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Option: didactic

**Investigating the implementation of English as a
medium of instruction with first year mathematic
students at university of Ghardaïa**

**A dissertation submitted to the department of letters and English language
in partial fulfillment of the Requirements of the Degree of Master**

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Dedication I

In the name of ALLAH, the most gracious the most merciful all the praise is due to Allah alone.

First and foremost, the greatest thanks is to ALLAH for his countless blessings, especially the blessing of knowledge & learning.

Thanks to all my family members young and old who supported me and were patient with me until I completed this work which took a lot of time and effort.

Special thanks to my son Adam who worked hard with me from the beginning until the end of this dissertation, especially in questionnaires' statistic and typing papers.

Dedication II

In the name of ALLAH, the most Merciful, the most Gracious.

Thanks be to ALLAH first.

This dissertation is dedicated to:

My parents who have raised me to be the person I am today.

To My husband and My children.

To My dearest brothers and sisters.

To My big family without acceptance.

To everyone who supported me.

Kheira.

Acknowledgement

In the name of Allah, the most merciful the most passionate

“Whoever does not thank people does not thank God”.

We thank God almighty for the blessing of peace and Islam and the blessing of health & Wellness.

First, we thank everyone who contributed to help us to achieve this work from near or far and we would like to express our greatest appreciation and gratitude to our dearest supervisor, the head of the English department DR. Malika Kouti who provided us with positive energy and great motivation during the academic year.

Second, we are deeply grateful to all members of English faculty for there tremendous efforts and there cooperation and we thank the high education ministry for giving this valuable opportunity that enable us to come back to study and taste the feeling of success again after the daily routine that we leave between professional and social life, between Being parents watch over serving their Childrens ,and teachers who aspire to the success of their students and move them forward, leaving a good impression on them which is:

“Knowledge is from the cradle to the grave.”

Finally, we are deeply grateful to the jury members for devoting their time to read and examine our dissertation.

Abstract

This research is the study of the first interaction with the new instruction issued by higher educational ministry in Algeria (2022.2023), which stipulates the application of English as a medium of instruction (EMI) in university scientific field , especially in the mathematics field.

We devoted this research to first year LMD mathematics students at Ghardaïa university ,it seeks to investigate the difficulties that prevent students from acquiring mathematics in English language, knowing that a large percentage of students fail to continue studying in this field in the mother tongue and what if it is in a foreign language (F L), in the same time this work highlights mathematics teachers' confusion in choosing the appropriate and successful methodology or frame work they will use with their students to apply (EMI) , and also ,we focused on the specification required on EMI teacher.

In this sense the data will be collected from different sources using two instruments including a questionnaire administered to f-y-m-s and an interview with M-Teas, the data will be analyzed relying on a mixed approach which combines both quantitative & qualitative methods.

At the end of this dissertation, we discussed in the conclusion some concrete solutions and some proposals that can be implemented in the short & long term.

Keywords: FL / EMI / instruction off higher educational ministry first year mathematics student / appropriate approach / difficulties

List of abbreviations

E-L: English language

ESP: English for specific purposes

EMI: English as a medium of instruction f-y-m-s: first year mathematics student

M-Tea: mathematics teachers

M-T: mother tongue

E-F-L: English as a foreign language

CLIL: content & language integrated learning.

CLIL-ised EMI: content and language integrated learning using E-L.

LMD: license Master Doctorate

ELT: English language teaching

E1: English module in the first semester for F-Y-M-S

E2: English module in the second semester for F-Y-M-S

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CHAPTER TWO

THE BENEFITS OF EMI IN MATHEMATICS FIELD

CLIL TEACHER

CLIL-ISED EMI

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General Introduction

General Introduction

General introduction

The spread of the English language worldwide can be attributed to various reasons, including historical, cultural, and economic factors, such as the extensive British colonization, migration, trade exchanges, and the cultural influence of English cinema, music, and literature.

Many countries have adopted English as a language for learning due to the influence of the British Empire and the rise of the United States as a global power in the 20th century. Additionally, English has become the global language for technology, commerce, and economics in response to the inevitability of globalization and the evolving needs of students in a rapidly changing world.

Amidst this backdrop, Arab countries have embraced English language education as a result of cultural interaction and trade exchange with the English-speaking world, along with the increasing interest in language learning for educational, professional, and travel purposes.

Against this background, developing countries like those in North Africa, including Algeria, have started moving towards using English as a medium of instruction. It's worth noting that governments have adopted two strategies:

1. Providing English language education for young learners EFL, where it has become a compulsory part of the curriculum in primary schools.
2. The second strategy is adopting English as a medium of instruction in higher education institutions, especially in the fields of science and technology, including mathematics, which is the subject of our discussion. This involves teaching mathematics in English and the challenges faced by both students and teachers due to teaching mathematics in English, as well as the desired positive outcomes of implementing this approach.

General Introduction

Background

In many countries, notably in the Middle East, English is used as the medium of instruction for certain subjects, particularly medicine, engineering, and some science subjects. What distinguishes these situations from those in the African and South-East Asian countries described above is that there is no particular or general tradition of English-medium education in the country, and the school system mostly uses the national language to teach all subjects. Thus, students must make the adjustment from studying all subjects in their national language at school level to studying subjects such as science, medicine and engineering in English at tertiary level. This has led some countries to include some EAP work in the English curriculum at upper secondary school level (see for example a description of the use of an ESP textbook in Egyptian secondary schools).

In the last two decades EMI has largely expanded in higher education institutions in non-native English-speaking countries. In a study conducted by the British Council in collaboration with The Center for Research and Development in EMI of Oxford University which covered 55 countries, 62 percent of the respondents reported the adoption of EMI policies in the countries they represent in the last decade (Dearden, 2014). The study also concluded that EMI has been adopted by more private institutions than public ones and initiated by the top management rather than by stakeholders. Studies have highlighted the positive effects of EMI on students' language proficiency, academic achievement, and future career prospects (Coleman, 2015). However, the effectiveness of EMI may vary depending on contextual factors such as students' language proficiency, instructional strategies, and institutional support (Lasagabaster & Doiz, 2016). Although researchers differ in their explanations, there seems to be an agreement on the role of globalization and the internationalization of education. One central objective for adopting EMI is to internationalize universities to attract more international students and international faculty. But more importantly, it aims to make home students better prepared for a globalized environment (Dearden, 2014). The position of English as an international language has much to do with its adoption as the means of communication in academic context to enhance students' career prospects and to develop their ability to communicate and interact in a globalized world. The integration of English language instruction in mathematics education has garnered attention worldwide, with scholars exploring its impact on teaching and learning outcomes. While this approach has been widely adopted in various educational contexts, its implementation and effectiveness in Algerian universities remain relatively unexplored. This literature review

General Introduction

examines existing research on the implementation of English in teaching mathematics and provides insights into its potential implications for Algerian university settings.

Statement of purposes

our aims from conducting this dissertation are:

- highlight teachers' and students' difficulties in the initial implementation of the instruction.
- Giving an initial look at the appropriate approach, the M-tea May will use.
- Define the automatic transformation from EMI to CLIL-ised EMI approach.

Hypotheses

The implementation of EMI at university level put f-y-m-s and M-tea in a big exclamation mark about the proper handling of this strategy and the right way to face the difficulties.

This research attempts to investigate the initial implementation of EMI at Ghardaïa university, and the hypotheses are the following:

- The mathematics students deal with EMI.
- The M-Tea's deal with EMI.
- Professor's confusion in choosing the appropriate approach (is it ESP – EMI or CLIL-ised EMI approach?)
- The most important difficulties faced by both sides.

Statement of problem

- What is the initial application of ministry's instruction.
- What is the f-y-m-s attitude toward EMI?
- What is the mathematic teacher's attitude toward EMI?
- Which approach will the teacher choose for the instruction process: ESP, EMI or CLIL-ised EMI approach.
- Who is EM teacher in mathematic field.

Significant of the study

The main objective of this study is:

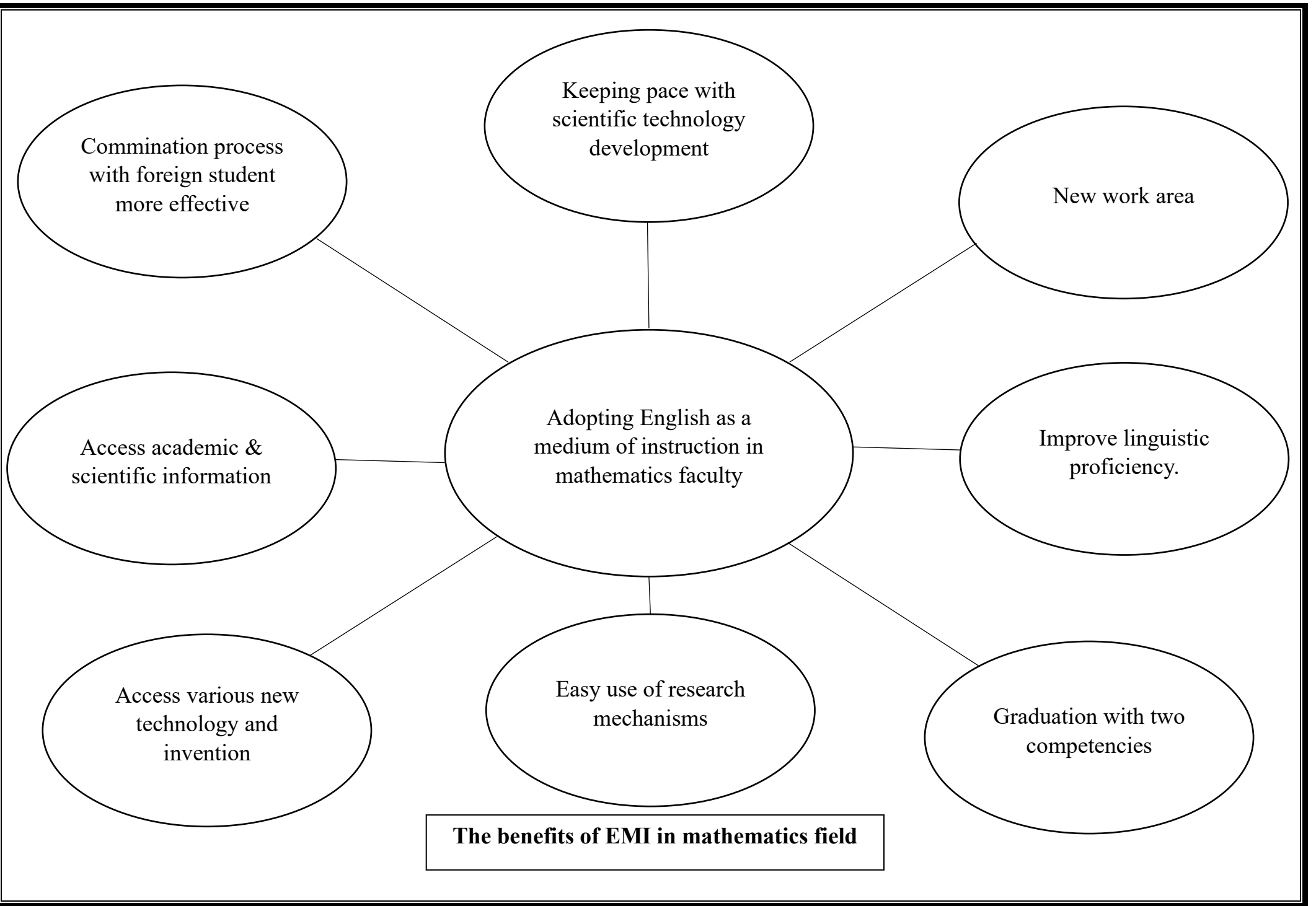
- Taking students' problems into consideration to help them overcome.
- Discussing the various approaches and methodologies that can be used by mathematics teacher.

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- Who is M-tea using EMI (define the appropriate teachers' quality to apply EMI in mathematics field).

Rational

we have two reasons for choosing this topic, the first considering English as the language of international communication and the dominate language all over the world in the field of science, technology, business and other fields, the second one is personal, as I am a teacher of mathematic for support lessons and I am passionate about this subject, it sadden me greatly about our children's failure and evasion of studding mathematics, which forced us to research the obstacles & difficulties that student face in the implementation of EMI.



Keeping pace with scientific technology development

New work area

Improve linguistic proficiency.

Graduation with two competencies

Easy use of research mechanisms

Access various new technology and invention

Access academic & scientific information

Commination process with foreign student more effective

Adopting English as a medium of instruction in mathematics faculty

The benefits of EMI in mathematics field

Chapter One

CHAPTER ONE

I. CHAPTER ONE

With the increasing importance of the English language in the world, as well as its significance as a medium of instruction within educational institutions to offer modern and global education, many universities, including Algerian universities recently, have adopted English as a medium of learning to enhance their global standing. Whether of EMI is a topic that has been addressed in many studies, and in this chapter we will discuss it in detail: starting with teaching English as a foreign language and its instruction in the university sector, followed by the challenges students face in learning in English and the challenges teachers face in choosing the appropriate methodology and the appropriate frame work, whether it would be the ESP methodology, EMI methodology or CLIL_ised EMI methodology?

I.1. Section one

This research seeks to investigate the implementation of EMI in mathematics field, as a starting point we touched of the definition of EI at university level & students' attitudes using EMI.

I.1.1. English Language and the University Sector

Teaching English as a foreign language in Algeria or in elsewhere has gone through various encouraging innovations aiming at helping Learners be skilled and proficient communicators in English to satisfy the demands of globalization and modern societies. Teaching English involves various aspects that aid in understanding the language and acquiring the necessary skill to use it effectively. these aspects include reading and comprehension writing, listening and oral comprehension and speaking.

Utilizing English within higher education institutions and universities for both research and pedagogical purposes is regarded as an essential avenue that policymakers worldwide should carefully consider. Balan (2011) suggests that the integration of English in higher education is seen as "an inevitable process leading to enhanced international academic communication globally" (p.15). This integration yields benefits evident in university exchange programs, where learners encounter no linguistic barriers during research due to their English proficiency. Furthermore, technological advancements have revolutionized the teaching and learning of English. Institutions at the higher education level should contemplate adopting English as a medium of instruction to accommodate the widespread use of various technological tools and innovations. This language application can facilitate learning and open doors for new innovations and discoveries. Scholars like Moured and Bielefeldt (1999) argue that

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technology's primary benefit lies in enhancing people's lives. Therefore, researchers and academics must embrace English to effectively utilize these technologies, as most technologies stem from studies and research conducted in English. Moreover, English serves as a gateway to accessing academic and scientific information. Most academic, scientific, medical, and technical publications, such as Elsevier, Nature, Science, and Taylor & Francis, are predominantly published in English. Additionally, proficiency in English provides learners from all fields with expanded opportunities to pursue studies globally. Graduate students proficient in English stand a better chance of securing employment across various sectors, including medical, industrial, and technological fields, as well as in international corporations.

I.1.2. Student challenges

While EMI offers many benefits, it also poses challenges for both instructors and students. Language barriers, linguistic diversity among students, and the need for vocabulary in technical subjects like mathematics can hinder effective communication and comprehension (Dafouz and Smit, 2016)

Bradford (2016) identified three types of challenges that may face people involved in the delivery of courses through English which include linguistic, cultural, and structural challenges. Moreover, there are numerous challenges which face the students such as, Who is teaching the EMI courses?

This depends on the teacher's method of conveying information to the student. Regardless of how proficient the teacher is in the English language; the key issue lies in the way the information is delivered. The problem here is not the language itself, but rather the approach the teacher uses in explaining and clarifying concepts to effectively communicate the information. For many instructors the biggest challenge is not the use of English itself but rather giving use of new teaching style and method. You can have a strong English but still not be successful in EMI course because the teaching method is not interesting for students. Then, Students are often not prepared because the student lacks sufficient proficiency in the English language, there is a reluctance to speak English in class due to the previous learning environment being in another language and the student has not been adequately prepared in advance to study in English. Next, the effective materials: There is a lack of necessary educational tools and resources, including references and books. Additionally, acquiring books in English is considered expensive during research. In addition, it is difficult for the student to understand the content during the lesson; sometimes they have to go home and re-study the

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lesson on their own. Assessments in EMI: The student's failure is not due to a lack of understanding of the lesson content, but rather because they do not understand the language in which the lesson is delivered. If the explanation were given in their native language, it would be easier for them to comprehend. Furthermore, class Size a large EMI class is very difficult since students need more individualize instruction.

I.2. Section Two

After the application of EMI in the mathematics field the teacher found himself facing many difficulties and challenges such as in availability of guidelines, References, and lack of good training, in addition, he faced the most important challenge which is choosing the appropriate method and frame to deliver his lessons, is it ESP methodology? EMT methodology? Or CLIL-ised EMI methodology? This is what we discuss it in this chapter.

I.2.1. Definition of ESP

Hutchinson and Waters : (1987,p.19) stated that, ” ESP is an approach to language teaching in which all decisions as to content and method are based on the Learners reason for learning” .In this context, learners learn English in order to be able to read textbooks written in English that are relevant to their field of study, or to use English in workplace.

Robinson: (1991, P.2) states: “students learn English not because they are interested in the English language or English culture as such but because they need English for study or work purposes.”

Basturkmen: (2006, p.18) asserts that: ‘in ESP, language is learned not for its own sake or for the sake of gaining a general education, but to smooth the path to entry or greater Linguistics efficiency in academic, professional or workplace environments.

English for specific purposes refers to the teaching and learning of English as a second or foreign language where the goal of the learners is to use English in a particular domain (Paltridge and Starfield, 2013).

I.2.2. ESP Methodology:

A course design refers to the process of planning and structuring a course to achieve the desired goals.

There are a number of elements involved in creating a course The results of the needs analysis, The course designers approach to syllabuses and methodologies, and Existing materials (Robinson 1991) in a similar vein, Hutchinson and Waters (1987 : 65) Have defined

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a course as an integrated series of teaching learning experiences whose ultimate aim is to let the Learners to a particular state of knowledge.

Three types of ESP course design approaches can be distinguished:

- Language Center course design approach
- skills centered course design approach
- learning centered course design approach

I.2.2.1. Language centered approach

The language centered approach is the simplest way to develop a course. It is known to most English teachers it's a goal is to connect as directly as possible the analysis of the target situation and the content of the ESP course.

I.2.2.2. Skills centered approach.

numerous countries particularly in Latin America have implemented the skills centered approach in universities and colleges students are required to read subject texts in English because the text is not available in the mother tongue several ESP projects have been launched with the specific objective of developing students' ability to read in English in response to this need.

The basic hypothesis is that behind every language Behavior there are underlying skills and strategies which the learner uses to produce or comprehend a discourse to fundamental principles of skill-centered course design are discussed.

I.2.2.3. Learning centered approach

the learner centered approach is determined in Charlie by the Learners desire according to this approach the Learners decision determine the learning process completely teachers can influence what they teach but Learners viewed as a process of making sense of the flow of new information based on the Knowledge and Skills they already possess.

Hands learning is an internal process that depends on the knowledge Learners already possess and, on their motivation, and ability to use it the process of learning is more than just a mental activity it involves individuals and Society negotiating.

learning is considered as a process in which Learners make sense of how new information is presented by using the skills.

I.2.3. ESP teacher

It will already be clear that we regard ESP teaching as extremely varied, and for this reason we use the term 'practitioner' rather than 'teacher' to emphasise that ESP work involves much more than teaching.

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I.2.3.1. Personal qualities of ESP teacher (Robinson, 1991:80)

- Personal attributes (enthusiasm, the ability to develop and administer a course, work rate, rapport, a knowledge of students' world) as equally important as the ability to write teaching materials.

- An interest in the student's specialist area (at least an open mind about it), an interest in the learner's language, a readiness to respect students (whether adults or near adults)

- The flexibility to change from being a general language teacher to being a specific purpose teacher, and the flexibility to cope with different groups of students, often at very short notice

The role of ESP teacher.

I.2.3.1.1. syllabus designer

- The need analysis done previously will help the ESP teacher to organize the material based on grammar, Situational, or functional point of view.

I.2.3.1.2. A material writer

- The material must fit with the student's needs the goals set by the ESP teacher.

I.2.3.1.3. Needs Analyser

- ESP teacher should gather information of the weak and strong points in his/her student process.

- Once the process mentioned above is done, the ESP teacher will have good support for writing materials.

I.2.4. Definition of EMI.

EMI is broadly defined as the use of the English language to teach academic subjects other than English itself in some countries or territories in which most of the populations first language is not English 2023-03-21 (Macaro, 2020, p534)

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

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At face value, English-medium instruction may seem a self-explanatory term, describing any form of formal education in which teaching is carried out in English (Dafous and Gay 2022;1) However, the realities of EMI are more complex in terms of the geographical location, educational level and orientation of participants, and languages involved.

Based on some expert's views, it can be concluded that the definition of EMI is the use of English by both students & teachers in teaching and learning L2 process. The student uses EMI in presentation, discussion, asking & answering the questions while the teacher uses EMI to deliver the content, giving feedback and confirm the student's understanding. Cited in Benchai, Berafa University, Thailand, (2022)

I.2.5. EMI methodology:

According to Julie Darden (2014), these are just a few examples and specific methodologies used in EMI approach depending on the subject, student needs, and teacher preferences.

I.2.5.1. Planning and needs assessment:

Identifying language demands: this goes beyond just vocabulary lists. It involves analyzing the specific academic language required for the subjects. Here is how teachers can do this. (ibid)

Task analysis: break down the tasks student needs to perform in the subject e.g analyses of physical phenomenon solving a math problem). Identify the specific language functions (e.g comparing data, outlining steps) and vocabulary needed for each task, (cited in Darden, 2014, p4).

Discipline specific language (DSL): this refers to the specialized vocabulary and grammatical structure used in a particular subject. Teachers can consult textbooks & academic articles to identify the relevant DSL for their subject.

I.2.5.1.1. Task analysis:

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I.2.5.1.2. Discipline specific language (DSL):

this refers to the specialized vocabulary and grammatical structure used in a particular subject. Teachers can consult textbooks & academic articles to identify the relevant DSL for their subject.

I.2.5.2. Student needs analyses: this goes beyond just a standardized English test score, consider these factors.

I.2.5.2.1. Prior English language exposure:

how much English experience do students have overall and specifically related to the subject matter?

I.2.5.2.2. learning styles:

do some students learn best visually through hands-on activities or through discussion tailor EMI strategies to cater to different learning styles.

I.2.5.3. Delivery Method (EMI Techniques):

Macaro, 2018, summarized EMI techniques as follows.

I.2.5.3.1. Scaffolding:

here are some specific scaffolding teachings for EMI.

I.2.5.3.1.1. Frontloading vocabulary: Introduce key vocabulary terms before the lessons and provide visuals, synonyms, or real-word examples to aid comprehension.

I.2.5.3.1.2. Chunking information: break down complex concepts or instruction into smaller & manageable parts.

I.2.5.3.1.3. Graphic organizers: use mind maps, diagrams, or flowcharts to visually represent concepts and vocabulary relationships.

I.2.5.3.2. Sentence starts or frames: provide sentences to guide students in forming grammatically correct sentences related to the content.

I.2.5.4. Task based learning:

here are some examples of task-based learning activities in EMI.

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- Project based learning: students work on a project that requires researching a topic, analyzing data, and presenting their findings in English.
- Problem solving activities: students collaborate to solve problems using English to discuss, explain reasoning, and arrive at solution.
- Debate on simulation: students take on specific roll and use English to argue or discuss a topic from different perspectives.

I.2.5.5. Differentiation:

here are some ways to differentiate instruction in EMI.

- Tiered activities: offer activities with varying levee of difficultly on complexity based on students' English proficiency.
- Choice boards: provide students with options for tasks or activities that allow them to demonstrate understanding at their own level.
- Grouping strategies: use small group work or peer tutoring to provide additional support for students who need it.

I.2.6. EMI teacher:

EMI teacher is an educator who uses English as the primary language of instruction in a classroom setting. He is expert in his subject area, whether it is math's, science or physics and he deliver those lessons entirely in English language, which means he has two competencies: subject and E-L competencies. And since policy makers impose EMI in high education, it has caused stress, tension, and insecurities for EMI teacher, many of them have tried to survive this set policy using a trial-and-error methods, some started to translate the Content into English, while others attempted to attend professional development. Regardless of diverse ways trying to survive EMI pedagogy, many EMI teachers are still experiencing difficulties in executing EM pedagogy, and little attention has been put forwards preparing EMI teachers (Dafouz et al2020; plottner; 2019; Macaro et al; 2018; Roberts et al;2019). (Cited in Denchai probjandee 2022)

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I.3. Section three

since mathematics student was asked to study the curriculum in English language, this put him in a new challenge, led him to study the language in line with the content and this is namely called CLIL approach (content and language integrated learning).

I.3.1. CLIL definition:

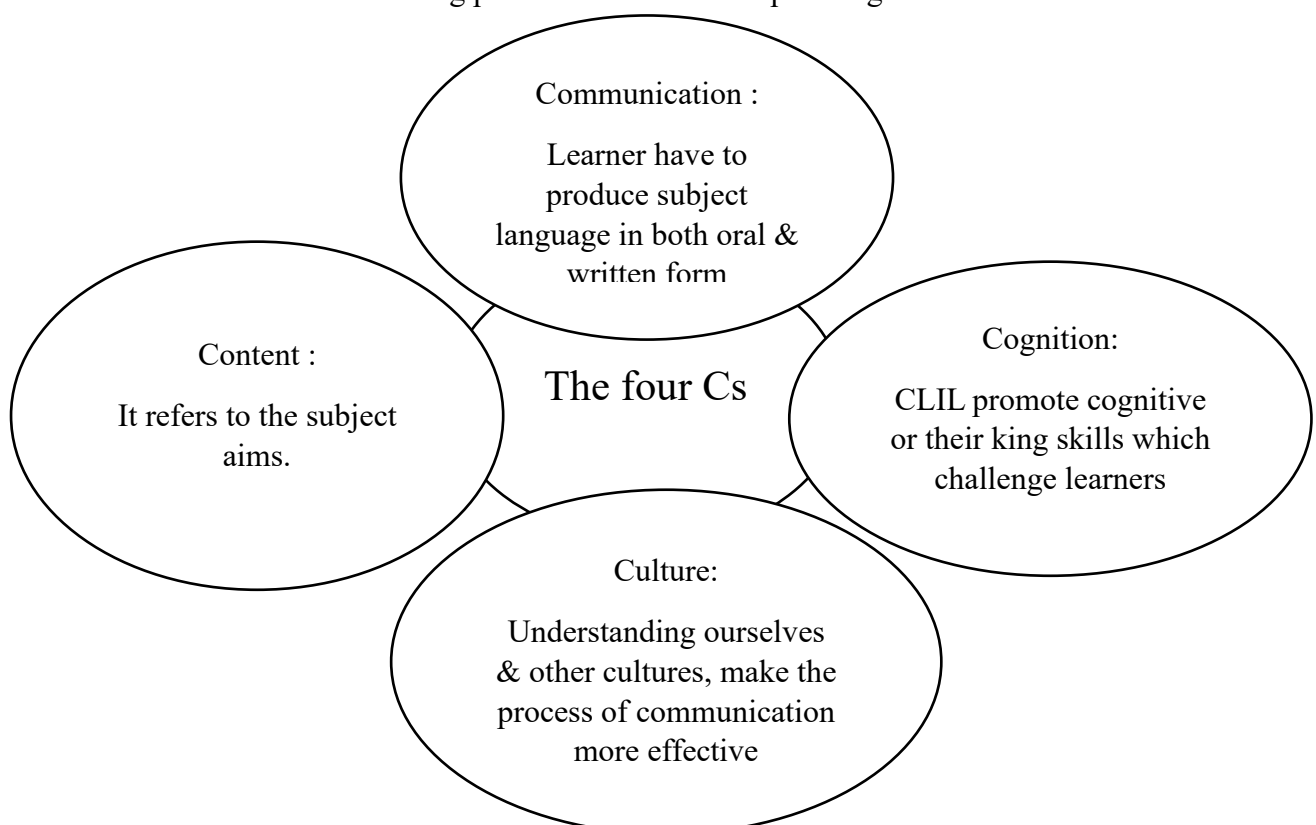
According to Dearden, J (2014, p8) CLIL is an umbrella term covering a dozen of Education approaches (immersion, bilingual, education, multilingual education, language showers, pains linguistic ex....

Jindrish, S (2013, p6) defines CLIL as a continuum of educational approaches devoted to two main components, language, and content whereas British council page stated that CLIL is referred to a dual focused education as lessons have two main aims, unrelated to subjects or topic and on link to language.

CLIL it is an approach in which a foreign language is used a tool in the learning of a non-language subjects in which both language & the subject have a joint role (Marsh in coyle, 2006)

I.3.2. CLIL Methodology

According to Mehisto, March and Frigols (2008) Previous, the basic principles of any CLIL model are cognition, community (or culture), content and communication these principles can also be seen as starting points in CLIL lessons planning.



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The 4 Cs common framework according to Mehisto, March and Frigols (2008) are the basic principles of any CLIL model namely, cognition, community, content and communication, these principles can also be seen as starting point in CLIL lessons planning, in other word, it can be considered as CLIL methodologies used by professor.

Coyle, Hood, and March (2010:4) demonstrate the 4 Cs framework which includes and integrates the following aspects.

I.3.2.1. The first C is content:

It is the subject matter activating prior knowledge, it is usefule for connecting what they learn with what they already know using, KWL charts (what you know, what you want and what you have learned), Driving question or effective question and also call the bluff (two truth one lie; using new vocabularies and many definitions of a concept.

I.3.2.2. The second C is communication:

Coyle, D; Hood, PH; March, D (2010) explained that communication means language of, language for and language through.

Language progression through language can be defined as the systematic development of emerging language from specific context, supported by structured grammatical awareness using knowledge in new ways accessing unknow language and so on.

Language of learning (coyle, et al) which is the specific subject language, it is linked to an analysis of content, Thematic, syllabus demands, grammar, vocabulary, structure, and other elements When presenting a new concept.

Language for learning is also known as an academic language including orders and instructions, it builds up learner range linked to meta-cognitive skills and talk for learning in context real for the learners. Organizing and running a class in English provides an ideal opportunity to exploit the language that occurs naturally in this context and for some student, the lesson may be their only contact with this language. (Coyle et al) focused on the importance to maximize exposure by using the L2 in class as much as possible natural and authentic by giving instruction, establishing routines and managing students' behavior, it can be repetitive and will eventually" sink in" through this continual exposure to the same expression.

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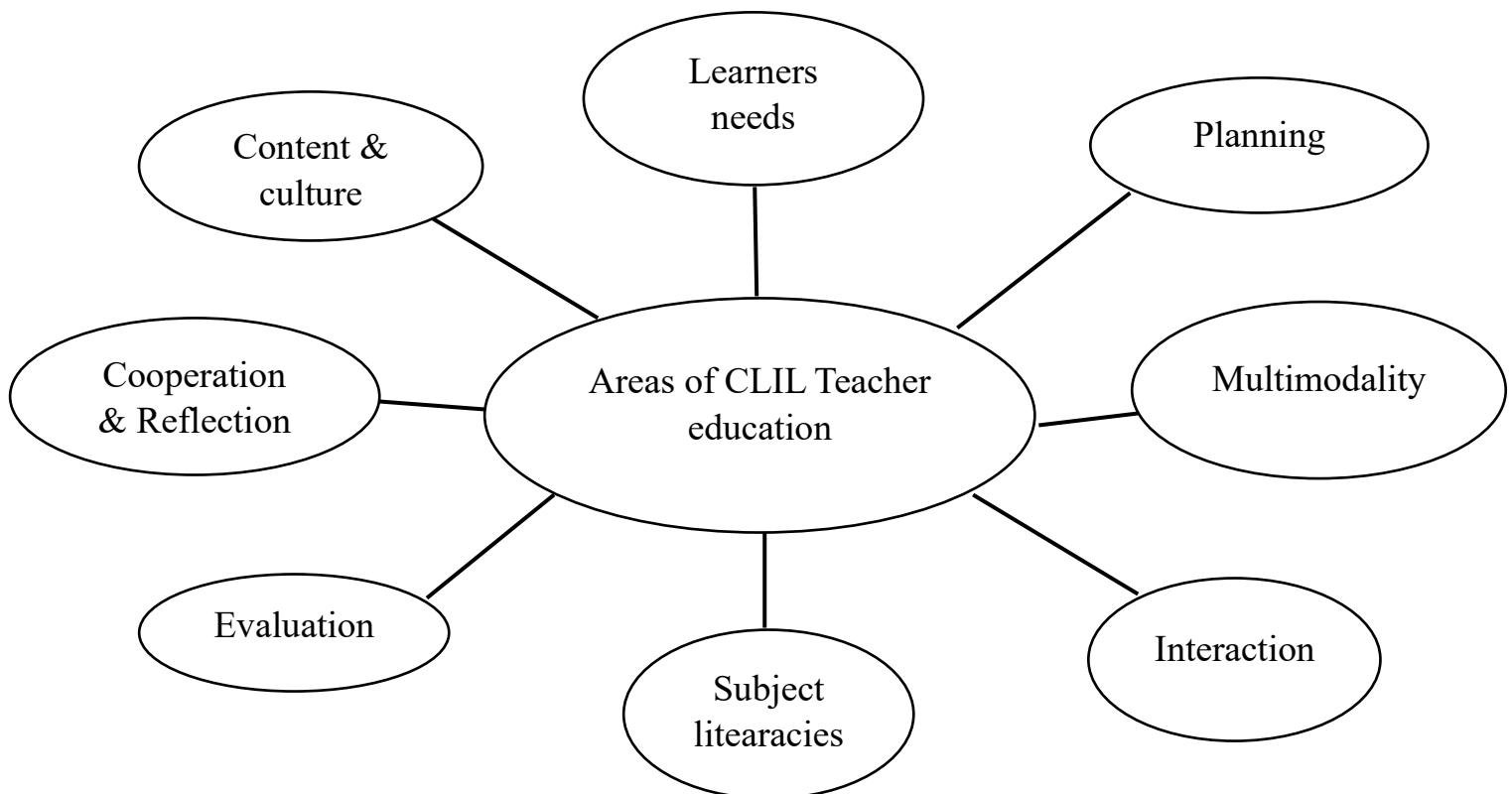
I.3.2.3. The third C is cognition:

Coyle et al (2010) confirmed that cognition is the process by which the input content is transformed, reduced, elaborated, recognized, and used. Learners need considerable support to develop their thinking skills in the target language and they need to communicate not only the everyday functional language used along the class, by they also need to communicate the cognitive-academic language of school subject, to do so, student must be presented by challenging activities and opportunities to verbalize learning strategies.

I.3.2.4. The fourth c is culture:

The cultural aspects of CLIL means the development of intercultural understanding and global citizenship, this framework integrate content and language learning in a variety of context.

I.3.3. CLIL Teacher



CLIL Teacher is two in one, he is an academic subject Teacher obtained an advanced degree in a precise subject like mathematics, science or physics, in addition he has an

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experience in language teaching, he needs to make the content knowledge understandable to learners through a specific language.

The role of a teacher in a CLIL classroom is extremely important he should have the quality that Whitty (1996 : 89-90) enumerates namely: “ Professional values, professional development, communication, subject knowledge, understanding of learners & their learning” additionally, the CLIL teacher should also recognize the need to change established habits which might we use it in the L1 when teaching the same content in L2 (Adam Mickiewicz university press ,Poznan)

Researchers believe it strongly that CLIL teacher is a central “element” in determining success in learning subjects through and other language and which is very important for those teachers who know that their linguistic skills are limited to adapt their content & methods accordingly. March et al (2001:7)

March et al Claim that this is where code-switch and preparation become crucial”, on the other hand,

(Hall,2001:120) stated that it is very important to remember that being able to use L2 does not mean being able to teach in that language in a given situation, If a CLIL teacher is to teach extensively in the L2 it is an essential that she / he has sufficient command of the language.

March et al (2001:78-80) outline the idealized competencies required of CLIL teacher:

CLIL teacher competencies required of CLIL teacher.

a- Language / communication

- Sufficient target language knowledge & pragmatic skills for CLIL.
- Sufficient knowledge of the language used. b- Theory
- Comprehension of the differences & similarities between the concepts of language learning acquisition.

b- Theory

- Comprehension of the differences & similarities between the concepts of language learning acquisition.

c- Methodology

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- Ability to identify linguistic difficulties.
- ability to use strategies (e.g repetition, echoing et... for correction & for modeling good language used
- Ability to use communication / interaction methods that facilitate the understanding of meaning.
- ability to use dual-focused activities which simultaneously cater for language & subject aspects.

I.3.4. CLIL- ised EMI

Content and language integrated learning (CLIL) refers to a dual-focused approach in which an additional language is used for the learning and teaching of both content and language (Coyle et al;2010),(Cited in Hu,2023 P8-2).

With the popularization of multilingualism, CLIL gained significant recognition in both educational practice and research. Another important form of bilingual education is English-medium instruction (EMI), where English is used as the language of instruction in subjects other than English, and it has experienced global growth across all educational stages (Macaro2018) while the terms CLIL and EMI are sometimes interchangeably at the layperson's level they differ in nature.(Abdujabbrover & Sadirova 2020) (belles-fortuno,2021;Cario-pastor, 2021) .Consequently, some countries and region began implementing CLIL in secondary schools and high education (Macaro et al, 2019), this practice justified by the fact that CLIL can address both the content and language knowledge gaps in school learners, while EMI better caters to university students who possess English proficiency but lack knowledge in specific discipline (Macaro, 2018). In recent years. However, the concept of CLIL ised EMI has emerged in higher education, in which EMI is used not only for content delivery but also as a means for student to improve their English skills (Aguilar-Perez, 2022, Moncada-Comas & block, 2020). these blurs the distinctions between CLIL and EMI, promoting contemplation on whether CLI-ised ELI should become an educational trend or is merely a fallacy to be dispelled (cited in Hu ,2003)

Chapter Two

CHAPTER TWO

Fild of investigation

Introduction

1. methodology
2. data collection tools
 - 2.1.population and sampling
 - 2.2.teacher sample
 - 2.3.student sample
3. structure of dissertation
4. student's questioner
5. discussion of the mine results
6. teachers' interview
7. discussion of domain results
8. limitation of the study
9. suggestion for further research
- 10.conclusion

CHAPTER TWO

II. CHAPTER TWO

Introduction

The present chapter is devoted to the practical part of this research, which seeks to investigate the first interaction of the implementation of EMI in mathematics field at Ghardaïa university. It's present and analyses the finding from data collection in the current study in accordance with theoretical framework. In doing so, two data gathering tools have been used. Thus, questioner was administrated to f-y-m-s and an opened interview was conducted to their teachers specially. E1 E2 teachers. Furthermore, the interpretation of this results is provided to find an answer to the research question. It is concluded with some limitation of the study and some recommendation for further research.

II.1. Methodology

We used two main tools descriptive & analytic method in our research to test our hypothesis the descriptive method to determine students' attitude or difficulties toward EMI and to define the appropriate approach that will be used by M-tea.

The analytical methods are used to investigate the problem and to answer the questions above so far, we administered questionnaire to f-y-m-s and an open-ended interview to Some M-tea (geometry, Algeria, & logarithmic models) & especially to E1 and E2 teachers at university of Ghardaïa. Data collected tools.

II.2. Data collected tools.

The researchers seek to achieve a set of aims via highlighting a variety of research questions, the exploratory case study seems to be the best method that fits this situation. Throughout this research work, an attempt will be to discover if the sample has difficulties in EMI implementation.

The research also wants to introduce some define of approaches & methodologies that can be used by M-tea.

To accomplish the pervious aims, a mixed approach using qualitative & quantitative methods is adopted to ensure the reliability of the findings.

II.2.1. Population and sampling

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Since the goal of this study is to examine & investigate the implementation of higher ministry instruction in mathematics field, both M-tea & f-y-m-s & E1 E2 teachers concerned by this study.

II.2.2. Teacher's sample

In this dissertation, we decide to conduct interview will M-tea & specially E1 E2 teachers.

II.2.3. Students sample

The f-y-m-s (LMD) at university of Ghardaïa are the case study of our research, the student will be administrated the question are related to their new position.

II.3. Structure of the dissertation

The dissertation is divided into two parts a so theoretical part divided in three sections and particle part include many steps.

The first part or chapter one deals with the students' challenges & difficulties in implementing EMI.

The second part or chapter 2 deals with the data analysis, it provides a detailed analysis of both students' questionnaire & teacher interview.

II.4. Students Questionnaire:

II.4.1. Description of the questionnaire:

The questionnaire survey was addressed to first year mathematics student at university of Ghardaïa during the academic year 2023/2024, it is consisted of 12 questions which discuss the same purposes so that researcher gathered as much as students' opinions trough oral, questionnaire to be in the picture and written questionnaire to obtain sufficient information. Indeed, the researchers explained each question to the sample to facilitate the answers.

It is worth nothing that questions varied from close-ended to open-ended questions. A total of 35 students participated in the survey of whom. 5 males (14%), 30 females (88%)

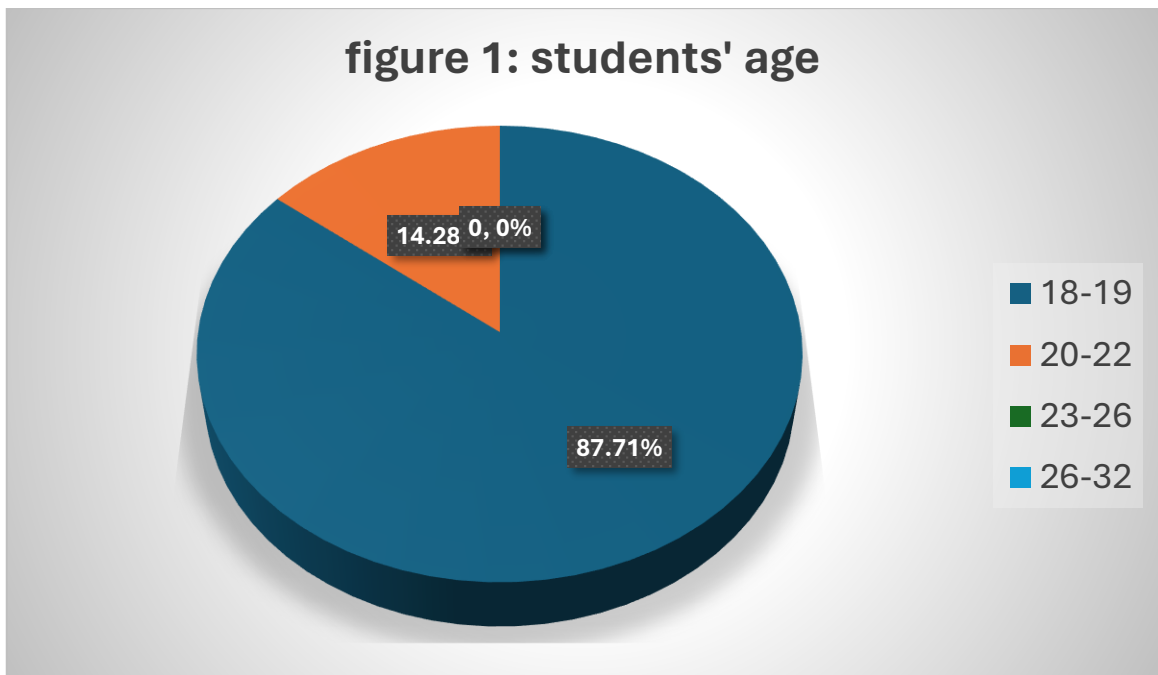
II.4.1.1. Analysis of the results:

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1. Age:

Table 1 : students' age

Age	Number	Percentage
18-19	30	85.71%
20-22	5	14.28%
23-26	X	
26-32	X	
Total number	35	100%



The first question Was about the student's age. As seen from the pie chart above, the ages of students vary from 18- to 22-year-old. The majority (88 %) were from (18 to 19) who attended.

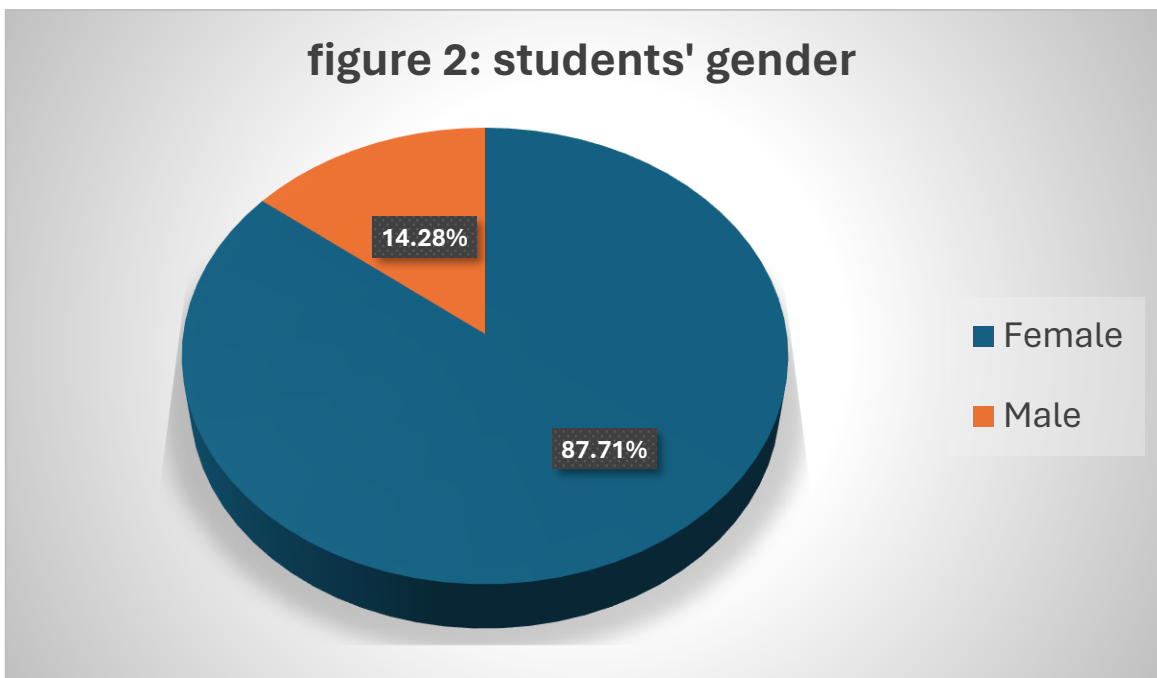
The classes did not repeat the year, Secondly, (12%) represent students from 20 to 22.

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2. Gender

Table 2: students' gender

Sex	Number	Percentage
Female	30	85.71%
Male	5	14.28%
Total	35	100%



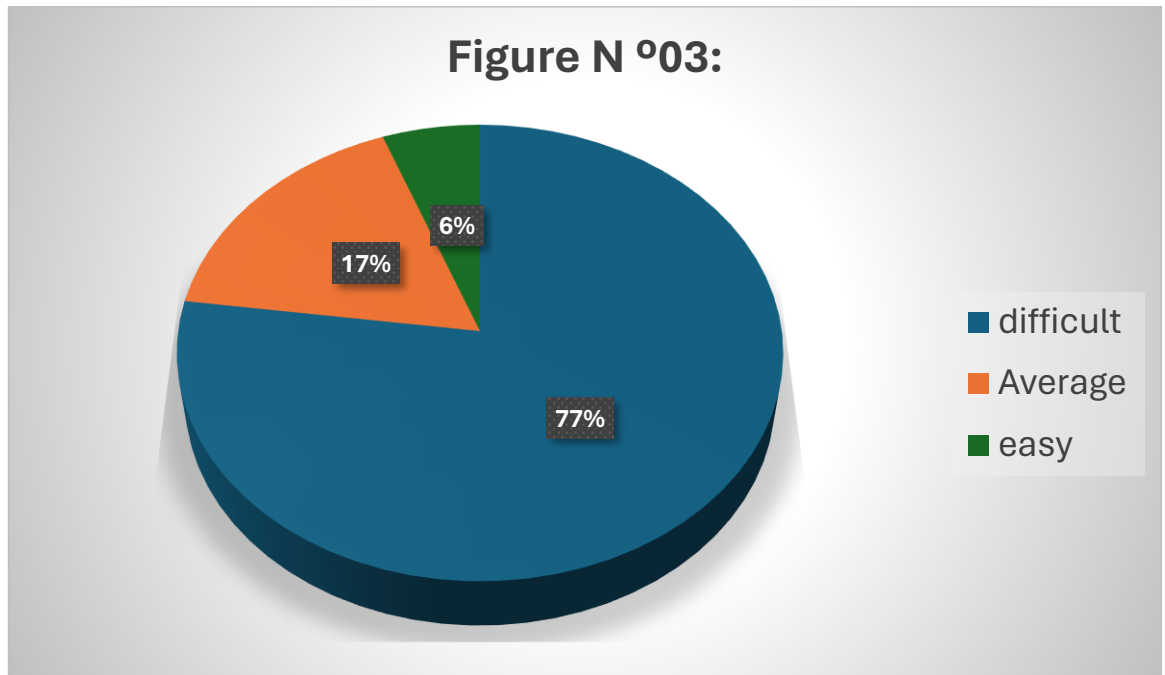
The results showed that most of the respondents 88 % were females while 12 % were males.

3. How do you find university education?

Table 3: student attitude toward university education

Options	Responses	Percentage
difficult	27	77.14 %
Average	6	17.14 %
easy	2	5.71 %
Total	35	100%

CHAPTER TWO



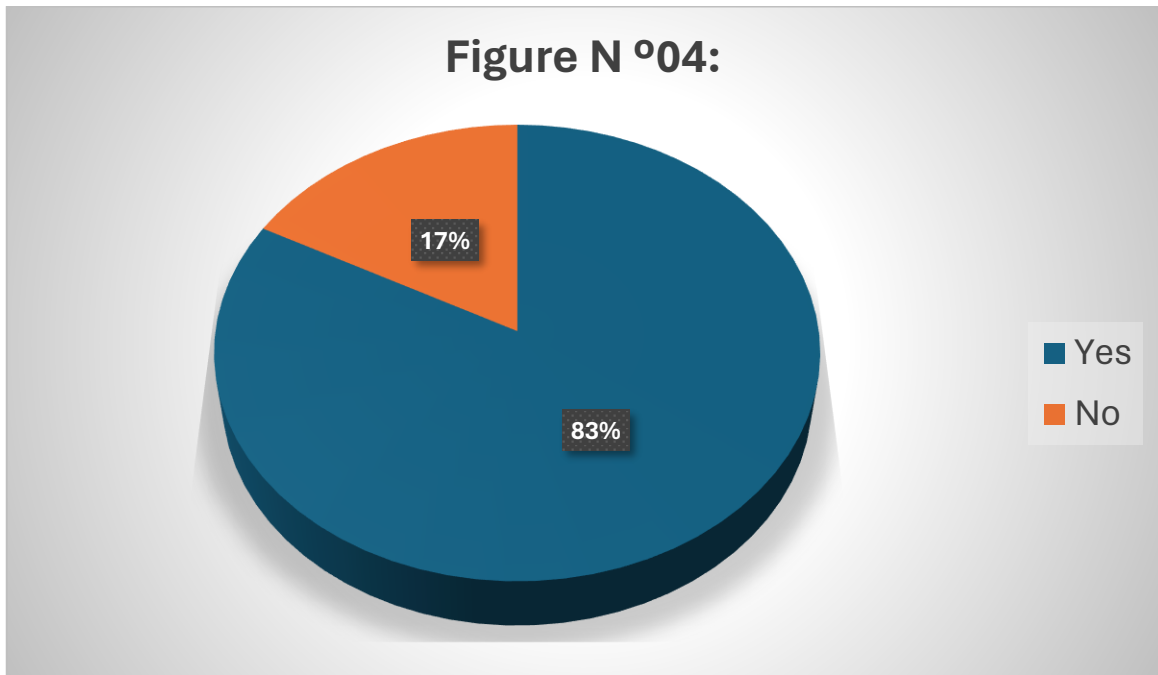
This question is designed to know the student attitude toward university education, most of them 77 % (27 students) agreed that studying at university is difficult and they even added the word “very” to difficult, where 17% (6 students) find the study average and they can overcome the difficulties and a small percentage found 6% (2 students) find it easy.

4. Do you enjoy all the lessons delivered in English language?

Table 4: The acceptance of E-M-I

Options	Number	Percentage
Yes	29	83%
No	6	17%
Total	35	100%

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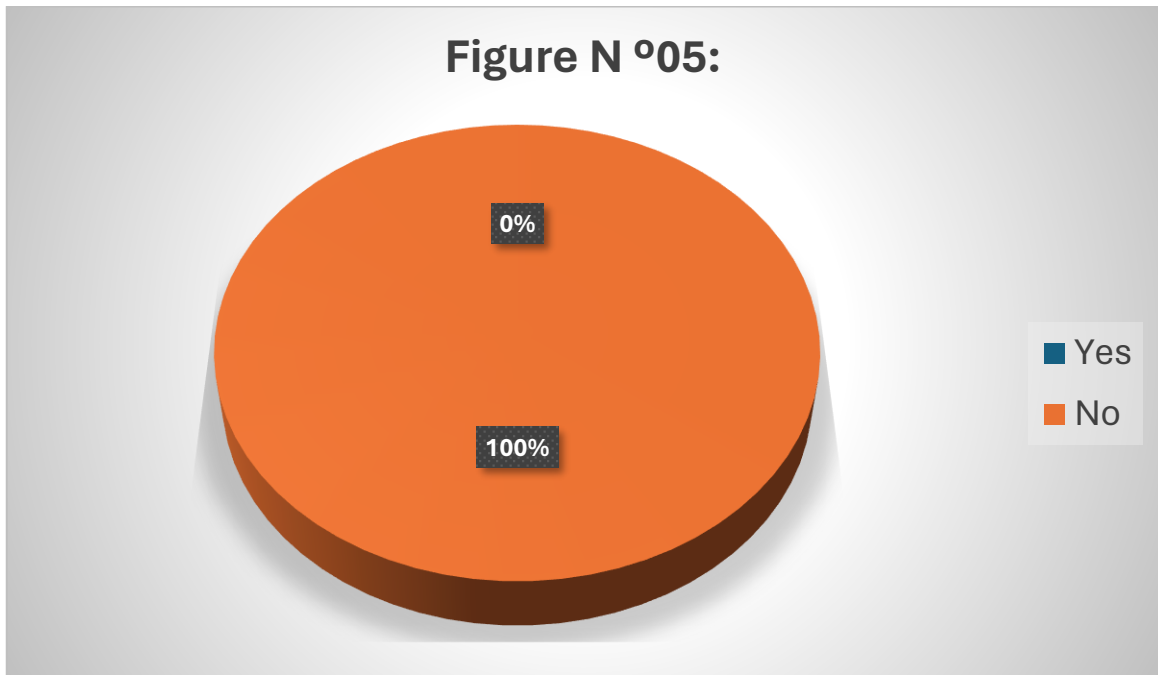
The results showed that most students 83% (29 students) welcome English as a medium of instruction while only (17%), six students disagree, and they do not welcome the idea.

5. Are all subjects (modules) taught in English? And what are these modules?

Table 5: subjects taught in English.

Options	Number	Percentage
Yes	0	0%
No	35	100%
Total	35	100%

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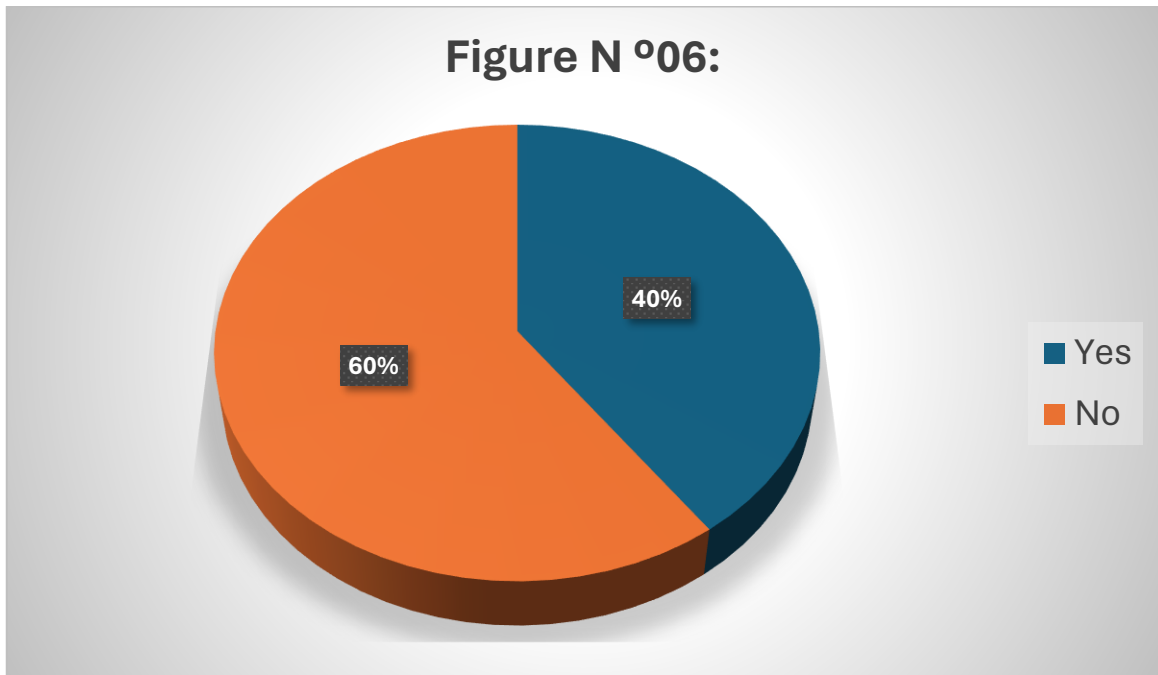
- What we understand from the written and oral answers that some objects are taught in English in varying proportions, while others.
- Taught in French & Arabic languages, they said that all applied work asses are taught in English (T.D).

6. Does the English module E₁, E₂ serve other modules?

Table 6: E₁, E₂ effectiveness over other modules.

Options	Number	Percentage
Yes	14	40%
No	21	60%
Total	35	100%

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If no, why?

The table below shows the reasons why E_1 , E_2 don't serve other modules.

No reasons	Reasons
2 students	<ul style="list-style-type: none">- Lack of grammar knowledge- Lack of vocabularies- The use of long complex terminology- The two-content mismatch- Lack of E_1, E_2 interest.- Difficulty focusing on language abilities and scientific content at the same time.

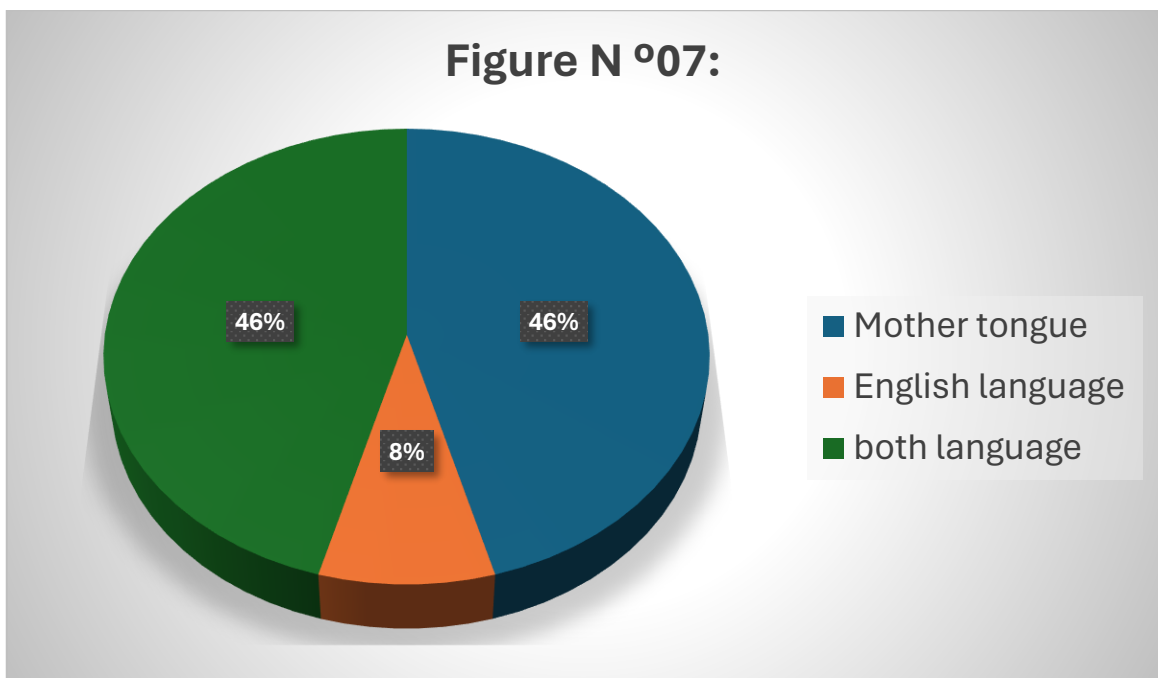
The student's answers were different, some of them (40%) confirmed that E_1 and E_2 help them to understand the other modules, while others (60%) denied the positive effect of this module argued for several reasons.

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7. Understanding the lesson is better for the teacher.

Table 7: the appropriate teaching language

Options	Responses	Percentage
Mother tongue	16	45.71%
English language	3	8.57%
Both language	16	45.71%
Total	35	100%



- Only 3 students prefer English as a medium of instruction and it was an unexpected result. While 16 students (45.71%) prefer to go back to what they are accustomed to studying mathematics in the mother tongue, claiming the difficulty of the subjects is enough for them. Whereas other 16 students (45.71%) prefer be lingual study in both languages Arabic & English.

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8. What is the method used by the teachers we asked this question in general to discover the different teacher's method used during the lesson, and answers were as follows:

- The teachers use English in some paragraphs.
- The teacher translates the texts from French to English.
- The teacher uses bilingual explanation (Arabic & English)
- Some teachers give a warning-up as a pre-existing terry used in the lesson and others give it as a conclusion.

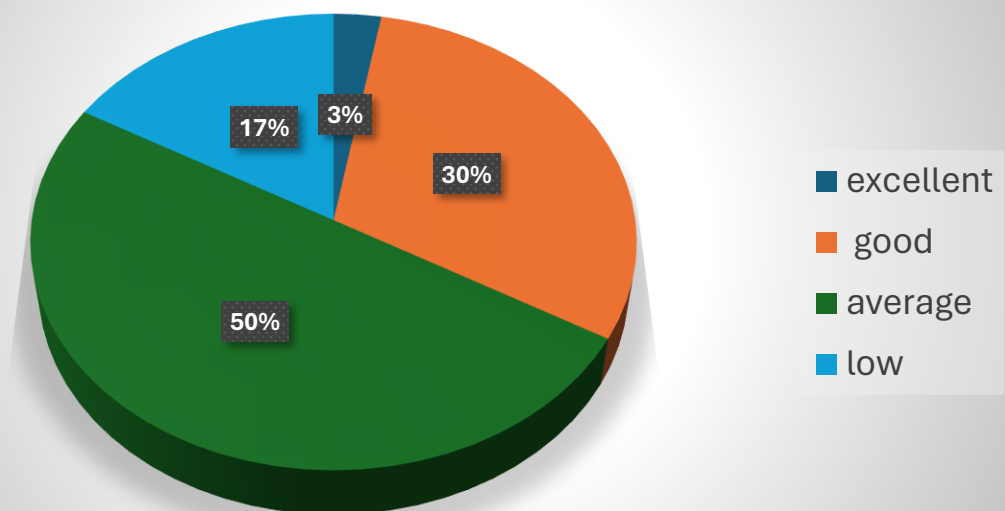
From the students' answers, we realized that the professors do not adhere to a specific method and everyone has the freedom to conduct the lesson.

9. Your understanding of question's exam is.

Table 8: attitude toward question exam

Options	Number	Percentage
excellent	1	45.71%
good	11	8.57%
average	18	45.71%
low	6	
Total	35	100%

Figure N °09:



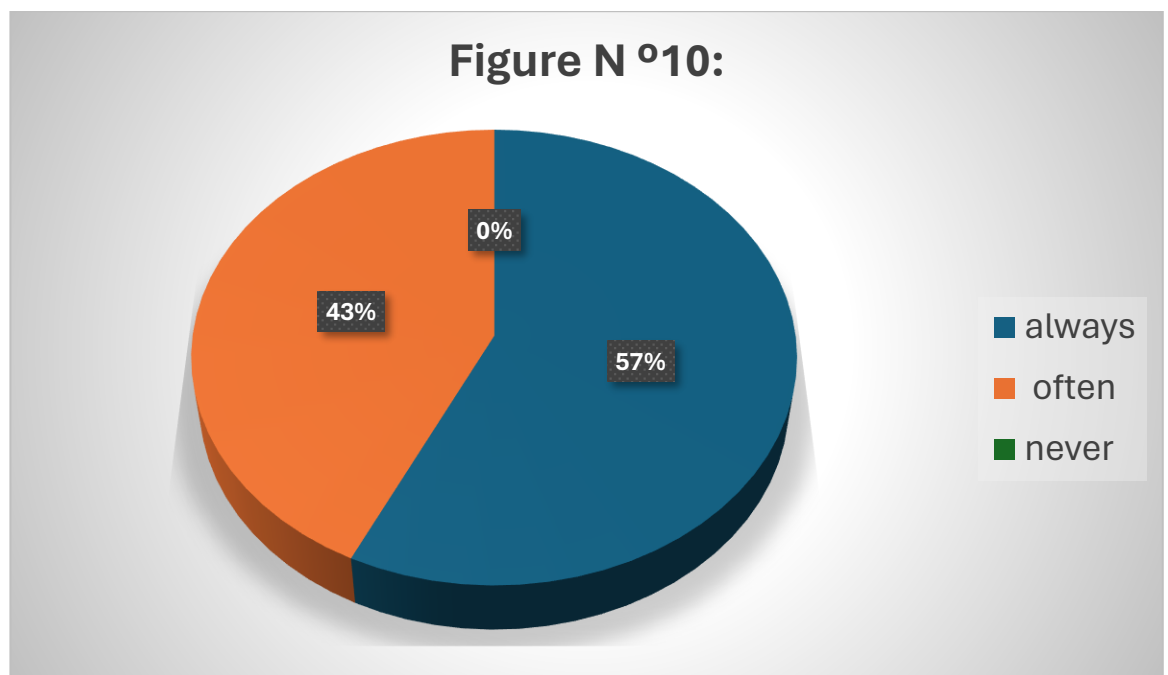
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The question is designed to know student attitude to work question exam written in English. Half of them 51% said that they find it average they can understand the language used, 31% find it good and they can face difficultly while 17% consider it difficult and the use of English increase the ambiguity of the question, as a result they mud teachers' explanation during the exam, and this is what we will discussed in the following question.

10. How many times do you need the teacher's explanation in the exam?

Table 9: teacher explanation in the exam

Options	Number	Percentage
always	20	57.14%
often	15	42.85%
never	0	0%
Total	35	100%



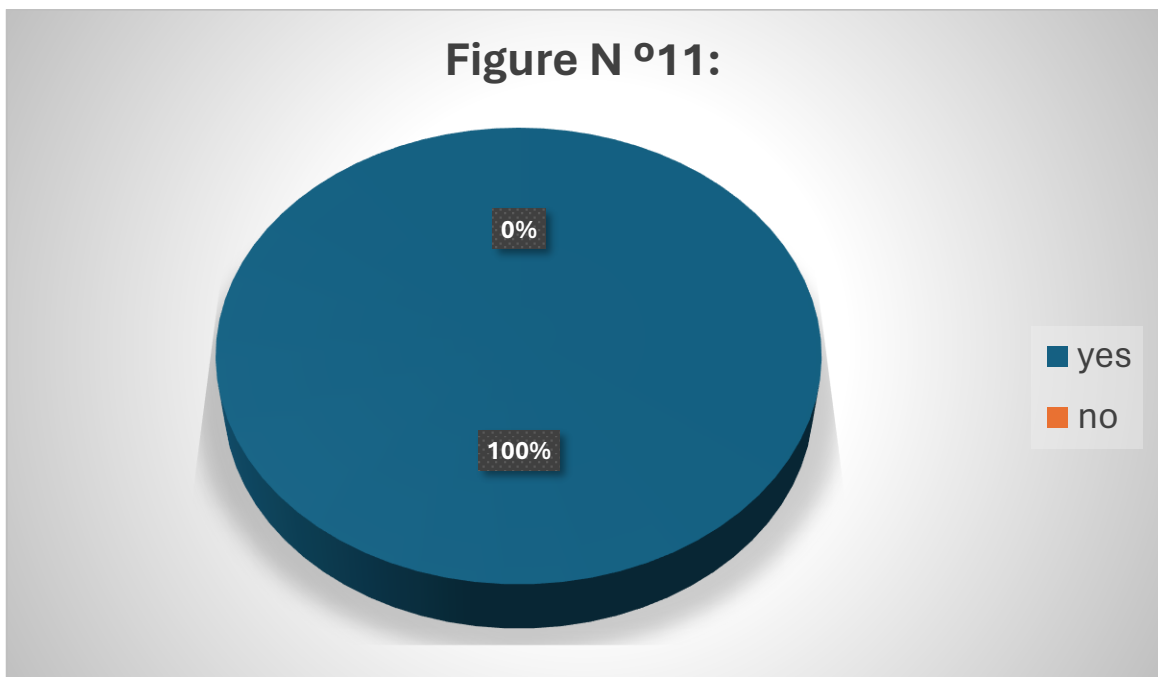
- As we have seen before, student is completely dependent on teacher's expectation in the exam.

11. Does English medium instruction help you to improve your English language abilities?

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Table 10: EMT effects

Options	Number	Percentage
Yes	35	100%
No	0	0%
Total	35	100%



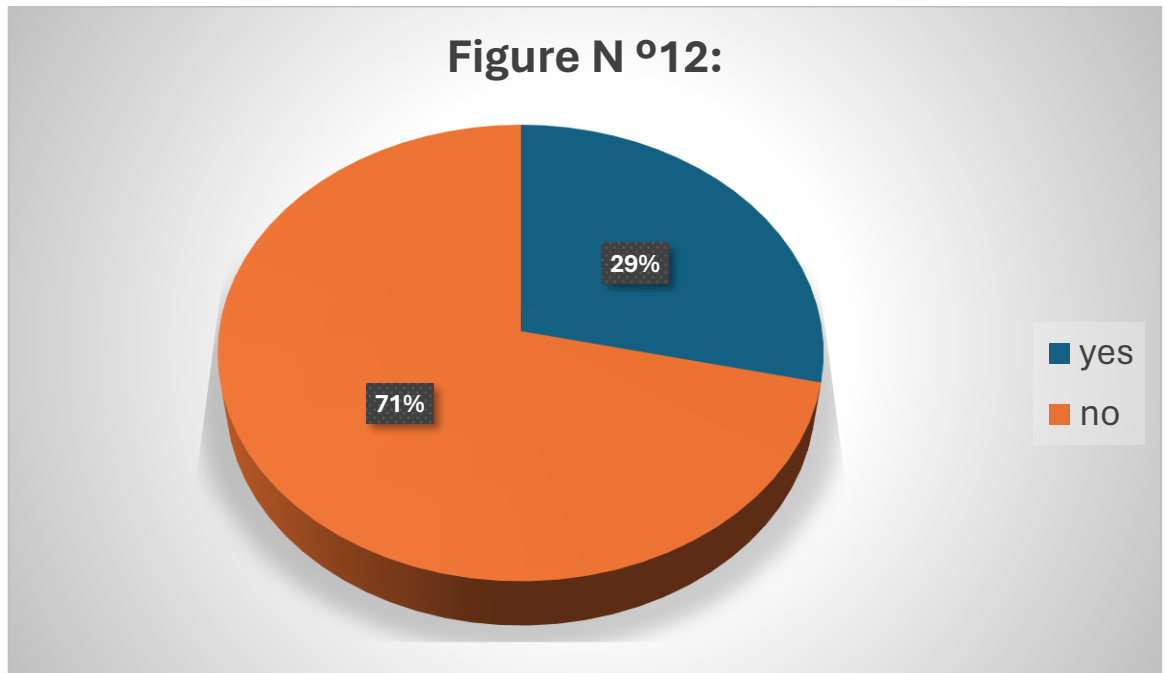
- All the students (100%) unanimously agreed that the adoption of English as a medium of instruction enable them to improve their language abilities.

12. Did you benefit from baccalaureate winners' online session?

Table 11: Online session benefit

Options	Number	Percentage
Yes	10	28.57%
No	25	71.42%
Total	35	100%

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- We asked this question to find out the students who benefit from online session published by ministry of higher education to improve successful students' level English language and we found 71% of them were familiar with the subject, while 29% have not leave of it.

II.4.1.2. Discussion of the main results:

This questionnaire was the first tool used it in our work to collect and analyze information about the first-year mathematics students attitude on applying EMI during the academic year 2023/2024, after the implementation of higher education ministry instruction issued in 2022/2023.

The results show that majority of students where females 88% unlike males who were only 14% and most of them were in their 20s which means, they are well mature and free to answer. The questionnaire also confirmed that during the first interaction in the implementing EMI in mathematics field some students well come and enjoy learning in English, and they preferred it to study in Arabic and French, while others face difficulties in understudying the lessons delivered in several approaches and methods from one teacher to another due to their low and average level in EL on the one hand and their inability to comprehend and understand the content on the other hand what made them afraid of the papers exam written in English and resort check the frequent teachers help during the exam.

As a matter of fact, it's become clear to us from the results that the process and success of this implementation is in the hand of the teachers alone and this

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happens when he can choose the appropriate end correct approach that aims to communicate and teaches the content and the language in the same time.

II.5. Description of Teacher's interview:

A structured interview with six teachers was carried out. The Interview was conducted in the department of Science and Technology at the University of Ghardaïa. The purpose behind the interview was to elicit teachers' opinions

about the strategies and methodology used in class by teachers when they teach math with English .in addition to the main difficulties and challenges that face the teacher and first-year students during the course.

Teachers' profile:

First, the teachers were asked about their name, sex, degree, specialty and how many years they have been teaching.

Analysis of the Results and Findings from the teacher's Interview

What do you think of the new instruction that stipulates teaching mathematics in English?

The aim behind this question is to know different points of view teachers may have towards English. From their answers the majority of teachers agreed that the English language is the main language not just for Science and math but for all Communications . However, for the last few teachers using English as a medium of instruction needs Communications. both students and teachers to master this language.

Which language do you prefer to use for teaching?

The aim of this question is to determine which language teachers use in the classroom. The collected data revealed that there is no standardized method; each teacher uses their own approach. Some mix between three languages—

English, French, and Arabic—to deliver their courses. Others prefer teaching in Arabic to achieve better results since it is the mother tongue. Additionally, some teachers write in English but explain in French or Arabic. All of them rely on E1 and E2.

Do you have prior English language knowledge that qualifies you to teach mathematics in English ?

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The purpose behind this question is to know if the teacher has sufficient skills to teach lessons in English, and has he been adequately prepared, or if he relies on translating some terms to explain the lesson.

All the teachers confirmed that any change will bring many challenges. It is a random decision that is launched by the government without prior planning and because most of them Master French more than English. However, for two teachers using this language Will be easier.

What are the difficulties you face in teaching mathematics in English?

The 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 since they start studying French from primary school. So, applying this language in the scientific field will bring problems in comprehension, understanding lack of vocabulary and fluency.

What Advanced preparation has the ministry made to adopt English as a medium of instruction for the coming years?

This question seeks if the Algerian government conducts an in-depth study before implementing this directive to prepare and train teachers before the start of the school year Did they provide all the necessary tools and educational curricula to support the implementation of this directive and establish platforms for teaching English

Some teachers responded that the ministry had made some preparations before implementing this instruction by opening platforms for learning English and offering intensive training courses for both teachers and students, but this is not enough. Meanwhile, others said that these instructions were implemented without prior preparation.

How do you do to evaluate the students after this instruction?

When we asked the teachers if they followed special methods in evaluating the students.

If the teachers assess the content in English or do they assess both the content and the English language together.

Most teachers emphasize that the instruction is a recent implementation, so they do not focus on the English language as much as they focus on the content. For them, the correct answer is important regardless of the language, whether it is in English or the native language.

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Would you please offer some suggestions for better integration of EMI in scientific fields?

The question seeks recommendations for enhancing the integration of English in scientific fields. It aims to gather insights on teaching methods, materials, and training strategies to improve outcomes. Suggestions from teachers vary, with one proposing increased instructional time for scientific English from primary levels. Another suggestion involves offering modules in English or French based on student preference. Additionally, there's a recommendation to dedicate specific modules to scientific English terminology to bolster students' vocabulary from their first year of study. Another idea involves teaching scientific paper writing through translation exercises emphasizing comprehension over literal translation. These suggestions underscore the need for rigorous teacher training and learner readiness and motivation to embrace English alongside French.

II.6. Discussion of the main results:

The interview was the second tool used in our work to collect and analyze information about the challenges and difficulties that first year student face in implementing English as a medium of instruction in mathematics field. the results show that most of the teachers agreed on the idea of implementing English as a medium of instruction in scientific field especially mathematic.

because nowadays English language is the language of the world. The language of science, knowledge, and Technology .in addition, they have agreed that it's application in Algerian universities will contribute better to make them occupy the highest international ranks, as well as their entry into one of the widest doors in international competitions in terms scientific research and development of scientific competencies.

The second part of the interview was designed to talk about the challenges that may stand in the side of teachers the lack of proficiency and advanced.

preparation before the implementation of this decision She's without prior planning or studies. as the teacher stress that they're difficulties lie in the fact that the teacher must Master the language and Rise their competencies To deal with English in professional manner. furthermore, they stress that the teacher must use the suitable methodology to motivate student to learn and to focus more on acquiring the scientific terminology necessary in their field of study. in assessment the teacher focus on the content Because this instruction is a new. to sum up the teachers give some suggestions to improve This decision.

II.7. Suggestions for further research

- The current research has dealt with the investigation of teachers' and students' attitude towards the use of EMI in mathematics field it is very broad.
- Area of research. In This regard, the following point deal with some possible areas of further research.

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- The integration of CLIL approach in the early stage of education (middle and secondary schools).
- -The integration of EMI approach without CLIL approach at university level.
- -The role of EMI in improving Algerian scientific research.
- -Determine a unified approach to apply EMI in the scientific filed.
- Reviving Arabic language and make it a medium of instruction.

**General
conclusion**

GENERAL CONCLUSION

General conclusion

the present study is based on investigating the implementation of EMI with first year mathematics students at Ghardaïa university after the instruction issued by the ministry of high education in 2022/2023 which stipulate the application of EMI in scientific field like the mathematics major and as English has assumed the most significant trends in higher education nowadays in non- anglophone countries.

To achieve this aim, the present resource adopted a combination of qualitative & quantitative methods. The former was conducted with six teachers of mathematics in Algebra, geometry and logarithms; the most important modules in mathematics field in order to identify their attitude and perception towards using EMI. Then a questionnaire was administered to 35 f- y-m-s to investigate their perception about the possible use of EMI in the teaching & learning process in their field.

The first theoretical part of this dissertation tried to explore the problems raised by the application of this instruction at students' level, so, researchers shed light on the various challenges & difficulties that students face in receiving lessons in E L, also in the theoretical part we focused on the most important difficulty that teachers face, which is choosing the appropriate methodology & the appropriate approach as a framework, is it ESP methodology? EMI methodology? Or CLIL-ised EMI methodology? That is why we discussed the definition of each on separately, their methodologies and we added what condition must be met by the M-tea to apply EMI with complete success, which means the M-tea's features required (teacher quality)

The second part or chapter two provides a detailed analysis and interpretation of the results obtained from the students' questionnaire & teachers

GENERAL CONCLUSION

interview, it also Clarified some limitations of the current study, population and samples who were interviewed and the methodology followed in the research.

Based on the results discussed in the 1st and 2nd chapter, the research questions can be answered, the first question is concerned with teachers' & students' perceptions toward using EMI, the results obtained showed that the majority of student welcomed the idea and in the sometime they face some difficulties & some obstacles as a result of their poor linguistic proficiency, and they do not benefit from The lessons allocated by the responsible bodies and also their inability to combine the difficulty of the subjects with language acquisition in the sometime.

The second question was set to explore and define the methodology that can be used by M-tea for the lesson's success and according to the obtained data it is noticed that teachers are still in the initial application of this instruction, and every teacher is free to choose the methodology that guarantees him the smoothness of lessons process relying partly on E1E2 modules and they do not follow a specific methodology .

The third question was related to the characteristics and qualifications that must be possessed by a mathematics professor who teaches in English by giving a general overview of the characteristics of other approaches' teachers and the interactional device they use.

approach must he results gathered from teachers interview and students' questionnaire, it can be realized that both of them are aware of the current situation and they are trying to overcome the difficulties step by step and with the continuous use of EMI and they hope that the application of CLIL will be better in the early stage of education in the middle & secondary levels while EMI approach must applied in higher education.

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Appendices

Appendices

First year mathematics student's questionnaire

Dear student,

you are kindly requested to complete the following questionnaire . your answers are very important to achieve an academic research.

Please Tick the appropriate answer:

1-Specify your gender

male

female

2. Age :

18-19

20-22

23-26

26-32

3. How do you find University education?

3- كيف تجدون الدراسة في الجامعة ؟

difficult

average

easy

صعبة

متوسطة

سهلة

4. Do you enjoy all the lessons delivered in English language ?

4- هل تستمتع بالدروس المقدمة باللغة الإنجليزية ؟

yes

no

نعم

لا

5- Are all subjects (modules) taught in English?

5- هل يتم تدريس كل المواد باللغة الإنجليزية ؟

yes

no

If yes what are these modules?

- إذا كان نعم ماهي هذه المواد.

.....

6. Does the English modules E1 E2 serve other modules ?

6- هل مقياس تدريس الانجليزية يخدم المواد الأخرى ؟

yes

no

Appendices

* If No, why ?

- lack of vocabularies

نقص المفردات (الرصيد اللغوي)

The use of complexe word

استعمال مفردات معقدة

lack of Crammare Knowledge

عدم القدرة على فهم قواعد اللغة الإنجليزية

fack of interest

قلة إهتمام

7- Understanding the lessons is better if the teacher use

6- فهم الدروس يكون أفضل إذا استعمل الأستاذ

Mother tongue

اللغة الأم

English

الإنجليزية

Both languages

اللغتين معا

8-what are the mothods used by the teachers ?

8- ما هي الطريقة المستعملة من طرف الاستاذ ؟

9. your understanding of the question asked in the Excam is

9 -فهمك للأسئلة المطروحة في الامتحان باللغة الانجليزية هو

Excellent

ممتاز

good

جيد

average

متوسط

low

ضعيف

10. How many times do you need the teachers explanation in the exam ?

10- كم من مرة تحتاجون لشرح الاستاذ في الامتحان ؟

always

دائما

often

غالبا

never

لاحتاج

11- DO English medium instruction help you to imperove your English language abilities?

11- هل ادراج الإنجليزية كلغة تدريس ساعد في تحسين قدراتك اللغوية ؟

Appendices

Yes

NO

12- Did you benefit from Online session of the baccalaureate Weners

12- هل استفدت من الدروس المقدمة على المنصات الرقمية لتحسين اللغة الانجليزية لناجحي البكلوريا الجدد

yes

no

Thank you for your cooperation

Appendices

Dear teacher, Mathematic teacher intervien.

you are Kindly requested to complete the following interver designed for an academic work, your response is very important .

Please tick the appropriate answer

1. Specify your gender

Male

female

2. years of experience.

سنوات الخبرة

3. Qualification

Master

ph.D

المؤهل العلمي

ماجستير

دكتوراه

- Oher qualifications:.....

- مؤهلات اخرى

4. what do you think of the new instruction that stipulates teaching mathematics in English?

4- ما رأيكم في التعليم الجديدة التي تنص على تدريس الرياضيات باللغة الإنجليزية ؟

.....
.....

5. Do you have prior English language Knowledge that qualifies you to teach mathematics in English?

5- هل لديكم رصيد لغوي مسبق في اللغة الإنجليزية يؤهلكم لتدريس الرياضيات باللغة الإنجليزية ؟

.....
.....

6. what advenced preparations has the menistry made to adopt English as a medium of instruction for the coming years .

6- ماهي التحضيرات المسبقة التي قامت بها الوزارة لإعتماد الانجليزية لغة تدريس للسنوات القادمة

.....
.....

.....
.....

Appendices

7. How could you balance teaching mathematics and learning English at the same time ?

7-كيف يمكنكم التدريس والتعلم في نفس الوقت ؟

.....
.....

8. what difficulties do. you face in Teaching Mathematics in English ?

8-بصفة عامة ما هي الصعوبات التي تواجهونها في التدريس باللغة الانجليزية ؟

.....
.....

9. How do you do to evaluate the studentes after this instraction?

9- كيف تقيمون الطالب بعد اعتماد الانجليزية لغة تدريس ؟

.....
.....

10. It is known in advance that a large percentage of mathematics up to 90% repeat the year on change the section due to its difficulty . What then comes after inclusion of English as the language of instruction ?

10- المعروف مسبقا ان نسبة كبيرة من طلبة شعبة الرياضيات تصل حتى 90%

يعيدون السنة أو يغيرون الشعبة نظرا لصعوبتها ماذا اعتماد اللغة الانجليزية لغة تدريس , مارأيكم في هذا؟

.....
.....

Appendices

الجمهورية الجزائرية الديمقراطية الشعبية

République Algérienne Démocratique Et Populaire

Ministère de l'Enseignement Supérieur
Et de la Recherche Scientifique

Conférence Régionale des Universités
du Centre



الجزائر 1 - 1 Alger

وزارة التعليم العالي و البحث العلمي

الندوة الجهوية لجامعات الوسط

الجزائر في: 07 ديسمبر 2023

تعليمية

تبعاً لتوجيهات الوزارة الوصية المتعلقة باعتماد التدريس باللغة الانجليزية في مستوى سنة أولى ليسانس - الجذع المشترك - وتبعاً لمخرجات اجتماع الندوة الجهوية لجامعات الوسط المنعقد بتاريخ 03 ديسمبر 2023، فإن رئيس الندوة الجهوية يطلب منكم إهداء التوجيهات اللازمة والوقوف على أن تكون المواد المدرسة في ميدان العلوم والتكنولوجيا - محاضرات، أعمال موجهة، أعمال تطبيقية-، وكذلك كتابة الدروس وسلاسل التمارين والامتحانات على وجه الخصوص تكون باللغة الانجليزية حصراً.

نولي أهمية كبيرة لتنفيذ ومتابعة هذه التعليمية.

أمانة الندوة الجهوية لجامعات الوسط

