tant les étudiants que les professeurs savent l'importance de la langue anglaise, ils acceptent l'utilisation de cette langue à la place du Français dans les universités algériennes. De plus, la plupart des participants avaient une attitude positive envers l'utilisation de la langue anglaise comme moyen d'enseignement dans les domaines scientifiques. Sur la base de ces résultats, cette enquête propose quelques orientations pédagogiques pour les étudiants, les professeurs et les décideurs politiques pour les aider. Dans le processus d'application de la langue anglaise comme moyen d'enseignement.

الملخص

يهدف هذا العمل للتحقيق في آراء الاساتذة والطلاب تجاه استخدام اللغة الإنجليزية كلغة رئيسية للتعليم في المجالات العلمية. لتحقيق هذا الهدف، تم اعتماد المنهجية الوصفية النوعية للبحث العلمي. من أجل جمع البيانات الضرورية، استخدم البحث استبيان قدم لمئة طالب من مجموع مئة وستون طالبا من طلبة السنة الثانية بيولوجيا لجامعة قالمة كما اجريت مقابلات مع خمس أساتذة في نفس القسم وذلك لمعرفة آراء الاساتذة والطلبة حول استخدام اللغة الإنجليزية كوسيلة للتعليم في مجالاتهم. كشف تحليل النتائج أن كلا من الطلاب والاساتذة يدركون أهمية اللغة الإنجليزية، كما أبدوا اراء إيجابية حول موضوع استخدام هذه اللغة بدلاً من الفرنسية كوسيلة للتعليم في الجامعات الجزائرية خاصة في المجالات العلمية. وبناء على هذه النتائج يقترح البحث بعض التّوجيهات الابداعية لمساعدة الطلبة والأساتذة في عملية تطبيق اللغة الإنجليزية كوسيلة للتعليم.