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*Institute of Literature and Languages*  
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*Branch: English*

## **Investigating Teachers' and Learners' strategies to Implement English as a Medium of Instruction**

**The Case of Teachers and Learners at the Biology Institute at Mila  
University Center**

A Dissertation Submitted in Partial Fulfillment for the Requirement of the Master Degree in  
**Didactics of Foreign Languages**

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### Dedication

First and foremost, I would like to thank **God Almighty** for giving me the strength and capacity to accomplish this humble work in the hardest moments I have ever been through. A few months ago, I was thinking that it would be impossible for me to prepare my dissertation but God's kindness and mercy were greater than any obstacle.

I would like to dedicate this work and extend my thanks, gratitude and appreciation to:

My parents who have taught me to fight, to win, enjoy the taste of success, but never to give up, and to my dear family,

the one who taught me the meaning of patience, to the wonderful woman in this world my beloved mother "**Habiba**" who has always been my support and strength in my hard times.

the person who always makes me proud of myself to, the most respectful man in this world to, my dear father "**Omar**" who gave me what he could of love, support and trust,

my lovely and only sister "**Hanin**,"

my dear, kind-hearted bother Mouatassim Billah,

the pure soul of my aunt Laila, may God have mercy on her,

my beautiful students: **Mouatassim Billah ,Ritadj, widjdan, Amani ,Meyda**

,**Nermin and Omnia** I wish you the success of your BEM 2024,

my best friend and my soulmate **Omaima**, that always been with me in every step in my life Iam lucky for having you,

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to my kind friends and classmates with whom I shared a beautiful university journey with its happy and sad moments.

**Wissal**

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### **Dedication**

In the Name of Allah, Most Gracious, Most Merciful

This dissertation is dedicated to:

my beloved grandmother, I hope that God heals you,

my dear parents for the endless love, support, encouragement, and prayers they

gave me to accomplish this dissertation,

my only brother and my dear sister, your presence in my life brings warmth, laughter,

and endless love, Thank you for your support and encouragement,

all my friends who motivated and supported me all the way,

my aunt's sons and daughters for support and encouragement,

to all those who have been helpful, caring, and patient.

To these special names in my life I dedicate this work.

**“ Dounia”**

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### Abstract

The present study aims to uncover different strategies that teachers and learners use to implement English as a medium of instruction in a successful way at the Institute of Biology at Mila University Center. Four Questions are raised: (1) What are the strategies that teachers use to implement EMI successfully in class? (2) What are the strategies that learners use to understand the content in English? (3) What challenges do teachers face when incorporating EMI, and how do they address these challenges? (4) What challenges do learners face when incorporating EMI, and how do they address these challenges? To answer the research questions, the present research adopts a qualitative method. In order to gather data about students' and teachers' strategies, a questionnaire was administered to fifty (50) first-year students of biology at Mila University Center, in addition to an interview that was conducted with seven (7) teachers in the same department. The findings revealed that learners utilize strategies such as asking questions, self-encouragement, organization, seeking clarification, practicing, and repetition. While teachers utilize limited teaching strategies to facilitate EMI, ranging from delivering lectures while explaining concepts simultaneously to utilizing planners and present situations to acquire scientific terminology. Moreover, findings revealed that the majority of the participants had challenges using English as a medium of instruction. It ends with some recommendations for both teachers and students and suggestion for further research.

**Key words:** English as a medium of instruction, teachers' strategies, learners' strategies, biology, challenges.

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**List of Abbreviations**

**EFL:** English as a Foreign Language

**ELLS:** English Language Learning Strategies

**EMEMUS:** English-Medium Education in Multilingual University settings

**EMI:** English as a Medium of Instruction

**HE:** Higher Education

**L1 :** First language

**L2:** second language

**LLS:** Language Learning Strategies

**MOI:** Medium of Instruction

**Q:** Question

**TS:** Teaching Strategies



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**List of figures****Chapter Two : Investigating Learners' and Teachers' Strategies to Implement English as a Medium of Instruction**

|   |    |
|---|----|
| <b>Figure 1:</b> Students' Level in English.....  | 48 |
| <b>Figure 2:</b> The Language Used by Students to Learn Their Modules.....  | 49 |
| <b>Figure 3:</b> Students' Opinions Towards Using English.....  | 50 |
| <b>Figure 4:</b> The Importance and Benefits of Implementing English as a Medium of Instruction in Biology Institute..... | 51 |
| <b>Figure 5:</b> Services to Improve Students' English Level.....   | 52 |
| <b>Figure 6:</b> Problems Faced Due to English-Medium Courses.....  | 53 |
| <b>Figure 7:</b> Identifying Problems Faced in English-Medium Courses.....  | 54 |
| <b>Figure 8:</b> Students' Opinion about Delivering Course in English.....  | 55 |
| <b>Figure 9:</b> Strategies Utilized for English Language Study.....  | 56 |
| <b>Figure 10:</b> Learning Strategies for Biology Concepts in English.....  | 57 |
| <b>Figure 11:</b> Strategies for Compensating Limited Knowledge in English.....   | 58 |
| <b>Figure 12:</b> Strategies for Enhancing Learning and Understanding in English Studies.....                             | 59 |
| <b>Figure13:</b> Strategies for Engagement and Positivity.....  | 60 |
| <b>Figure14:</b> Peer Engagement Strategies for English Language Learning .....   | 61 |

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## Table of Contents

|                            |   |
|----------------------------|---|
| Dedication.....            | 2 |
| Acknowledgments.....       | 5 |
| Abstract.....              | 6 |
| List of Abbreviations..... | 7 |
| List of Figures.....       | 8 |
| Table of Contents.....     | 9 |

## General Introduction

|                                   |    |
|-----------------------------------|----|
| 1. Background of the Study.....   | 13 |
| 2. Statement of the Problem.....  | 14 |
| 3. Aim of the Study.....          | 14 |
| 4. Research Questions.....        | 15 |
| 5. Research Methodology.....      | 15 |
| 5.1. Research Method.....         | 15 |
| 5.2. Research Tools.....          | 15 |
| 5.3. Population and Sampling..... | 15 |
| 6. Structure of the Study.....    | 16 |

## Chapter One: Learners' and Teachers' Strategies to Implement English as a Medium of Instruction

|                   |    |
|-------------------|----|
| Introduction..... | 17 |
|-------------------|----|

### Section One: English as a Medium of Instruction

|  |    |
|--|----|
| 1.1.1 Definition of English as a Medium of Instruction.....              | 17 |
| 1.1.2 The Origins and Growth of English as a Medium of Instruction ..... | 19 |
| 1.1.3 The English as a Medium of Instruction Around the World .....      | 21 |
| 1.1.4 The Importance of English as a Medium of Instruction .....         | 22 |

---

|  |    |
|--|----|
| 1.1.5 Implementing English as a Medium of Instruction.....                 | 24 |
| 1.1.6 Challenges Related to Teachers.....                                  | 25 |
| 1.1.6.1 Teacher's Quality.....   | 25 |
| 1.1.6.2 Guidelines.....  | 26 |
| 1.1.6.3 Resources.....   | 26 |
| 1.1.7 Challenges Related to Students.....                                  | 27 |
| 1.1.7.1 Linguistic Challenges.....   | 27 |
| 1.1.7.2 Cultural Challenges.....   | 27 |
| 1.1.7.3 Structural Challenges.....   | 28 |
| 1.1.7.4 The Identity-Related (institutional) Challenge.....                | 28 |
| 1.1.8 English as a Medium of Instruction in the Algerian Universities..... | 29 |

## **Section Two: Learning and Teaching Strategies**

|  |    |
|--|----|
| 1.2.1 Language Learning Strategies.....                      | 30 |
| 1.2.1.1 Definitions.....                                     | 30 |
| 1.2.1.2 Features of Language Learning Strategies.....        | 32 |
| 1.2.1.3 Classifications of Language Learning Strategies..... | 33 |
| 1.2.1.4 Importance of Learning Strategies.....               | 36 |
| 1.2.2 Teaching Strategies.....                               | 37 |
| 1.2.2.1 Definition.....                                      | 37 |

---

|   |    |
|---|----|
| 1.2.2.2 Types of Teaching Strategies.....                               | 39 |
| 1.2.2.3 Designing Teaching Strategies.....                              | 42 |
| 1.2.2.4 Importance of Teaching Strategies.....                          | 42 |
| 1.2.2.5 Teaching Strategies for English as a Medium of Instruction..... | 43 |
| Conclusion.....   | 44 |

**Chapter Two: Investigating Teachers’ and Learners’ Strategies to Implement English as a Medium of Instruction**

|                   |    |
|-------------------|----|
| Introduction..... | 45 |
|-------------------|----|

**Section One: Research Methodology**

|  |    |
|--|----|
| 2.1.1 Research Method.....                       | 45 |
| 2.1.2 Research Tools.....                        | 45 |
| 2.1.3 Population and Setting .....               | 46 |
| 2.1.4 Questionnaire                              |    |
| 2.1.4.1 Description of the Questionnaire.....    | 46 |
| 2.1.4.2 Administration of the Questionnaire..... | 47 |
| 2.1.5 Teacher Interview                          |    |
| 2.1.5.1 Description of the Interview .....       | 47 |
| 2.1.5.2 Administration of the Interview.....     | 47 |

---

**Section Two: Analysis and Discussion of the Results**

|  |    |
|--|----|
| 2.2.1 Analysis of Student Questionnaire..... | 48 |
| 2.2.2 Analysis of Teachers' Interview.....   | 62 |
| 2.2.3 Discussion of the Results.....         | 66 |
| Conclusion.....                              | 67 |
| General Conclusion.....                      | 69 |
| Suggestions for Further Research.....        | 72 |
| List of References.....                      | 74 |

## Appendices

Appendix A: Students' Questionnaire

Appendix B: Teachers' Interview

Résumé

ملخص

## General Introduction

### 1 Background of the Study

In Algerian universities, teachers and learners used to apply French in Higher education because French was the language of the colonizers. Nowadays, it should be replaced with English (Benrabah,2014).According to Harroubia (2010), his department was working seriously on the possibility of utilizing the English language instead of French in universities, especially in scientific and technological fields.

One of the most significant developments in Higher education in modern times has been the use of English as a Medium of Instruction (EMI), as burgeoning literature on the topic demonstrates (Macaro, Seiter, Pun, An and Dearden,2017). EMI, or the teaching of content in English, has become increasingly widespread due to globalization (Dearden,2015).

EMI has been defined as “the use of the English language to teach academic subjects (other than English itself) in countries or jurisdictions where the first language (L1) of the majority of the population is not English” (Macaro,2018 p.19). It is a new trend in higher education that is used almost in every domain of life. EMI spread in the late 20 th and early 21 st centuries. In Algeria, Rahmaniah (2021) shed light on the poll posed recently on the official Facebook page of the Algerian Ministry of Higher Education and Scientific Research in order to apply English as a medium of instruction at university. The majority of Algerians, who were supposed to vote and show their (dis)acceptance, agreed with the idea of implementing English in universities. To this end, English becomes more of a necessity than any other Language.

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## 2 Statement of the Problem

English is an international language; it plays a crucial role in education, but this language proved its efficiency in all domains: technological and scientific inventions, medical development, and even setting a global understanding of different situations, phenomena, and issues. Through the spread of English, it becomes a medium of instruction.

English as a medium of instruction has gained prominence globally because of the demand for teaching and learning this language. Despite that, Algeria considered French to be the first foreign language. The historical influence of the French colonization for over a century has established French as the language of instruction in most scientific disciplines. However, recently, the ministry of higher education has utilized English in universities as the main medium of instruction.

The switch from French to English presents several challenges, highlighting the necessity for multiple and diverse strategies to cope with the new situation. These challenges encompass familiar teaching methodologies and the need to adapt instructional materials.

Consequently, there is a lack of comprehensive understanding among teachers and learners regarding the strategies necessary for effectively implementing English as a Medium of Instruction (EMI).

## 3 Aims of the Study

The aims of this study are to uncover different strategies that teachers and learners use to implement English as a medium of instruction in a successful way at the Institute of Biology at Mila University Center. Also, to know the challenges teachers and learners face when incorporating EMI.

## **4 Research Questions**

This study seeks answers to the following questions:

1. What are the strategies that teachers use to implement EMI successfully in class?
2. What are the strategies that learners use to understand the content in English?
3. What challenges do teachers face when incorporating EMI, and how do they address these challenges?
4. What challenges do learners face when incorporating EMI, and how do they address these challenges?

## **5 Research Methodology**

### **5.1 Research Method**

In order to investigate teachers' and learners' strategies to implement EMI in the Institute of Biology, the present research required the use of the qualitative descriptive method.

### **5.2 Research Tools**

The present study is conducted. We use a teacher interview and a learner questionnaire to collect the needed information. They would provide enough information about different strategies that the teachers and the learners use to implement English as a Medium of instruction in the Institute of Biology.

### **5.3 Population and Sampling**

The population of the current study consists of first-year students and teachers in the Institute of Biology at Mila University Center. The sample is selected randomly; it is composed



of fifty (50) first year students out of a population of 300 students, in addition to seven teachers out of 20. The reason behind choosing them as the population of the study is that they study many modules of specialty in English. The implementation of EMI in the Algerian context started with first-year license students.

## **6 Structure of the Study**

This dissertation consists of two chapters. The first chapter is devoted to the theoretical part of the study, while the second one presents the practical part. The first chapter is divided into two sections. The first one offers a review that helps define the concept of EMI. The second section focuses on teachers' and learners' strategies to implement EMI. The second chapter deals with the practical part of this study. It is divided into two sections; the first section provides a whole description of the research methodology, and the second is related to the analyses and interpretation of the data collected.

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## **Chapter One: Learning and Teaching Strategies for English as a Medium of Instruction**

### **Introduction**

Promoting a common language for international communication and academic exchange globally becomes a most. English as a medium of instruction plays a crucial role in facilitating access to a broad range of knowledge across various disciplines. This chapter is divided into two sections. The first one focuses on learners' and teachers' strategies to implement English as a medium of instruction. This section deals with EMI definition, its origins and growth, the English as a medium of instruction around the world, its importance, its implementation, challenges related to teachers, challenges related to students, and EMI in the Algerian universities. Whereas, the second section deals with learning strategies definition, its features, its classifications, and its importance. In addition to teaching strategies definition, its types, its designing, its importance, and teaching strategies for EMI.

### **Section One: English as a Medium of Instruction**

#### **1.1.1 Definition of English as a Medium of Instruction**

The medium of teaching in higher education has traditionally been the local language of the country where the institutions operate, and it remains the learners' native tongue in many areas of the world. However, English has recently become more widely utilized as a language of teaching in Europe and many other nations (Dearden, 2014; Doiz et al., 2013). Graddol (2006) reported that more than half of overseas students are now taught in English. This is because English is frequently used to disseminate research findings through books, journals, and conferences (Mauranen et al., 2010).

The definition of English as a medium of instruction (EMI) differs depending on the context. Hellekjaer (2010) defined EMI as teaching non-linguistic courses, such as medical, physics, or political science, in English to foreign language students. It is frequently taught by

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a lecturer whose first language is not English. In addition, 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 majority of the population's first language (L1) is not English. That is, there appears to be a rapid global movement in non-Anglophone countries from teaching English as a foreign language (EFL) to using English as the medium of instruction (EMI) for academic purposes. Nicola and Heath (2021) provided alternative definitions that have sought to broaden the scope of what is labelled EMI to include Anglophone contexts, given that the increasing number of L2 English speakers in such universities has created multilingual educational contexts; however, the extent to which such contexts are comparable is still hotly debated.

The significance of English language development in EMI contexts has aroused debate, as well as whether the current definitional scope is too narrow in omitting English medium educational practices in Anglophone settings. According to Pecorari and Malmström (2018), some members of the EMI research community understand EMI more broadly, including “Contexts in which English is the dominant language and English language development is supported and actively worked for” (p. 507). Similarly, Baker and Hüttner (2016) noted that ignoring Anglophone contexts from EMI is unhelpful by failing to include the experiences of multilingual students in Anglophone colleges which study through their L2. Dafouz and Smit (2016) favored the name English-Medium Education in Multilingual University Settings (EMEMUS) because it is “semantically broader, as it does not specify any particular pedagogical approach or research agenda” (p. 399).

Dearden (2015) reported that EMI is an increasing global problem across all stages of schooling and educational contexts. EMI is probably an umbrella word encompassing academic disciplines taught in English, with no clear reference to the goal of improving students' English. It is a phrase used globally, usually in higher education (HE). As a result, Lasagabaster et al.

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(2014) reported that, globally, an increasing number of universities are rushing to provide both undergraduate and postgraduate degrees in English.

In the context of implementing EMI, it is crucial for teachers to possess a strong command of the English language, as they serve as the medium for delivering content to students. Teachers must show adaptability and explore various approaches to enhance communication within the classroom, including employing strategies such as code-switching when learners face difficulties with complex terms. Additionally, EMI educators should employ diverse teaching strategies tailored to meet the needs of their students. For instance, they could inquire at the conclusion of each session if any concepts were unclear, and if students struggled to understand certain points during the lesson, the teacher should rephrase and elucidate explanations for better comprehension. According to Richards and Pun (2022), successful learning through EMI relies on the comprehension and integration of concepts, schemas, and knowledge that form the fundamental content of various academic subjects within the school curriculum, such as mathematics, science, or social studies.

### **1.1.2 The Origins and Growth of English as a Medium of Instruction**

The use of the EMI approach started in the British post-colonial countries where English was considered the official language that is used in formal situations rather than the native language of the community. In these places like India, Pakistan, and Ghana, when the colonial powers withdrew, they left their policies which were later adopted, and they are still applied now. The EMI approach is not an exception to colonial policies. At that time, these countries were obliged to follow it because they were weak and do not have any kind of knowledge; all sciences were in English, French, or German. Richards (2022) in that regard said that “English is a heritage of the colonial administration”(p.123).

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Later on, the EMI was increasingly used at all levels of education in countries such as Sweden, Holland, China, and Japan where normally English is just a second or a foreign language. Even though these countries are strong, and it was easier for them to use their mother tongue for teaching lectures, they choose the EMI approach because they want to internalize higher education and offer chances for students from different parts of the world to come and study academic subjects using one medium which is English (Richards ,2022).

One of the most important developments in Higher education is the use of EMI, a global educational phenomenon that is quickly spreading through all educational institutions worldwide. There seems to be an immediate change that is taking place in non –Anglophone countries from using EFL to using it as the main medium of instruction for subjects like science, biology, and medicine.

According to Crystal (2003), the historical story describes the spread of English throughout the world, starting with the first trips to the Americas, Asia, and the Antipodes. This growth was facilitated by the nineteenth-century colonial activities in Africa and the South Pacific, and it got to an important point when it was adopted as an official or semi-official language by many newly independent countries in the middle of the twentieth century. There are now English-speaking people on every continent.

Furthermore, English seems to be spreading more quickly. Graddol (1997) expected that while the number of people speaking second languages would increase, the number of people speaking native or first languages would decrease. According to Crystal's (2003) estimation, there are around 33.7 million L1 English speakers throughout 56 countries, while the number of L2 speakers is thought to be between 1.2 and 1.5 million. To put it simply, this means that a diverse range of individuals spoke and understood English on a global level.

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Because of this, English is the language of much of the world's knowledge, especially in the fields of science, technology, and education where knowledge is accessible. In the light of the foregoing, Macaro et al. (2018) confirmed that it is now widely acknowledged in higher education that EMI is expanding quickly and in the majority of countries worldwide.

According to Wanphet and Tantawy (2018), "English has advanced from being a second language to being the language of academic subjects in higher education" (p.145). Thus, English is used as the medium of instruction for subjects like science, geography, and economics- a practice known as EMI.

### **1.1.3 English as a Medium of Instruction Around the World**

With the demands of this modern era, the employment of a mutual communication tool becomes increasingly important in order to facilitate all aspects of life. As a result, many countries encourage the use of English in all fields and frequently implement EMI policies in educational settings. According to a British Council report (Dearden, 2014), EMI policy is already established in 55 non-Anglophone countries, including Japan, China, Turkey, Spain, Portugal, and South Africa. This demonstrates that world countries prefer to teach academic courses in English because they see it as a common language for academic, scientific, and business communication.

In European countries, the primary objective of implementing English as a Medium of Instruction (EMI) was to foster the internalization of education through English, aiming to enhance coherence and collaboration within European universities. This initiative aimed to facilitate exchange programs between universities and attract students from diverse geographical backgrounds by utilizing a common international language for all academic studies. Coleman (2010) highlighted the growing interest in EMI among esteemed universities in Europe, leading to the establishment of numerous programs aligning with this trend. Ammon

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and McConnell (2002) conducted a research presenting the adoption of EMI programs in various national European universities for multiple reasons. For instance, France has 72 universities, Germany has 356 universities, and the Netherlands has 100 universities implementing EMI programs. Additionally, by 2002, it was reported that all higher education institutions in Finland and Netherlands offered at least one English-medium program, indicating a shift towards English-medium instruction becoming the norm rather than an exception (Suviniitty, 2012).

Asia universities also adapted to global changes, recognizing the advantages of the English language. According to Kirkpatrick (2012), since 2009, Asian had opted to adopt English as its official working language. Gardner (2015) noted that top-tier Asian universities are now offering distance education on a global scale, while others are emerging to provide international education opportunities. Specifically, Malaysian universities are providing English-language preparatory courses to students from various Asian countries. Additionally, Tsui (2017) indicated that Taiwan has followed the world in implementing EMI curricula at the tertiary level. Furthermore, research conducted by Bolton and Botha (2020) revealed that countries across Asia, including Japan, Indonesia, China, Thailand, and Korea, as well as Arabian nations like Saudi Arabia, favored the use of EMI programs across all domains, despite the associated difficulties and challenges of it as the most conducive language for their development.

#### **1.1.4 The Importance of English as a Medium of Instruction**

Nowadays, English is the global language of technology. It plays an important role in the world, and it works like a passport because it has become the language of technology and international. As a result, most people developed their global businesses through English.

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Implementing English as a medium of instruction in non-English public schools is heavily affected by rising global demand for the English language (Coleman, 2006) as well as scientific and technological innovation. Moreover, according to Graddol (2006), English is used as an educational medium of instruction (EMI) to enhance institutional development. It is also widely utilized as an international language in several fields like business, education, diplomacy, technology, and international organizations. Many countries have agreed to use English as a global language.

Coleman (2011) argued that “English plays a vital role in increasing employability, facilitating international mobility (employability, facilitating abroad), unlocking development opportunities, accessing crucial information, and acting as an impartial language” (p.18). According to Wang and Cai (2009-2014, as cited in Jiang et al., 2019), EMI is a solid foundation for achieving English as a second language (ESL) and English as foreign language (EFL) students’ academic and professional goals.

According to Doiz et al. (2013), English-medium dominance stems from social, economic, and technological progress, as well as increased use of English in higher education due to globalization. Foreign colleges, faculties, and higher education institutions use EMI to internationalize their course curricula. EMI is being promoted by policymakers, administrators, teachers, and parents in some countries as a means of internationalizing education, allowing students to participate in a global academic and business community. It is also seen as a means of increasing global mobility and strengthening the English-speaking capacity of home countries. In this sense, EMI provides a number of benefits to instructors. It can lead to greater work opportunities both locally and globally, teaching mobility within the country and abroad, knowledge of Western culture, and participation in multilingual societies (Galloway et al., 2017). Moreover, it helps them to improve their English skills, participate in foreign seminars, and publish research in academic journals.



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Furthermore, Karvonen (2017) added that using English as a medium of instruction offers better job opportunities and career development. English is widely used for second language acquisition, scientific research, global communication, and employment in many countries. Adopting EMI improves access to English materials and leads to a better curriculum. According to him, both students and teachers have improved access to English-language resources, including foreign websites and literature.

Both Karvonen (2017) and Luanganggoon (2020) argued that English as a Medium of Instruction (EMI) serves as a facilitator for communication among diverse individuals and communities globally. They argued that adopting English as a common language would help everyone ease interaction within international and involvement communities. Despite practical challenges, EMI has been widely embraced in non-native English-speaking countries, including foreign colleges and international programs in higher education institutions, as a strategy for internationalization.

According to Sah (2020), EMI is an “instructional model of teaching non-English academic subjects through the medium of English in educational settings where English is not the mother tongue of most students, which aims to facilitate the learning of content knowledge and English skills” (p.1).

### **1.1.5 Implementing English as a Medium of Instruction**

The implementation of EMI in public schools has proven difficult. Teachers lack the English language ability and pedagogical knowledge required to present content in English. These findings are supported by Hamid et al.'s (2013) study, which looked at medium-of-instruction (MOI) policies in ten Asian nations and concluded that English implementation is "fraught with difficulties and challenges" (p. 11). Similarly, previous research studies conducted by Coleman and Nunan (2011, 2003, as cited in Phyak, 2017) argued that "English language teaching is increasingly embraced as an important aspect of educational reforms in

developing countries, but local challenges, a lack of resources, and pedagogical practices are often overlooked" (p. 1).

Although teachers utilizing EMI in their lectures lack basic English language and pedagogical competence, they have attempted to use a variety of strategies and resources to make their classes more effective. Previous research found that some professors have used translanguaging pedagogy to help students acquire core knowledge and break down student quiet in class. Phyak (2017) described translanguaging as a "meaning-making process through functionally grounded hybrid and fluid language practices" (p. 10).

In other words, translanguaging is a method of bilingual or multilingual education and natural language practice in which learners' existing total linguistic knowledge is used as a resource to learn a specific language, allowing access to various linguistic features of autonomous languages in order to maximize communication competence. Previous research revealed that successful training for English language learners (ELLs) should incorporate heritage languages into the classroom (August & Shanahan, 2010).

### **1.1.6 Challenges Related to Teachers**

#### **1.1.6.1 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.

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### 1.1.6.2 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.

### 1.1.6.3 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.

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### **1.1.7 Challenges Related to Students**

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 sorts of problems found in EMI: linguistic challenges, cultural challenges, structural challenges, and identity-related (institutional) challenges.

#### **1.1.7.1 Linguistics Challenges**

Linguistic challenges are those related to language issues that both lecturers and students in EMI programs face. According to Hellekjaer (2010), these problems are frequently encountered by non-native students, who struggle to understand native lecturers accented English and have difficulty 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.

#### **1.1.7.2 Cultural Challenges**

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, according to King (2013), a speaker from Britain may be familiar with a presentation style that is profoundly intuitive, while such a style is not viewed as the dominant dynamic in Thailand colleges, 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

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level of the students as well as culturally irrelevant for the local students. Another type of cultural challenges 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.

### **1.1.7.3 Structural challenges**

Bradford (2016) added structural challenges that are related to overall programmatic coherence and included issues related to an insufficient number of EMI courses and support staff that cannot work with diverse populations. 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 (Macaro et al.,2018).

### **1.1.7.4 The Identity-Related (Institutional) Challenge**

Finally, according to Bradford (2016), the identity-related (institutional) challenge is related to how the EMI program is perceived from outside, the identity of the EMI program, the lecturers who are teaching the EMI program, and the students' enrollment. Institutional identity, particularly the preoccupation with how it is perceived by the rest of the world, such as in the World 14 rankings, appears to be a growing concern among higher education institutions seeking to internationalize as a key driver of EMI policy (Knight, 2015).

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### 1.1.8 English as a Medium of Instruction in the Algerian Universities

Algerian society stands at crossroad in its history. Language is a frequent topic of discussion in the country. Since the start of the popular movement, many people have spoken out against the French language, which has been spoken in Algeria for more than a century and a half. Algerians believe it is high time to remove the French language in Algeria, stating that it is a colonizer's language, not an international business language, and should be substituted by English. This concept of switching languages has previously appeared since former Minister of Higher Education Rachid Harraoubia (2010) who indicated that his department was seriously considering the use of English instead of French in universities, particularly in science and technology. Tayeb Bouzid, who was appointed Minister of Higher Education in April, 2019 announced his proposal on his Facebook page on August 20th, after the conclusion of an Algerian national meeting universities. "In order to increase the visibility of research in higher education institutions," Bouzid wrote, "and to open up to the international environment... it has been decided to set up a think tank of specialists and administration officials to present proposals for promoting the use of English in teaching and research (...). I hope that my graduate research next year will be in English. I believe that English is the future in Algeria." Ben Sari (2001) reported that Bouzid has been a strong advocate for using English as the primary teaching language in Algerian higher education and relying less on French, the language of the former colonial state. In his previous post as rector of the University of Batna2, from 2015 to 2019, Bouzid called for gradually replacing French with English, according to the Algerian news website El Watan. In a letter to the rectors of the nation's universities in July, the minister asked that official correspondence be written in Arabic and English. Speaking at Mentouri University in Constantine on 8 July, 2019. El Watan reported that Bouzid said, "French does not get you anywhere!"

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According to Ghanmi (2019), (Algerian) "Within the framework of the policy to encourage and strengthen the use of English to give better visibility to education and scientific activities in higher education, I encourage you to use both Arabic and English in official documents" (p. 13). He stated, "The French language does not get us anywhere" (p. 13). According to Ghanmi (2019), the decision to replace French as Algeria's primary foreign language sparked a heated debate about the country's cultural and linguistic ties to France, 57 years after French colonialism ended. English is considered the language of science and technology, suggesting that learning it as a first foreign language can be beneficial. English as the language of science and technology, is thought to improve education quality and encourage social prosperity in Algeria.

The Minister of Higher Education and Scientific Research Prof. Kamal Badari, decided to implement the decision, which stipulates the use of the English language as a medium in education, especially for scientific subjects. This decision came in July 2023 and was numbered 176. It stipulated the application of the English language in universities due to its importance, as it is considered the language of the world.

## **Section Two: Learning and Teaching Strategies**

### **1.2.1 Language Learning Strategies**

#### **1.2.1.1 Definitions**

Any learning process necessitates modifying a method or approach to achieve the learning goals. One of the most crucial aspects of the learning process is knowing "what" to use and "how" to use it. However, when it comes to learning a language, humans employ a variety of ways.

Researchers described learning strategies in several ways. For example, Rubin (1987) defined language learning strategies as behaviors, steps, or techniques that learners apply to

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foster language learning. Those strategies contribute to the development of learner's language system and directly impact learning. Furthermore, the definition by Oxford (1990) included cognitive, emotional, and social aspects of language learning strategies that enhance learner's proficiency and self-esteem (Oxford, 1990; Ehrman & Oxford, 1990).

Rigeney (1978) provided another early description, defining language learning strategies as conscious processes or behaviors performed by language learners to improve the acquisition, storage, retention, recall, and use of new information. Oxford et al. (1989) agreed with Rigeney (1978) on language learning techniques, stating that they improve and assist language acquisition. They described LLS as activities, behaviors, stages, or techniques. For example, looking for target language conversation partners or encouraging oneself to accomplish a tough language activity are both strategies employed by learners to increase their learning.

O'Malley and Chamot (1990) gave a more focused definition. They described learning strategies as methods employed by foreign language learners to remember and organize components of their second language. One approach for learners to be actively involved in their own learning is to adopt strategies, which are ideas and activities that help them grasp, learn, or retain information. For them, learning strategies may include focusing on specific aspects of new information, analyzing information during acquisition, organizing or elaborating on new information during the encoding process, evaluating learning at the end of the process, or assuring oneself that the learning will be successful in order to overcome anxiety.

According to Gass and Selinker (2009), language learning strategies are conscious processes that enhance the learning or use of a second or foreign language by storing, retaining, recalling, and applying information. According to Richards et al. (1999, p. 208, as cited in Griffiths, 2004), "learning strategy refers to a learner's approach to understanding and using language, including word meanings and grammatical rules".



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All of the definitions provided by the various scholars can lead to the conclusion that language learning strategies are conscious or unconscious strategies and activities that learners employ to improve their language learning process. These strategies can be any action or activity that learners can engage in to help them learn, and they can help students increase their language abilities by enhancing their confidence, motivation, and overall learning ability. These strategies are applicable to every language and can help learners achieve greater success in their language learning journey.

### 1.2.1.2 Features of Learning Strategies

Learning strategies involve internal mental actions, but they may also involve physical actions as well. Different writers have used different terminologies to address the term "strategies", such as "learner strategies" by Rubin and Wenden (1987), "learning strategy" by O'Malley and Chamot (1990), "language learning strategies" by Oxford (1990), etc. All the authors share common features.

Language learning strategies are learner-generated and adopted by the learners themselves. Learning strategies include both general approaches and specific actions or techniques used to learn an L2. They allow learners to become self-directed, and learning strategies are problem-oriented. Learning strategies help to develop competency in learners, and they may be either visible or unseen. They use information and memory and they are goal-oriented. Some strategies are behavioral, while others are mental or affective. Thus, certain strategies are directly observable, whereas others are not. Linguistic strategies can be performed in L1 and L2. Learning strategies are sets of processes and routines for organizing. The use of learning strategies is determined at a meta-cognitive level. They are the conscious plan of the learner. Language learning strategies enhance language learning and help to develop language proficiency, as evidenced by the learner's ability to listen, speak, read, and write in the second or foreign language.

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### 1.2.1.3 Classifications of Language Learning Strategies

Language learning strategies refer to actions taken by learners to improve their language acquisition. Scholars have classified learning strategies into various sorts. Most of their efforts to classify these strategies result in nearly identical categorizations of language acquisition strategies with no significant changes. In what follows, Rubin's (1987), Omalley and Chamot's (1990) and Oxford (1990) language learning strategies classifications will be presented.

Rubin (1987) who is an expert in the field of learning strategies distinguished between strategies that contribute directly and indirectly to the learning processes. According to Rubin (1987), learners employ three primary sorts of strategies; cognitive learning strategies, metacognitive, and social strategies. Some contribute directly, while others contribute indirectly to learning.

First, learning strategies which are divided into two major strategy categories that contribute to the development of the learners' language system. The first one is cognitive learning strategies, which refer to learning operations that necessitate direct examination and change of educational information. Rubin (1987) identified six primary cognitive learning processes that contribute directly to language learning: clarification or verification, using and inductive inference, deductive reasoning, practice, memory and monitoring. The second type is metacognitive learning strategies, these are used to manage, monitor, or self-directed language acquisition. They involve various procedures such as planning, prioritization, goal setting and self-management. Second, communication strategies are utilized by speakers when presented with some problem due to the fact that their communication finishes outside of their communication means or when confronted with misunderstanding by non-communication speakers. Finally, social strategies are exercises that learners can use to practice their language. Although these strategies give presentation to the target language, they contribute indirectly to

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language learning because they do not immediately lead to the non-communication and use of language (Rubin1978).

O'Malley and Chamot's (1990) took a different turn in classifying learning strategies. They classified these strategies based on three main types which are: cognitive, socio affective and meta-cognitive strategies. Cognitive language learning strategies involve various ways, including retaining new words and phrases, deducing grammatical rules, using previously learned rules, and predicting unknown word meanings. There are various ways to arrange new knowledge and connect it to previously learned language. Cognitive strategies facilitate language learning for tasks such as watching TV in English. They perform cognitive processing functions such as inferencing, rehearsing, and deducing. Cognitive strategies refer to problem solving techniques. These strategies necessitate direct analysis, synthesis and change of learning resources. Analysis and synthesis affective language learning strategies refer to acts taken by learners during encounters to improve their own language acquisition. According to O'Malley and Chamot (1985, as cited in brown, 1994), socio affective strategies involve social mediating and interpreting with others. These refer to how learners connect with one to another, for example, through cooperation or categorization questions. Social strategies rely on assistance from others. Learners cooperate with others and seek explanation or verification. They focus on emotions, motivation, attitude, and social integration when learning a language and culture. These strategies help learners manage their emotions, motivations, and attitudes towards language acquisition. Third, meta-cognitive language learning strategies let learners regulate their own language acquisition. Meta-cognitive strategies manage language learning through planning, monitoring, and evaluation. They have executive functions and include selective attention, planning, and appraisal. The later refer to tactics not learning related tactics not learning strategies themselves. Meta-cognitive strategies let learners regulate their own cognition through planning and evaluation, and post-evaluation of language learning activities.

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According to O'Malley et. al. (1985, as cited in Brown, 1994), "meta-cognitive" refers to executive function and learning processes that involve planning and thinking about the process.

On the other hand, Oxford (1990) divided language learning strategies into two main classes; direct and indirect strategies. Direct strategies complement the meaning of language through the use of different non-verbal devices and paralinguistic features such as gesture pitch and volume. While indirect language acquisition strategies, which do not directly include the subject matter, are necessary for language learning.

Direct strategies include: memory strategies, cognitive strategies and compensation strategies. While indirect include three subtypes which are: meta-cognitive, affective and social strategies. Firstly, direct strategies are directly involved to the target language, such as reviewing and practicing. Direct language learning strategies, which directly support learners in learning the subject matter. The types of direct learning strategies are given as follows: Memory strategies employ mental processing for associating language information and memorizing language rules, systems, and information. It aids in entering information into long-term memory and retrieving information when needed for communication. They include activities such as grouping, imagery rhyming, and structure interviewing. Memory strategies help learners link one L2 item or concept with another. They enable learners to learn and retrieve information. For example, to make associations with what has already been learned, one must repeatedly pronounce new words in order to remember them. Second, cognitive strategies are used for revising internal mental models and receiving and producing messages in the target language. Some cognitive strategies are: reasoning, analyzing, summarizing, and practicing. Those strategies are used for memorizing and manipulating the target language structure. They are related to working out language knowledge. Third, compensation strategies are those that enable students make up for limited knowledge, such as guessing meaning from the context in reading and listening and using synonyms and gestures to convey meaning when

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the precise expression is not known. They are needed to overcome any gaps in knowledge of the language (Oxford, 1990).

Indirect strategies include meta-cognitive strategies which refer to how learners regulate the learning process. Meta-cognitive strategies motivate learners to plan and monitor their learning. They refer to how students manage the learning process, enhancing learners' executive control by promoting planning, organization, focus, and self-directed learning. In addition, affective strategies are linked to students' sentiments. They help learners manage emotions, motivations, and attitudes connected to language acquisition. Affective strategies include reducing anxiety, encouraging self-belief, and rewarding oneself. The last one is social strategies which entail learning through interactions with others. Social strategies include asking clarifying questions, communicating with native speakers, cooperating with peers, and being conscious of others' ideas and feelings. They facilitate collaboration and understanding of target cultures and languages among learners (Oxford,1990).

#### **1.2.1.4 The Importance of Learning Strategies**

Language learning strategies are essential in second language learning. They help learners become more conscious of their learning style. Research indicated that certain language learners outperform others in terms of proficiency. According to Wenden (1985, as cited in Brown, 1994, p. 107), "learning strategies are the key to learner autonomy". Adopting language learning practices can help poor learners learn more effectively. Understanding language learning processes is essential for second language teachers who want to improve their students' communicative competence and language acquisition. According to Oxford (1990, pp. 93–94), "Language learning strategies are especially important for language learning because they are tools for active, self-directed movement, which is essential for developing communicative competence". Language learning strategies aim to enhance communicative competence, the ultimate goal of language instruction.

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Language learning strategies are crucial for improving students' communicative competence and overall language proficiency. Learners employ several methods to complete assignments and process fresh input. Language learning strategies reflect learners' approaches to tasks and problems during the learning process. Language teachers can gain insight on their students' ability to appraise situations, plan, and select appropriate abilities to comprehend and retain new information in the classroom.

Language teachers must consider learning strategies used by their learners. Teachers can tailor their lessons to align with the learning strategies of their students. Language learners rely heavily on effective learning practices. Learning strategies are unique acts, behaviors, strategies, that help learners learn their target language. Language learners can profit from learning strategies by abandoning some and adopting others to improve their success and ease of language acquisition. Being aware of Language learning practices is crucial for teachers, learners, course designers, and other stakeholders.

### **1.2.2 Teaching Strategies**

#### **1.2.2.1 Definition**

Different viewpoints were used by researchers to define teaching strategies (TS). Teaching strategies can be described as a structured plan, approach, or set of actions aimed at achieving specific educational objectives (Richards & Jack C. & Rodgers. 1986). According to Herrell and Jordan (2004, p.5), TS are the strategies that can be used to support the learning process across curriculum areas. According to Picard (2004), teaching strategies are methods that educators use to support student's participation and learning in the classroom. These strategies have to be created with the requirement, abilities, and goals of the learner in mind (Waleed et al., 2015). Furthermore, TS were defined by Wandberg and Rohwer (2010) as the procedures, processes, methods, techniques, systems, and structures that an instructor uses in a lesson.

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As a result, TS are essential to classroom education. Teachers would be randomly projecting material that does not engage students or serve to guide them if these strategies were not used. As Wandberg and Rohwer (2010) declared, teachers should select the proper ways to enhance students' learning in various language domains (Waleed et al., 2015). In addition, teaching strategies are tailored to the needs and learning styles of students, promote active participation and critical thinking, and support the achieving of desired learning outcomes.

According to Stone and Morris (1972 cited in Issac 2010), teaching strategy is a comprehensive plan for a lesson. It encompasses the structure, instructional objectives, and a detailed outline of the tactics needed to execute the strategy. Isaac (2010) also explained that teaching strategies involve the teacher's behaviors exhibited in the classroom, such as developing these strategies, providing appropriate stimuli for timely responses, reinforcing learned responses, and enhancing responses through additional activities. It is widely recognized that teaching strategy is a crucial component of instructional design (Reiser & Dempsey, 2011).

Then, a teaching strategy leads to an approach that optimally combines and organizes methods, resources, and participant groupings. These components are integrated into operational structures and are founded on a systematic perspective to facilitate active and creative knowledge acquisition and to streamline the training process (Cerghit, 2006).

Gilin (2017) defined teaching strategy as the teachers' capacity to carry out tasks in the classroom by using an effective teaching pattern that is easily accepted by students and stimulates student enthusiasm for engaging in the learning process.

Teaching strategies are fundamental to the educational process, each possesses unique attributes that contribute to effective teaching and learning. Firstly, a teaching strategy refers to a broad plan, process, or approach for executing the teaching assignment. As a result, it gives instruction structure and direction. Secondly, it acts as a means of transmitting the educational

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content from teacher to learners. Thirdly, various teaching strategies are merely different ways of assisting students in learning. Furthermore, teaching strategies assist educators in choosing the best ways to introduce concepts to students engage them in the learning process, and choose instructional resources that will make learning engaging and fun (NCERT, 2013). Additionally, they facilitate the best possible integration of teaching ideas and maxims into the classroom. Finally, teaching strategies encompass the actions taken by both the instructor and the students to establish a suitable learning environment that will enable the achievement of the goals.

### **1.2.2.2 Types of Teaching Strategies**

According to Khairunnisa and Istikharah (2019), there are numerous problems that teachers experience when implementing the EMI teaching process. As a result, EFL teachers use teaching strategies to ensure the success of EMI courses and to help students understand the subject. There are numerous teaching strategies; questioning strategies, instructional strategies and explaining strategies.

Firstly, questioning strategies are vital in creating an active classroom environment and play a crucial role in the teaching process; when the teacher asks questions, students and teachers interact. According to Cotton (2001, as cited in Khairunnisa and Istikharah, 2019), teachers asking questions in the classroom is the first instructional stimulus to impart content to students and directives for students on what to do. The use of questions promotes learning activities, and students will be more effective in increasing their academic performance. In this situation, question methods make students more focused on the teaching topic and capture their attention to answer the teacher.

Secondly, instructional strategies are teacher strategies in the learning process in EMI classes, they are teacher strategies used to help students understand English content. In this type of strategy, EFL who provide English-language instruction must be able to focus attention, organize information that is interesting and easy for students to understand, and monitor student



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learning and achievement (Khairunnisa & Istikharah, 2019). To explain the subject to students using flexible instructions, systematic, interesting, and successful instructions are required to understand the teacher's explanation. According to Houck (2012), teachers who deliver instruction use a variety of methods and materials, as well as modeling instructions and practicing teaching skills, in order to impart knowledge and concepts to learners. In the learning process, strategies such as giving instruction support through multimedia, such as videos, slides, and dictionaries, are used (Robb, 2003, as cited in Khairunnisa & Istikharah, 2019) in giving instructions without feeling insecure, so that teachers do not feel apprehensive about utilizing EMI. In the educational environment, teachers must be comfortable and have strong self-confidence to support the achievement of learning with the application of EMI in the classroom.

Lastly, explaining strategies are strategies that teachers apply for the teaching process in the classroom. In explaining the material, several strategies can be used, namely making a clear outline of the teaching materials to make it clear to students in a structured manner. Teachers who have critical thinking and good explanations can focus student' attention and provide clear explanations for each material.

Moreover, according to Killen (1996), there are numerous teaching strategies that can be used in the process of teaching languages. Some of these strategies include the following ones: direct instruction, discussion, small-group work, co-operative learning and problem solving.

The first one is direct instruction. It is highly structured and teacher-centered and includes the teacher transferring information directly to a student and the teacher doing the most while talking. For example, a teacher gives explicit instruction on grammar rules and vocabulary, followed by guided practice activities and feedback.

The second one is discussion. Students can use conversation to compare their views to those of other students in any type of school setting. The teacher will lead the conversation and

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correct course if it goes off course. For example, in grammar lessons, students talk about active and passive voice. They look at an example sentence. They find the subject, verb, and object and talk about how changing the sentence structure. This helps students understand grammar better and write more clearly.

The third is small-group work. The primary objective of small-group work, which focuses on the students, is to produce evidence of their understanding through a variety of activities, such as small-group work discussions, worksheet completion, solving problems, or presentations. The teacher should facilitate and provide guidance to the various groups. For example, in science class, students work in small groups to conduct experiments to learn about chemical reactions. Each group is responsible for mixing and observing results.

The fourth is co-operative learning. It can occur between two students working together or in small groups. Students learn from each other's knowledge; thus, teachers should pair up students who will collaborate. As an example, students work together in small groups to complete a science experiment, with each student doing a specific role.

The last one is problem solving. It is a strategy that is frequently utilized in universities. The students should work with English teachers to better understand the language needs of EMI students, using their past knowledge to help them along the way.

In addition, Wehrli (2003) described these instructional strategies; games and brainstorming. Games serve as a motivator and a chance for the application of concepts, including competition, participation, drills, and feedback, into the learning process. Like in Biology class, students play a card game where each card represents a different concept. By correctly identifying the concepts and understanding their interaction, students reinforce their understanding in a fun and engaging way. Then brainstorming is the process of coming up with ideas, it suspends judgment until the maximum number of ideas is produced. These strategies

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can be adapted and combined based on the needs of individual students and the learning objectives of the lesson.

### **1.2.2.3 Designing Teaching Strategies**

Facilitating a teaching activity is a network or collection of choices made by the instructor to link the most important aspects of his job and to construct the optimal answer given the educational context. The teaching strategy involves deciding the training protocols to use in connection to the subject being trained. It is a common knowledge that the instructional design's most important instrument is the teaching strategy (Stefan,2003; Reiser & Dempsey,2011; & Regeluth,2013).

Furthermore, a didactic approach to teaching and learning is produced by the teaching strategy, which combines and arranges participant groupings, means, and techniques in the best possible way (Cerghit, 2006). It is acknowledged that every trainer is free to create their work, including charts, graphs, drawings, and tables.

### **1.2.2.4 Importance of Teaching strategies**

Teaching strategies are crucial for implementing desired behavioral changes in students in a methodical and well-planned manner, teaching strategies must align with the learning objectives. In the context of teaching and learning, different strategies have varying attributes and levels of significance. The most important and common tool for imparting knowledge is the teaching method (Beck, 1998). It can apply to encourage critical thinking, teamwork, creativity and attitudes in learners. It gives educators the opportunity to reflect critically and logically on their own strategies both within and outside of the classroom. Moreover, it makes boring material exciting and fosters a positive teacher-students' relationships. Additionally, it

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facilitates better comprehension and enhanced recall by frequently offering interactive atmospheres and the most fundamental teaching aids.

#### **1.2.2.5 Teaching Strategies for English as a Medium of Instruction (EMI)**

The success of instructors in implementing EMI in the classroom is critical. As a result, a teacher with an EMI-based teaching strategy is successful as an EFL teacher. According to Mattaqin and Chuang (2022), employing EMI in the classroom can pose challenges for both teachers and students. Teachers have used many strategies to promote effective learning. The teacher's selected teaching strategy also adapts to students during the teaching and learning process (Gilin, 2017). One of the two strategies for implementing EMI, specifically blending L2 and L1. Teachers continue to utilize L1 in the classroom when learner's English abilities are inadequate and the teacher's explanation is difficult to understand in class. The full use of L2 in the classroom occurs when the student's ability to comprehend English improves. According to Pun and Jin (2021), combining languages can improve the effectiveness of EMI and simplify the teaching process for teachers.

According to a study by Rahmaniah (2020), approaches for applying EMI in schools can be performed through three activities during the teaching and learning process: pre-teaching activities, while-teaching activities, and post-teaching activities. The first step, known as pre-teaching, is to prepare for learning by greeting, checking attendance, reviewing the previous session, and prior understanding of the present topic (Nasution et al., 2018). During the pre-activity, the teacher can easily greet learners in English and elicit answers. Furthermore, the pre-activities increased students' exploration and curiosity about the learning topic. Pre-teaching involves the teacher exploring students' prior knowledge by asking fundamental questions about the content to be learned. This is extremely crucial for a teacher to do during the learning process so that learners can better understand the next task (Neilsen & Goates, 2018). The following stage, "while-teaching", is the teacher's process activity in teaching,

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which involves using EMI to explain the lesson, discuss the lesson, deliver the question, answer the question, and display the slides. This procedure presents numerous hurdles or difficulties for teachers due to their lack of English proficiency and students' comprehension of learning through the use of English as a medium of instruction. Finally, post-teaching activities constitute the final stage of teaching, followed by drawing conclusions and closing the classroom using complete English.

### **Conclusion**

Overall, to effectively implement teaching and learning strategies in English as a Medium of Instruction (EMI) setting. By fostering a supportive learning environment where students work together, engage in hands on activities, and are challenged to think critically. Educators can enhance the language acquisition process and overall academic performance. Emphasizing the strategies can create a dynamic classroom where students are motivated to learn, communicate effectively, and succeed academically in EMI environment.

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## Chapter Two: Teaching and Learning Strategies

### Introduction

The current chapter is devoted to the practical part of this research, which tries to investigate the strategies that students and teachers employ when implementing English as a medium of instruction in the Biology Institute. It presents data-gathering tools and the main findings. In doing so, two data collection tools were used; a questionnaire administered to First-year Biology students and an interview that was conducted with teachers at Mila University Center. Finally, the interpretation of these results is presented to help address research questions.

### Section One: Research Methodology

#### 2. 1.1 Research Method

This study attempts to investigate teachers' and learners' strategies to implement English as a Medium of Instruction (EMI) at the Institute of Biology in Mila University Center. To accomplish this aim, the research in hand adopts a qualitative descriptive method, employing an interview and questionnaire as research tools to gather data from both students and teachers in an attempt to answer the research questions.

#### 2.1.2 Research Tools

To answer the research questions, we conducted both an interview and a questionnaire as data gathering tools. The interview was addressed to first-year teachers from the Institute of Biology at Mila University Center and the questionnaire was for first year students at the same institute. The teachers' interview and students' questionnaire allow collecting of qualitative data.

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### 2.1.3 Population and Setting

As pointed out before, this study was conducted to both first-year students and their teachers of Biology at Mila University Center, with a total population 20 teachers and 300 students divided into ten groups. Out of the 300 first-year students from this University center, 50 participants accepted to answer the questionnaire. Seven teachers from the Institute of Biology at the same University Center responded to the interview questions.

### 2.1.4 Student Questionnaire

#### 2.1.4.1 Description of the Questionnaire

Students' questionnaire mainly aims at investigating students' strategies to implement English as a medium of instruction in the Institute of Biology. The questionnaire consists of 15 questions that are divided into four sections, each of which focuses on a specific aspect (see Appendix A). Both closed-ended and open-ended questions are used in this questionnaire.

The first section is devoted to general information. It consists of questions about the students' general information. It includes two main questions (Q1 and Q2) that aim to describe the sample. The second section contains six questions (Q3 to Q8) that aim to know students' views about the meaning of English as a Medium of Instruction (EMI). Furthermore, the third section contains six questions (from Q9 to Q14). It seeks to explore the learning strategies used by students when implementing EMI. The taxonomy of learning strategies divided by Oxford (1990) into six categories: memory strategies to store and retrieve information (Q9), cognitive strategies are mental processes for understanding and producing language (Q10), Compensation strategies to overcome knowledge gaps (Q11), meta-cognitive strategies to plan, monitor, and evaluate learning (Q12), affective strategies to manage emotions and motivation (Q13), and social strategies to interact with others for learning support (Q14). These strategies help learners identify and implement different strategies to improve their language learning efficiency.

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Finally, the fourth section contains only one open-ended question (Q15), which gives students full freedom to add any suggestions or comments about the topic. The reason behind the variation of questions is to collect reliable data and confirm the validity of the research.

#### **2.1.4.2 Administration of the Questionnaire**

The student questionnaire is concerned with first-year students. It is worth noting that the questionnaire was conducted in Arabic because the majority of the students were not proficient users of English. The questionnaire was administered inside the classroom at the end of the sessions. 50 students responded and answered the research questionnaire.

#### **2.1.5 Teacher Interview**

##### **2.1.5.1 Description of the Interview**

The interview consists of eight (8) questions (see Appendix B), ranging from broad to specialized and addressing the research objectives. The purpose of the first question is to find out which language they use when teaching. The following questions (from 2 to 5) focus on the attitudes of teachers. As a result, they address the expectations of teachers about the importance of EMI, whether they agree to have it or not, their expectations about how the teaching and learning process become after integrating EMI, and the challenges that teachers have faced while using English as a medium of instruction. The next set of questions (from 6 to 8) deal with the teaching strategies that teachers use in their classroom, besides the difficulties that students can face when using EMI, and some suggestions for improving the integration of English as a medium of instruction in Biology Institute.

##### **2.1.5.2 Administration of the Interview for Teachers**

The interview took place at the Institute of Biology, Mila University Center. Seven biology teachers were interviewed in Arabic since they were not well qualified to communicate



in English. This fact reflects teachers' English proficiency and potential obstacles when using English as a medium of instruction. The interview lasted two days, from May 5 Th to May 6th, 2024. Interviews lasted from five to ten minutes and were recorded with teachers' permission. After being conducted, the participants' responses were translated into English.

## Section Two: Analysis and Discussion of Results

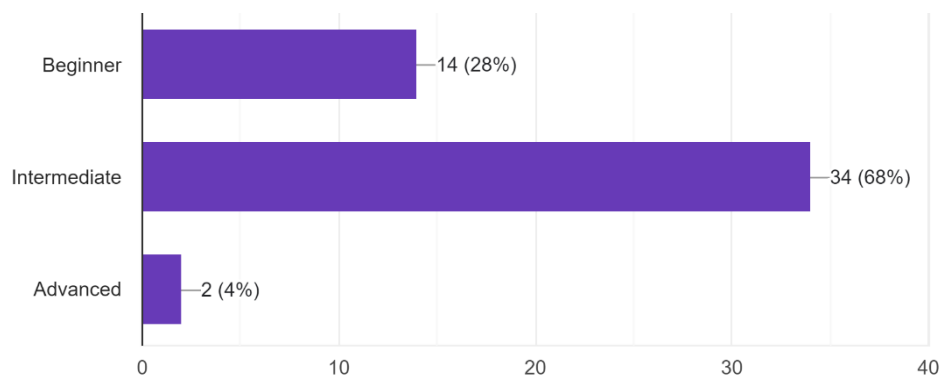
### 2.1.1 Analysis of Student questionnaire Results

#### Section one: General Information

#### Q1: Which level of English do you have?

Figure 1:

*Students' Level in English*



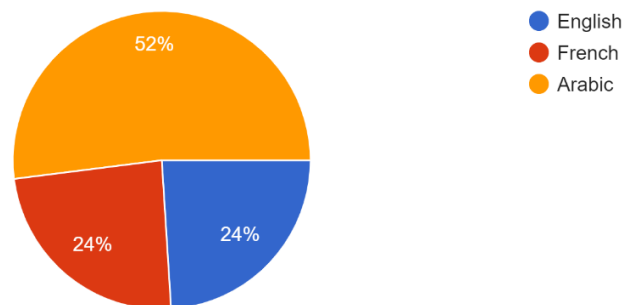
The question aims to assess students' readiness and capability to engage effectively in English. This figure shows that the majority of students fall into the intermediate level, comprising 68% of the participants. This suggests that while there is a substantial portion of individuals with a basic understanding of English (28% are beginners), the majority are at the level where they comprehend in English with some limitations. However, 4% of participants are classified as advanced. These results indicate a potential gap in proficiency levels needed

for successful implementation of EMI. This highlights the importance of providing additional support and resources for learners to enhance their English proficiency.

**Q2: Which language have you been receiving content of your modules?**

*Figure 2:*

*The Language Used by Students to Learn Their Modules*



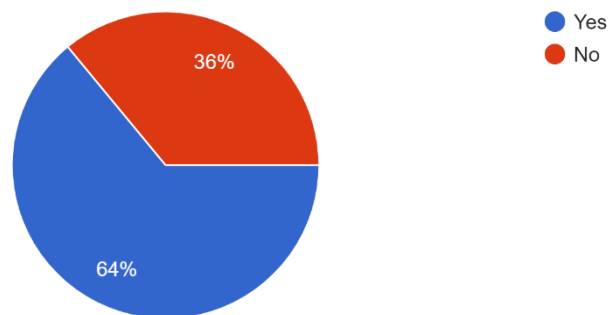
The aim is to investigate the used language for learning modules among students. The results indicate a significant use of Arabic as the language for learning modules, with 52% of participants selecting it, possibly reflecting the native language of a majority of the students. English and French are equally used, each chosen by 24% of students. However, the lower percentages for English and French compared to Arabic highlight the importance of providing content in multiple languages to cater to a wider audience, as it indicates high levels of proficiency in French and English compared to Arabic.

**Section Two: English as a Medium of Instruction**

**Q3: Do you agree that English should be used in studying biology at university?**

Figure 3:

*Students' Opinions Towards Using English*

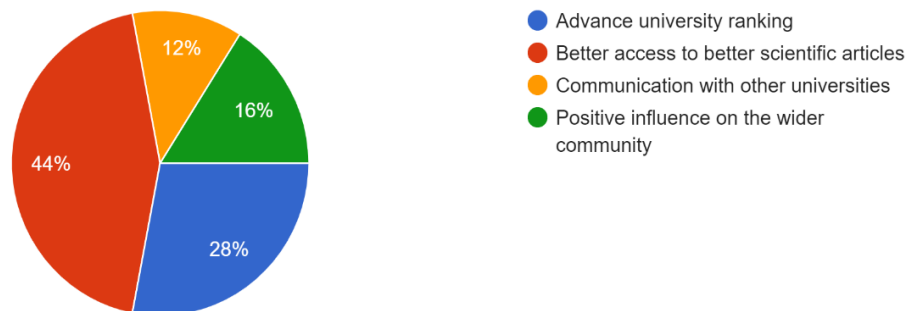


This study aims to assess opinions on the use of English as the medium of instruction in biology studies. With 64% of respondents in agreement, the majority of students support the incorporation of English to study biology at the university. This implies a recognition of the importance of English as a global language and its role in facilitating communication in the scientific community. However, 36% of participants expressed concern regarding the implementation of English as the only medium of instruction, possibly due to issues related to language proficiency.

**Q4: Applying EMI in the biology institute is important and beneficial to:**

Figure 4:

*The Importance and Benefits of Implementing English as a Medium of Instruction in Biology Institute*

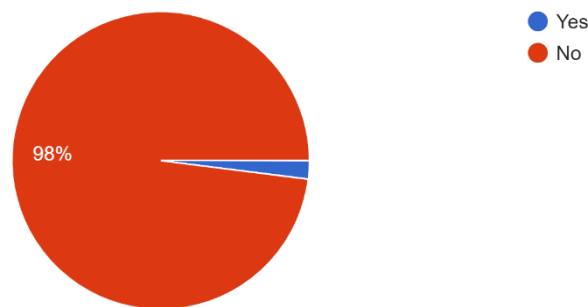


This study aims to evaluate the perceived importance and benefits of applying English as a medium of instruction in studying biology. The results indicate that a significant segment of respondents recognize the importance and benefits of implementing EMI. The largest percentage (44%) believed that EMI would provide better access to better scientific articles, suggesting an acknowledgement of the role of English in accessing and comprehending scientific texts. Additionally, 28% of them see EMI as means to advance university ranking, emphasizing the perceived correlation between the English medium of instruction and academic prestige. Furthermore, 16% of students believed that EMI would have a positive influence on the wider community, possibly indicating the capability for knowledge. Yet, only 12% of respondents ranked communication with other universities as a benefit of EMI, suggesting that important inter-university communication may not be the primary driver for implementing EMI, according to this sample.

**Q5: Does your department provide you with services to help you develop your level in English?**

*Figure 5:*

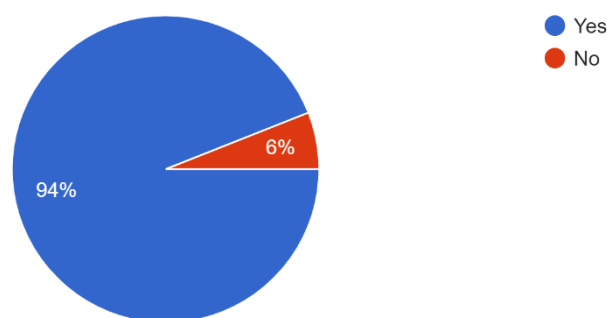
*Services to Improve Students' English Level*



The figure aims at assessing the offering of English development services within the department. 98% of students stated that their department does not provide services to help them develop their level in English, which highlights a crucial gap in support for language learning and may hinder the academic and professional growth and opportunities of students as it suggests a need for personal efforts to develop the language proficiency. A small minority (2%) reported that their department offers such services through the teachers who translate into Arabic and this is the department obliged them to translate, indicating a significant lack of resources dedicated to English language skill development. This suggests possible challenges for individuals seeking to improve their English.

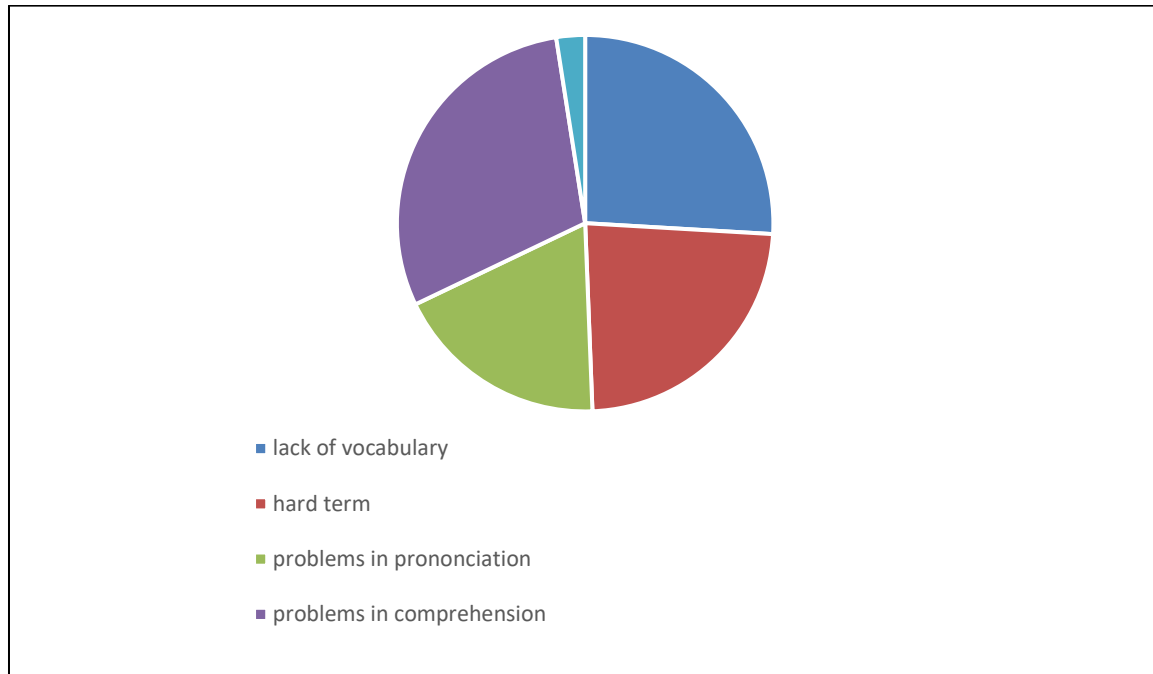
**If yes, what are these services?**

2% the students who reported that their department provide them with services to help them develop their level in English through the teachers who are obliged translating into Arabic.

**Q6: Do you face any problems in your courses because they are presented in English?***Figure 6:**Problems Faced Due to English-Medium Courses*

The aim is just to know whether or not there are any problems encountered by students due to courses presented in English. 94% of respondents reported facing problems in their courses because they are presented in English, indicating a widespread issue impacting students' academic experiences. This suggests that language barriers significantly hinder students' comprehension, engagement, and overall performance in English courses. 6% of them who stated that they do not face any problems suggest that a small segment of students possess sufficient English proficiency to navigate English-medium courses effectively; this echoes with the results of the first question.

**Q7: What are these problems?**

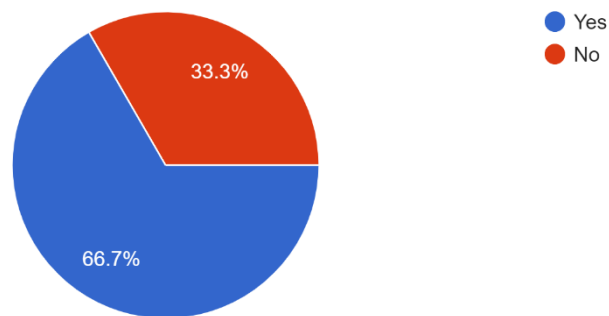
*Figure 7:**Identifying Problems Faced in English-Medium Courses*

The question aims to identify and analyze the specific problems encountered by students in English-medium courses. The results reveal a range of problems faced by students, with problems with comprehension (48%) and a lack of vocabulary emerging as the most prevalent issues. This suggests that students struggle with understanding and effectively utilizing academic terminology and concepts. Additionally, hard terms (38%) contribute to students' difficulties, highlighting the complexity of course content and the need for clear explanation. Problems in pronunciation (30%) hinder students' communication, underscoring the importance of improving speaking skills through pronunciation and practice activities. Whereas, the other 4% of them indicate that teachers explain the lesson in French or English.

**Q8: Do you think delivering courses in English would make you more interesting in biology?**

Figure 8:

*Students' Opinion about Delivering Courses in English*

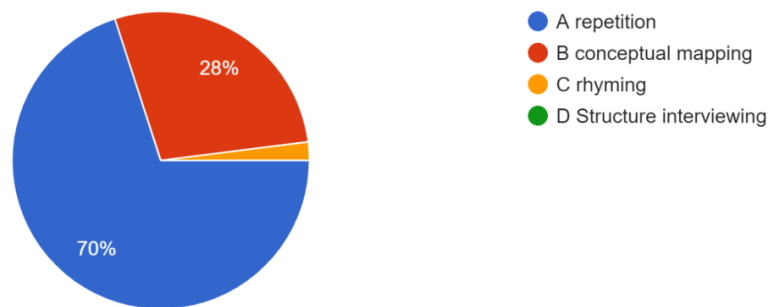


The aim is to evaluate the impact of delivering biology courses in English on students' interest in the subject. This study indicates that a majority of respondents (66.7%) believed that delivering courses in English would make them more interested in biology. This suggests that students perceive EMI as potentially enhancing their engagement. However, a minority of them (33.3%) did not share this opinion, indicating capability concerns regarding the language of instruction

### **Section Three: Learning Strategies**

**Q9: Which memory strategy do you apply when using English to study?**



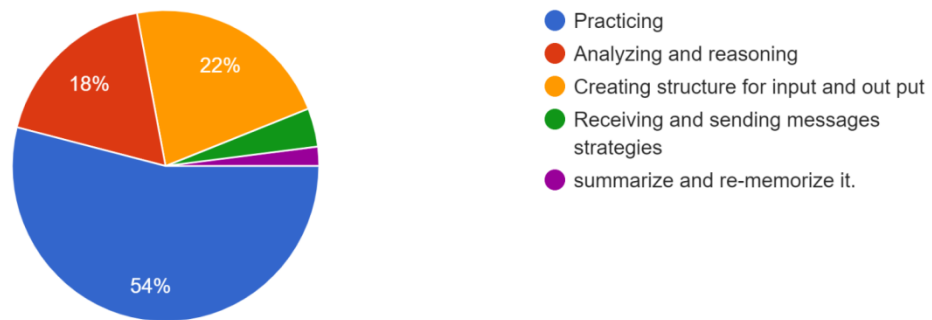
*Figure 9:**Memory Strategy Utilized for English Language Study*

The aim is to identify and analyze the memory strategies employed by individuals when using English to study. The results uncover that the majority of participants (70%) utilized repetition as their primary memory strategy, indicating repeated exposure. Conceptual mapping is also used by a significant segment of them (28%), suggesting an emphasis on organizing and connecting information visually to aid comprehension. Rhyming and structure interviewing were reported by only a small percentage of participants (2% and 0%), indicating that these strategies are less commonly employed.

**Q10: What is the cognitive strategy that you utilize when learning biology in English?**

Figure 10:

*Learning Strategies for Biology Concepts in English*

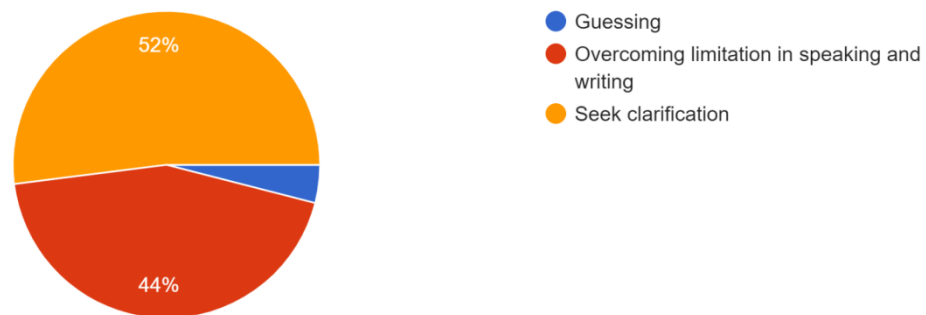


The aim behind asking this question is to explore the cognitive strategies employed when learning biology concepts in English. The results indicate a variety of strategies, with the majority (54%) favoring practicing as their primary strategy. This suggests a preference for repetitive exercises to reinforce understanding. Additionally, 22% employed structures for input and output, indicating an emphasis on organization. Another 18% of respondents use analysis and reasoning, demonstrating a focus on critical thinking to comprehend complex concepts. Receiving and sending strategies are less commonly utilized (4%), suggesting a lack of communication activities. But the minority of them (2%) did not use these strategies and mentioned the other one, which is to summarize and re-memorize; this highlights additional strategies employed by some respondents.

**Q11: Which strategies enable you to make up for limited knowledge?**

Figure 11:

*Strategies for Compensating Limited Knowledge in English*

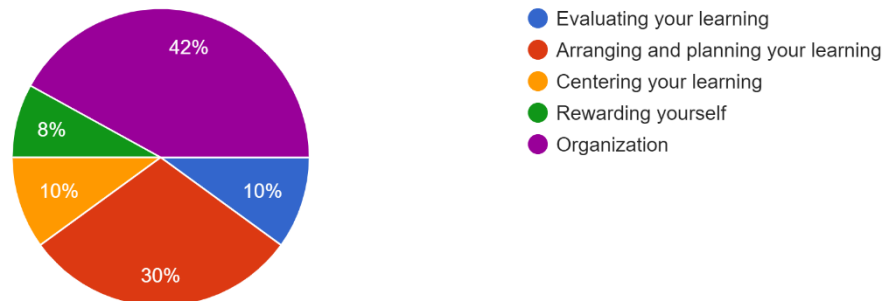


The aim is to identify the strategies participants use to compensate for limited knowledge when learning English. The results uncover that the majority of students (52%) seek clarification, indicating a proactive approach to addressing gaps in understanding by asking for further explanation. Overcoming limitations in speaking and writing (44%) is also commonly employed, with a focus on improving language skills through practice. Guessing, reported by a small percentage of respondents (4%), is less frequently utilized, possibly due to uncertainty in effectively addressing knowledge gaps.

**Q12: What strategies do you employ to enhance your learning and monitor your understanding while studying English?**

Figure 12:

*Strategies for Enhancing Learning and Understanding in English Studies*

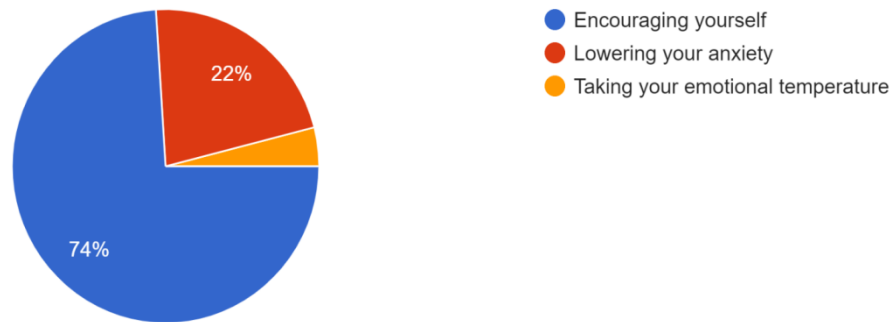


The question attempts to identify the strategies students employ to enhance their learning and monitor their understanding while studying English. Figure 12 shows that the majority of students (42%) favor organizations. This focuses on structuring study materials and managing time. Moreover, arranging and planning learning (30%) are commonly employed. Evaluating learning (10%) and centering (10%) are also reported strategies, indicating the need to explore unfamiliar topics to deepen understanding. Rewarding (8%) is not utilized, capably due to its focus on external motivation.

**Q13: How do you manage your emotions and motivation while learning English, and what strategy do you utilize to stay engaged and positive throughout the process?**

Figure 13:

*Strategies for Engagement and Positivity*

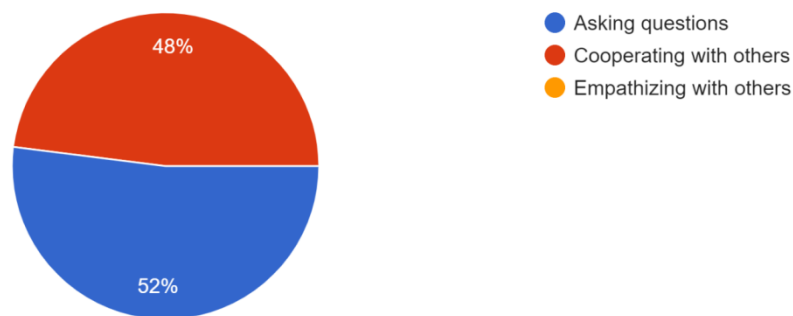


The main aim behind this question is to explore how students manage their emotions and motivation while learning English, as well as the strategies employed to stay engaged and positive throughout the process. Figure 13 shows that most of the students' answers, 74% utilized encouraging themselves, suggesting maintaining a positive mindset. Lowering anxiety (22%) is also commonly employed, indicating the importance of managing stress. Taking emotional temperature (4%) is reported by a smaller percentage of answers; focus on self-awareness and reflection to monitor emotional well-being during the learning process.

**Q14: To enhance your English language learning, what do you use to engage with peers for support and feedback?**

Figure 14:

*Peer Engagement Strategies for English Language Learning*



This question aims to explore the strategies individuals utilize to engage with peers for support and feedback to enhance their English language learning. The results indicate asking questions (52%) and cooperating with others (48%) are the first strategies employed by respondents. These findings underscore the importance of active participation and collaboration in peer interactions to facilitate learning. Whereas, empathizing with others (0%) was not reported as a commonly used strategy, implying that respondents may rank more direct forms of communication and collaboration when engaging with peers.

#### **Section Four: Further Suggestions**

Regarding the final question, in which sample participants were asked to offer any suggestions or comments about the topic of research, students who responded to this question are represented by a low percentage (10%). But the majority of them (90%) chose to leave it

blank. They can be in a hurry or bored with answering questionnaires, or they might think that the prior questions cover all of their thoughts on the subject.

Some of the participants who answered the question have provided some comments about the topic. Their suggestions can be summarized as the following statements:

- The department should provide obligatory services to learn English.
- The English language is a viable idea for development in learning and teaching.
- The English language solves many problems for students, such as communicating with foreigners and reading books.
- The English language has taken the lead because it is the language of the world.

According to the suggestions and comments, students recognize and value the significance of English in a global context.

### **2.2.2 Analysis of Teachers' Interview**

#### **Q1: Which language do you use for teaching?**

The aim behind this question is to know which language do teachers use in the teaching process and delivery of their courses. The obtained data showed that three teachers choose using the English language to have better engagement and try to use it with the mother tongue of the students. Additionally, two teachers try to mix between the two languages 'English and French' to deliver their courses, this implies that they shift between these languages for better understanding of courses. The remaining teachers (two) insisted on using the French and Arabic language, this reveals that the totally agrees on using the English languages.

#### **Q2: What do you think the importance of using English as a medium of instruction is?**

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 Biology Institute. 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.

**Q3: Do you agree with using the English language for teaching?**

**please clarify.**

This question tries to elicit the different points of view teachers may have towards English as a medium of instruction. From their answers, almost all teachers agreed that the English language is the main language not just for science but for all communications, because it is easy to learn, practical, flexible and based on few simple rules that are relatively easy to master and English is not borrowing as French. 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.

**Q4: How do you think the teaching and learning process becomes after integrating English as a medium of instruction?**

This question tries to elicit the different attitudes that teachers expect concerning how the teaching and learning process becomes after starting to use English as a medium of



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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 has a big impact on the classification of the university. Others had 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 applying this language in teaching process is 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.

**Q5: As a teacher who used to teach in French, what are the challenges that you may face when shifting to using 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 problems in the 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; he can use it the same as French. He 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 used to use French than English because they consider it as the first foreign language that they have been using from the primary school till university. Besides, 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.

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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.

**Q6: What are the teaching strategies that you use in your classroom?**

This question deals with teachers' strategies that are used in the classroom to teach the content in English. Most teachers used the way of delivering the lectures and explaining them at the same time by using examples at the end to check whether the learners received them or not. Another group of teachers utilized another strategy, which is to explain the lesson through planners and also present situations to acquire scientific terminology. The rest of the teachers used another way to transmit the lecture, starting with examples and moving on to discussion.

**Q7: What is your expectation about the difficulties that students can face 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 in having most of the students have a capacity to use French more than English. So that, applying this language in teaching fields will bring problems in comprehension, understanding, lack of vocabularies and fluency. In Addition to these problems learners can not express their ideas and they face problems when pronouncing scientific terms.

**Q8: Would you please offer some suggestions for a better integration of EMI in biology institute?**

This question endeavors to check the participants suggestions for the teaching methods, materials, and training that they may have for the integration of English in the Biology Institute to ensure better results. Teachers' suggestions differed from one teacher to another; one suggested providing more hours within the planning to teach scientific English starting from the primary level. Additionally, the department can give students the opportunity to choose whether to study their modules in English or French. Another teacher suggested specifying some modules only for scientific terminology in English so as to enrich students' vocabulary in the first year of their license. One more teacher suggested having programming workshops and training for both learners and teachers. The last teacher suggested creating courses and treaties with private schools to develop and learn the language of the world.

### **2.2.3 Discussion of the Results**

The combined analysis of the teachers' interviews and students' questionnaires provides a comprehensive understanding of the learners' and teachers' strategies to implement EMI and the challenges and opportunities associated with integrating English as a medium of instruction in biology institute.

Starting with the students' questionnaire, findings provide an additional insight into the readiness and perspectives of learners towards EMI. The majority of students fall into the intermediate level of English proficiency, indicating a fundamental understanding but with limitations in communication. While there is a significant use of Arabic as the language for learning modules, reflecting the native language of students, there is also a recognition of the importance of English in academic and scientific contexts. Learners utilize strategies such as asking questions, self-encouragement, organization, seeking clarification, practicing, and repetition. Students utilize a limited number of strategies compared to the ones classified in literature by Oxford (1990), such as memory, cognitive, compensation, meta-cognitive, affective and social strategies. These strategies help students implement EMI successfully.

On the other hand, teachers' interviews have a range of attitudes towards language use in teaching. While some teachers support the predominance of English, citing its importance as a global scientific language, others express reservations due to concerns about proficiency levels. Teachers utilize limited strategies to facilitate the content, from delivering lectures while explaining concepts, utilizing planners and present situations to acquire scientific terminology. They did not use strategies to implement EMI. Teachers' strategies for facilitating EMI often focus on simplifying complex content, providing context, and ensuring comprehension. Compared to previous literature the strategies are limited and the researchers Khairunnisa and Istikharah (2019), Killen (1996), and Wehrli (2003) provided strategies for implementing English as a medium of instruction like questioning, explaining, direct instruction, small-group work, co-operative learning, problem solving, games and brainstorming.

Students' opinions towards using English as the medium of instruction in biology studies are generally positive, with the majority supporting its incorporation. However, the challenges faced due to English-medium courses include comprehension difficulties, vocabulary, and pronunciation. Their concerns reflect the broader context, where French is the dominant language in education and professional settings. Despite these challenges, teachers remain optimistic about the potential benefits of EMI for enhancing scientific development in Algeria.

## **Conclusion**

This chapter has mainly shed light on teachers' and students' strategies used while using English as a medium of instruction in biology institute and to identify challenges that may face them while applying it in Biology. The results gathered from the students' questionnaire showed that the majority of them have a positive attitude towards applying

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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 means 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 the biology institute, they stated clearly the effectiveness 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. Both learners and teachers utilize limited strategies. Learners utilize strategies such as asking questions, self-encouragement, organization, seeking clarification, practicing, and repetition. While teachers utilize limited teaching strategies to facilitate EMI, ranging from delivering lectures while explaining concepts simultaneously to utilizing planners and present situations to acquire scientific terminology.

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### General Conclusion

The present study is based on investigating teachers' and learners' strategies to implement English as a medium of instruction in the Institute of Biology. Since English has assumed the role of an international language, one of the most significant trends in higher education in non-anglophone countries has been the growth of English as a Medium of Instruction (EMI).

To achieve this aim, the present research adopted a qualitative method. The interview was conducted with seven teachers of biology to uncover their strategies to implement English as a medium of instruction. Then, a questionnaire was administered to fifty first-year Biology students in order to uncover their strategies that they use to understand the content in English.

This research was divided into two chapters; the first chapter was made up of two sections. Section one included the definition of English as a medium of instruction, its origins and growth, the English as a medium of instruction around the World, its importance, its implementation, challenges related to teachers, challenges related to students, and the EMI in the Algerian universities. Section two was dedicated to learning strategies definition, features, classifications, importance, longer with teaching strategies definition, types, designing teaching strategies, importance, and teaching strategies for English as a medium of instruction. The practical chapter of this study included a detailed analysis and discussion of the results obtained from the students' questionnaire and the teachers' interview.

Based on the results discussed in the second chapter, the research questions can be answered. The first question is concerned with teachers' strategies that they use to implement EMI successfully in class. The results showed that the majority of the participants utilize limited teaching strategies to facilitate EMI, ranging from delivering lectures while explaining simultaneously to utilizing planners and present situations to acquire scientific terminology.

The second question was set to uncover the strategies that learners use to study the content in English. According to the obtained data, it is noticed that the majority of learners utilize strategies such as asking questions, self-encouragement, organization, seeking clarification, practicing, and repetition. So, they utilize limited strategies according to Oxford (1990).

The third question was related to what challenges teachers face when incorporating EMI and how they address these challenges. Based on the results, teachers have many challenges with their own proficiency in English, particularly in terms of pronunciation, spelling, and mastery of scientific terminology.

The fourth question was related to what challenges learners face when incorporating EMI, and how they address these challenges. Based on the results, learners encounter various challenges in English-medium courses, such as comprehension difficulties, a lack of vocabulary, and problems with pronunciation.

However, 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 learners for the questionnaire and teachers for the interview. Because the fact that the time of the interview took place during May, we were obliged to attend the department from the morning till the afternoon looking for 7 teachers to be interviewed because most of them finished their lectures and some of them were preparing for the interrogations. Second, for the questionnaire, it was time constraining to search for first- year students within the classrooms in order to collect the needed information.

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

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- 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 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.
  - . Teachers utilize a limited number of strategies. We recommend that they explore and adopt additional strategies, such as those classified by Wehrli, Killen, and Khairunnisa and



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Istikharah. Additionally, we suggest organizing workshops to provide teachers with training on strategies, which can enhance their teaching effectiveness and support student learning.

Learners, on the other hand, are asked to:

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

. Students utilize a limited number of strategies compared to the ones classified in literature by Oxford (1990), such as memory, cognitive, compensation, meta-cognitive, affective and social strategies. These strategies help students implement EMI successfully.

### **Suggestions for Further Research**

The current research has dealt with the investigation of teachers' and learner's strategies towards the use of English as a medium of instruction in Biology Institute. 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.

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## Appendices

### Appendix A

#### Student Questionnaire

**Dear students,**

You are kindly invited to respond to this questionnaire, which is part of Master research. This questionnaire aims at investigating your strategies for using English as a medium of instruction in the institute of Biology. 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.

#### Section One: General Information

**Q1:** Which level of English do you have?

Beginner

Intermediate

Advanced

**Q2:** Which language have you been receiving content of your modules?

English

French

Arabic

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

**Q3:** Do you agree that English should be used in studying Biology at university?

Yes

No

**Q4:** Applying EMI in the Biology institution is important and beneficial to:

Advance university ranking

Better access to better scientific articles

Communication with other universities

Positive influence on the wider community

Others.....

**Q5:** Does your department provide you with services to help you develop your level in

English

Yes

No

If yes, what are these services?

.....  
.....  
.....

**Q6:** Do you face any problems in your courses because they are presented in English?

Yes

No

**Q7:** What are these problems?

Lack of vocabulary

Hard terms

Problems in pronunciation

Problems in comprehension

Others.....

**Q8:** Do you think that delivering courses in English would make you more interesting in Biology?

Yes

No

**Section Three: Learning Strategies**

**Q9:** which memory strategy do you apply when using English to study?

Repetition

Conceptual mapping

Rhyming

Structure interviewing

Others .....

**Q10:** What is the cognitive strategy that you utilize when learning biology in English?

- Practicing
- Analyzing and reasoning
- Creating structure for input and out put
- Receiving and sending messages strategies

Others.....

**Q11:** which is the strategy that enable you to make up for limited knowledge?

- Guessing
- Overcoming limitation in speaking and writing
- Seek clarification

Others .....

**Q12:** What strategies do you employ to enhance your learning and monitor your understanding while studying English?

- Evaluating your learning
- Arranging and planning your learning
- Centering your learning
- Rewarding yourself
- Organization

Others .....

**Q13:** How do you manage your emotions and motivation while learning English, and what strategy do you utilize to stay engaged and positive throughout the process?

- Encouraging yourself
- Lowering your anxiety
- Taking your emotional temperature

Others.....

**Q14:** To enhance your English language learning, what do you use to engage with peers for support and feedback?

- Asking questions
- Cooperating with others
- Empathizing with others

Others.....

**Section Four: Further Suggestions**

**Q15:** Do you have any suggestions or comments about what you have dealt with in the previous sections?

.....

.....

.....

.....

**Thank you for your participation**



## **Appendix B**

### **Interview for Teachers**

**Dear teachers,**

The aim of the current study is to investigate your strategies toward using English as a medium of instruction in the institute of biology. The interview attempts to collect useful information about the different strategies that used by teachers to implement EMI in a good way. Your answers are very important for the validity of the research we are conducting. We would be very grateful if you took part in this interview, which will be recorded based on your permission.

#### **Questions**

1. Which language do you use for teaching?
2. What do you think the importance of using English as a medium of instruction is?
3. Do you agree with using the English language in teaching?

please clarify

4. How do you think the teaching and learning process becomes after integrating English as a medium of instruction?
5. As a teacher who used to teach in French, what are the challenges that you may face when shifting to using English?
6. What are the teaching strategies that you use in your classroom?
7. What is your expectation about the difficulties that students can face when using English as a medium of instruction?
8. Would you please offer some suggestions for a better integration of EMI in biology institutions?

## Résumé

La présente étude vise à révéler les différentes stratégies utilisées par les professeurs et les étudiants pour appliquer avec succès l'anglais comme moyen d'apprentissage à l'Institut de biologie du Centre de l'Université de Mila. Quatre questions sont posées : (1) Quelles stratégies les professeurs utilisent-ils pour mettre en œuvre avec succès l'enseignement de l'anglais dans le département ? (2) Quelles stratégies les élèves utilisent-ils pour comprendre le contenu en anglais ? (3) Quels sont les défis auxquels les enseignants sont confrontés lors de l'intégration de l'anglais comme langue d'apprentissage, et comment font-ils face à ces défis ? (4) À quels défis les étudiants sont-ils confrontés lorsqu'ils intègrent l'anglais comme langue d'apprentissage, et comment font-ils face à ces défis ? Pour répondre aux questions de recherche, la présente étude s'appuie sur une méthode qualitative. Afin de recueillir les données nécessaires sur les stratégies des étudiants et des professeurs, un questionnaire a été distribué à cinquante (50) étudiants de première année de biologie au Centre Universitaire Mila et un entretien a été réalisé avec sept (7) professeurs du même département. Les résultats ont révélé que les élèves utilisaient des stratégies telles que poser des questions, s'auto-encourager, s'organiser, chercher des éclaircissements, pratiquer et répéter. Tandis que les professeurs utilisent des stratégies d'enseignement limitées pour faciliter l'utilisation de l'anglais comme moyen d'apprentissage, allant des cours magistraux à l'explication simultanée de concepts et à l'utilisation de diagrammes pour acquérir la terminologie scientifique. En conséquence, les résultats ont révélé que la majorité des participants avaient du mal à utiliser l'anglais comme moyen d'apprentissage. L'étude se termine par quelques orientations à l'intention des professeurs et des étudiants et des suggestions pour de futures recherches.

**Mots-clés** : l'anglais comme moyen d'apprentissage, stratégies pédagogiques, stratégies d'apprentissage, biologie, défis.

## ملخص

تهدف الدراسة الحالية إلى الكشف عن الاستراتيجيات المختلفة التي يستخدمها الأساتذة والطلاب لتطبيق اللغة الإنجليزية كوسيلة للتعلم بنجاح في معهد البيولوجيا بمركز جامعة ميله. تطرح أربع أسئلة: (1) ماهي الاستراتيجيات التي يستخدمها الأساتذة لتنفيذ التدريس باللغة الإنجليزية بنجاح في القسم؟ (2) ماهي الاستراتيجيات التي يستخدمها الطلاب لفهم المحتوى باللغة الإنجليزية؟ (3) ماهي التحديات التي يواجهها الأساتذة عند دمج الإنجليزية كلغة للتعلم، وكيف يتعاملون مع هذه التحديات؟ (4) ماهي التحديات التي يواجهها الطلاب عند دمج الإنجليزية كلغة للتعلم، وكيف يتعاملون مع هذه التحديات؟ للإجابة على أسئلة البحث، تعتمد الدراسة الحالية على طريقة نوعية. من أجل جمع البيانات الضرورية حول استراتيجيات الطلاب والأساتذة، تم توزيع استبيان على خمسين (50) طالبًا من السنة الأولى بيولوجيا بمركز جامعة ميله كما أجريت مقابلة مع سبعة (7) أساتذة في نفس القسم. كشفت النتائج أن الطلاب يستخدمون استراتيجيات مثل طرح الأسئلة، التشجيع الذاتي، التنظيم، البحث عن التوضيح، الممارسة، والتكرار. بينما يستخدم الأساتذة استراتيجيات تدريس محدودة لتسهيل استخدام اللغة الإنجليزية كوسيلة للتعلم، تتراوح بين إلقاء المحاضرات مع شرح المفاهيم في الوقت نفسه واستخدام المخططات لاكتساب المصطلحات العلمية. بناء على ذلك، كشفت النتائج أن أغلبية المشاركين واجهوا تحديات في استخدام اللغة الإنجليزية كوسيلة للتعلم. وتختتم الدراسة ببعض التوجيهات لكل من الأساتذة والطلاب واقتراحات لأبحاث مستقبلية.

**كلمات مفتاحية:** اللغة الإنجليزية كوسيلة للتعلم، استراتيجيات التدريس، استراتيجيات التعلم، البيولوجيا، التحديات.