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TITLE

Exploring Teachers' Perspectives on Leveraging Artificial Intelligence for Effective English-Medium Instruction (EMI) Implementation in Higher Education: Case of BBA University, Algeria

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Dedication I

To my parents and all my family.

The completion of this study could not have been possible without the expertise of Dr Iman Tiaiba, our beloved thesis adviser. We would like to express our sincere gratitude for her generosity, insightful advice, and professional guidance.

Thank you for bringing yourselves into my life. My friends for the great encounter they have made.

To all my teachers

This work is dedicated to you

WAIL

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I dedicate this work to my incredible family.

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Abstract

This study explores university teachers' perspectives on leveraging Artificial Intelligence for effective English-medium instruction implementation in higher education In Algeria, at BBA University. As part of efforts to improve and globalize education in Algeria, EMI continues to grow more and more. However, many teachers face challenges in implementing it. At the same time, AI tools like ChatGPT, Grammarly, and other intelligent systems are rapidly transforming higher education by helping with things like planning lessons, learning languages, making content, and testing. But a little is known about how EMI teachers in Algeria understand and use these tools in real life. An exploratory qualitative case study approach based on the interpretivist paradigm is used in this study to fill this gap. a semi-structured questionnaire filled out by 25 EMI teachers from different faculties and a semi-structured interview with one participant were used to collect data. The data was analysed using thematic analysis. Key findings show that many instructors have noticed how AI could improve EMI, but they are also worried about their lack of digital skills, training, and ethical concerns. Participants highlighted the importance of professional development, institutional investment, and strategies that are suitable for the situation to support the use of AI in EMI implementation. This study contributes to the field of Teaching English as a Foreign Language (TEFL) by shedding light on the role of AI in facilitating language and content instruction in non-English speaking contexts. It also gives strategy and training suggestions for improving EMI practices in Algerian universities more effective and permanent.

Keywords*:* Artificial intelligence, English-medium instruction, TEFL (Teaching English as foreign language), Higher Education, AI tools in Education.

LIST OF ABBREVIATIONS AND ACRONYMES

- **AI**: Artificial Intelligence
- **AWE**: Automated Writing Evaluation
- **CLIL**: Content and Language Integrated Learning
- **EMI**: English Medium Instruction
- **EFL**: English as a Foreign Language
- **ELT**: English Language Teaching
- **HEIs**: Higher Education Institutions
- **ITS**: Intelligent Tutoring System
- **L1**: First Language (Native Language)
- **L2**: Second Language
- **ML**: Machine Learning
- **MT**: Machine Translation
- **NLP**: Natural Language Processing
- **PL**: Personalized Learning
- **STEM**: Science, Technology, Engineering, and Mathematics

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General Introduction

1. Background of the Study

English-Medium Instruction (EMI) has become more popular in recent years in higher education institutions in countries where English is not the first language, like Algeria. If English is used as the language of teaching for subjects other than English Itself, this is called EMI. Higher education in Algeria is moving faster to use English as an instructional language (EMI). This is because of globalization and the need to meet foreign academic standards, but for EMI to work, it needs to be carefully planned, consider political and social issues, and meet the needs of both students and faculty (Amara, 2025). Literature suggests that EMI is when English is used to teach school subjects in places where English is not the first language (Macaro et al., 2017). However, AI is quickly changing the way people all over the world learn at the same time. Personalized learning is advanced with the help of ChatGPT, adaptive learning platforms, and other AI tools. And these tools get students more involved by making it easy for them to make their items. Teachers who don't speak English as their first language may find it hard to do things like plan lessons, help students with language, give resources, and test students. AI could help with these tasks. Even though AI has a lot of promises, not much is known about how EMI instructors think about it, use it, or incorporate it. This is especially true in Algerian universities, where digital transformation is still in its early stages. Recent studies look at how Artificial Intelligence (AI) tools can be used in English Medium Instruction (EMI) and language learning classes. AI tools like ChatGPT, Grammarly, and Elsa are used to learn languages in many ways, such as to improve writing, talk more, and translate (Deni Yatri et al., 2023). Recent studies look at how teachers feel about AI in EMI and TEFL settings, showing both advantages and disadvantages. Pre-service EFL teachers think AI will save them time and be more useful, but they are worried that it will put people out of work and make them less critical thinkers (Taşçı & Tunaz, 2024).

2. Statement of the Problem

While recent studies have explored teacher attitudes towards AI in broader TEFL/EMI contexts, there is a distinct lack of localized research that explores the specific challenges and opportunities perceived by Algerian EMI teachers regarding AI integration. Therefore, this study aims to explore higher education teachers at different faculties how they perceive, utilize, and integrate these AI tools into their teaching practices. Furthermore, the specific benefits, challenges, and the nature of institutional support required for effective AI integration within this unique educational context remain largely unexplored. This lack of

understanding creates a critical gap that may inform improve EMI practices in the Algeria context. And how Artificial Intelligence (AI) and English-Medium Instruction (EMI) work together.

3. Research Questions

This study seeks to answer the following research questions:

- What are Algerian university teachers' perceptions of Artificial Intelligence (AI) integration in English-Medium Instruction (EMI), and how do they currently utilize AI tools in their EMI teaching practices?
- What are the perceived benefits and challenges of integrating AI into EMI, and what institutional support are needed?

4. Objectives of the Study

This study is divided into primary and secondary objectives:

- Primary objective: Understand Algerian university teachers' experiences and perspectives on the integration of Artificial Intelligence (AI) in English-Medium Instruction (EMI), specifically exploring their current utilization of AI tools, and identifying the perceived benefits and challenges associated with their use.
- Secondary objective: make pedagogical recommendations for enhancing AI-supported EMI practices in Algerian higher education.

5. Significance of The Study

This study is important because it fills a key gap in our understanding of how Artificial Intelligence (AI) and English-Medium Instruction (EMI) work together.

In terms of theory, it gives us real information (data) about how teachers in non-English speaking universities, especially in Algeria, see and use AI. This helps us better understand the ideas behind using technology to teach language and other subjects.

In terms of practical use, this research offers recommendation to help create specific training programs for teachers and guide universities in Algeria on how to best use AI to make EMI stronger and more effective.

6. Overview of Methodology

The study uses a qualitative method and an exploratory purpose to seek out what university teachers at BBA University, Algeria, think about using Artificial Intelligence (AI) in English-Medium Instruction (EMI). Following the interpretivist paradigm, which emphasizes understanding human events from the participants' points of view. Case studies were used to give a more in-depth look at the subject in the context of a certain organization. A semi-structured questionnaire was sent to different faculties with 25 answers received, and one semi-structured interview was conducted with a participant chosen purposefully. The purpose of these tools was to get detailed answers about how AI is used, its advantages and disadvantages, and its future in EMI training. The data collected were analysed using thematic with open-ended questions and statical with closed questionnaire items, which revealed important trends and themes in the participants' answers. During the whole study process, ethical issues like informed consent, privacy, and open participation were closely watched. This methodological framework made it possible to investigate the study problem in depth while also making sure that the results could be trusted.

7. Definitions of key Terms

- **English-Medium Instruction (EMI):** English-Medium Instruction, or EMI, is when academic subjects are taught in English in places where English is not the main language, usually at the college level.
- **Artificial Intelligence (AI):** Artificial intelligence (AI) is an aspect of computer science that is changing quickly. Its goal is to make smart machines that can do things that normally require human intelligence.
- **EMI Instructors:** English-medium instruction (EMI) teachers are those who teach classes in English, typically in places where people don't understand English as their first language.
- **Perception:** Perception is a basic mental process that involves putting together, recognizing, and making sense of sensory information to understand the world around us.
- **Integration:** Integration is a complicated idea that has more than one meaning in different areas.
- **TEFL (Teaching English as a Foreign Language):** Teaching English as a Foreign Language, or TEFL, is a general approach to teaching people who don't speak English

as their first language in places where English isn't the main language. It includes different methods and techniques that are supposed to help students improve their language skills.

8. Organization of the Dissertation

The current dissertation will consist of a general introduction, three chapters, and a general conclusion. The general introduction includes background information about the study, a statement of the problem, research questions, the study's goals, and its importance.

The first chapter contains the theoretical part of this research; it deals with three sections. The first section focuses on English-Medium Instruction (EMI) in higher education and defines it from both a global and a local point of view. It discusses the differences between EMI and Content and Language Integrated Learning (CLIL), the benefits of EMI, and the problems that come up when it's tried to be used, especially in Algeria, where there are language barriers and insufficient training. The second part explores Artificial Intelligence (AI) in higher education. It gives an outline of AI technologies like machine learning and natural language processing and explains how AI is different from regular digital tools. It also looks at how AI can be used to learn languages, deliver information, and expand its use in STEM and humanities fields. The third section looks at how AI is used in EMI lesson planning, focusing on how AI tools such as ChatGPT, Grammarly, and Canva can help with planning lessons, making material, keeping students interested, and helping them with their language needs. Even though AI can improve EMI, there hasn't been much research done in Algeria on how teachers use these tools. This study aims to fill that gap.

The main part of the dissertation is the second chapter, which talks about the research methodology, including the research approach, paradigm, and design. It also talks about the practical aspects of the study. In addition, the places where the study was conducted. This chapter also talks about research questions, population and sampling, and why it was chosen. It also talks about all the tools and methods that were used in the study. Along with the data gathering and analysis, the study's limitations, boundaries, and ethical concerns are also talked about.

Chapter three presents and explains the data gathered from the teachers' questionnaires and interview. The data will be presented by employing the qualitative method, and the results will be compared to another research that has already been done. This part will give some suggestions for more study and finally concluded.

The dissertation ends with a formal answer to the main research questions and a broad summary of the study, including a review of the methods and results.

Chapter One
Literature Review

Introduction

Due to the objective of this study is to find out how teachers feel about using AI to make English-Medium Instruction (EMI) more effective in higher education, this part looks at what has already been written on the subject. The initial part looks at the idea of EMI in both global and regional contexts, comparing it to Content and Language Integrated Learning (CLIL), and looking at its pros, cons, and implementation in Algeria, including how policies are made and how stakeholders feel about it. Second, it talks about AI in higher education, going through several of the most important technologies (like machine learning and natural language processing) and how they are used in various fields. It focuses on how AI can change language learning, content delivery, and research compared to standard digital tools. Lastly, it investigates how AI could be used in EMI. It does this by looking at tools for lesson planning (like ChatGPT and Eduaide.AI), content creation (like Canva and Tome AI), student engagement (like Kahoot and Nearpod), and language support (like Grammarly and Otter.ai), as well as real-life studies from Algeria or similar places. By combining these themes, the review finds gaps, opens new possibilities, and shows how AI is changing to improve EMI practices.

SECTION ONE: English-Medium Instruction (EMI) in Higher Education

1.1.1. What is English medium of instruction (EMI)?

In the late 1990s, the term "EMI" became popular due to the influence of the Bologna Process on European tertiary education. The goal of the Bologna Process is to improve academic mobility and employability by standardizing higher education across Europe (European Higher Education Area and Bologna Process, 2016). English-medium instruction became crucial for many European universities due to English's status as a global lingua franca and transnational research language (Coleman, 2006). These programs have experienced remarkable growth. Between 2001 and 2014, for example, the number of bachelor's and master's degrees offered in Europe that are taught entirely in English rose from 725 to 8,089, a more than tenfold increase (Wächter and Maiworm, 2014). The desire to internationalize and Bologna have both contributed to the rapid expansion of English-medium programs at universities across the globe (Dearden, 2015).

The use of English to teach academic subjects in nations or areas where most of the population does not speak English as their first language (L1) is known as English as a

Medium of Instruction (EMI) (Dearden, 2014, p. 4), has been the subject of substantial study in the last few years. To increase institutional prestige, prepare domestic students for the global labour market, and draw in international students, European universities have implemented English-taught curricula (Aintzane Doiz et al. 2011). For example, EMI is used for more than 25% of master's degree programs in Denmark. Nonetheless, some instructors voice concerns regarding their level of English proficiency, which might not always satisfy the requirements of teaching in the language (Werther et al. 2014).

Education researchers have studied and conceptualized English as a Medium of Instruction (EMI) in detail. EMI is defined by (Macaro, 2018) as the preponderance of the use of English to convey academic content in educational settings where English is not the students' first language. Universities throughout Asia, including China, Taiwan, Korea, Vietnam, Indonesia, and Malaysia, use English as a lingua franca and as a global language (Wysocka, 2013). Adoption is intended to increase domestic and international competitiveness in innovation and knowledge creation while granting complete access to the most recent developments in knowledge (Hu, 2009, as cited in Chapple, 2015).

Lastly, EMI is defined by as the use of English for teaching in contexts where English is not the primary language of everyday social communication (Jenkins, 2014). The application of EMI in educational settings where English is not widely used as a lingua franca is highlighted by this conceptualization. According to the definition, these kinds of educational settings usually take place in areas where English is not widely used outside of the academic sphere or dominant in larger societal functions. Since the language may not be the primary means of communication for teachers or students outside of the classroom, the teaching-learning dynamic may need to adjust to linguistic difficulties.

At this stage, it is critical to consider what "English Medium Instruction" (EMI) means. Researchers have observed that EMI is still not well defined and does not have a consensus definition (Airey, 2016). "We do not yet know what EMI is" (Rigg, 2013), according to Ernesto Macaro, Director of EMI Oxford's Centre for Research and Development on EMI, who also emphasized that the definition of EMI is still evolving (British Council, 2013).

After talking about what EMI is and why it's important, the next part will look at how it relates to Content and Language Integrated Learning (CLIL), which is another well-known way to teach bilingual students.

1.1.2. Content and Language Integrated Learning (CLIL)

The teaching methodology known as CLIL originated in Europe in the middle of the 1990s. Proposals for teaching secondary school subjects in L2 EU member languages were made, and European Commission language policies promoted the idea that EU citizens should be proficient in L+2, or their native tongue plus two additional EU member languages (Llinares, Morton, and Whittaker, 2012). Simultaneously, David Marsh in Finland created the term CLIL to refer to a teaching methodology that was then developing in Europe and was partially inspired by bilingual education initiatives in Canada and Britain (Marsh, 2008). With examples of CLIL for English found in higher education in numerous EFL contexts, CLIL is currently extending far beyond its roots in European secondary schools (e.g. G. CLIL for other languages, such as those spoken in Australia (Turner, 2013) and (Wei, 2013).

CLIL is an approach that combines content instruction with the teaching of a second or foreign language (L2). Its objectives are to give students a genuine language learning experience, help them become proficient in subject areas, and enhance their language abilities by using the target language in content-based activities (Coyle et al. 2020).

According to Marsh (2008), CLIL is an educational approach that is "essentially methodological." is described as a dual-focused method where "teaching and learning of both language and content is done in an additional language" (Marsh, 2008, p. (234).

Language and non-language content are positioned on a continuum by CLIL, which does not suggest a preference for either (Marsh, 2002, p. 58) where both play a shared role in the curriculum. The 4Cs Framework, which integrates "content (subject matter), communication (language learning and use), cognition (learning and thinking processes), and culture (developing intercultural understanding and global citizenship)" in real-world settings, is what makes CLIL so alluring (Coyle et al. 2010; p. 41).

1.1.3. Differences between EMI and CLIL

Teachers have more freedom to balance language learning and content using the CLIL approach. For example, the CLIL, which is commonly utilized by bilingual educators, emphasizes language acquisition. Conversely, when the lesson's content is the primary focus of instruction and learning, this is known as content-based learning (Rojas, 2021). The dual learning objectives of the language-based CLIL and the content-based CLIL set them apart from other pedagogical approaches to L2 learning. The EMI is a method that uses English as

the primary language of instruction for academic subjects. English is commonly used in educational settings where it is not the primary language to provide students with an immersion experience and prepare them for coursework in the future or for work in an English-speaking workplace (Mastellotto and Zanin, 2021).

Language learning is viewed by EMI as a secondary, unintended benefit, with a focus on content delivery (Macaro et al. 2018). Instead of heavily depending on explicit language support, this method places an emphasis on content and assumes that learners will increase their language proficiency through immersion on their own. The dual objectives of content and language learning in CLIL are different from the single objective of content learning in EMI. A balanced approach that prioritizes both subject-specific knowledge and language competency is achieved by CLIL, which consciously blends language learning and content instruction (Coyle et al. 2010).

Teachers in EMI courses typically have extensive domain knowledge and a high level of English proficiency. They might, however, be untrained in professional language-teaching techniques (Dearden, 2014). CLIL, on the other hand, utilizes a variety of instructional strategies, including scaffolding, task-based learning, and formative assessment, to support students in expanding their language and knowledge bases. To effectively teach language, teachers participating in CLIL must have a thorough understanding of the subject matter (Coyle et al. 2010).

Now that the differences between EMI and CLIL are clear, the conversation can move on to the advantages and challenges of EMI, which are important for judging how well it works in different institutions situations.

1.1.4. Benefits and Challenges of EMI

This part lists the ways that EMI and CLIL are related and different, focusing on their unique aims, teaching methods, and teacher requirements. EMI focuses on delivering material in English, but CLIL makes it clearer how language learning and content learning are connected.

1.1.4.1. Benefits of English Medium Instruction

Globally, EMI is becoming more and more popular in educational systems. For students for whom English is a second or foreign language, it entails teaching academic

subjects other than English itself in English (Dafouz et Gray, 2022). EMI proponents point out several possible advantages.

- Increasing students' L2-English proficiency is one of the many alleged advantages that support the decision of more and more HEIs to offer EMI programs; however, this is true even though EMI definitions do not list L2 skill development as an objective (Galloway et al. 2020).
- According to Rose and Galloway (2019, p.195), both practitioners and students have the "expectation that English language proficiency will develop in tandem with subject discipline knowledge.".
- The EMI programme can prepare students to take part in a globalised academic environment. An English-speaking audience has access to international research and learning resources, fostering intercultural understanding and potentially attracting foreign students (British Council, 2014).
- According to Leask in de Diezmas and Barrera (2021), EMI has several advantages, including drawing in international students, boosting the employability of graduates, growing global research networks and the university's standing internationally, enhancing foreign language competency, and fostering the development of intercultural competencies.
- Research by Macaro (2018) indicates that EMI programs may have cognitive advantages that go beyond language acquisition. Research has demonstrated beneficial effects on critical thinking and problem-solving abilities.
- Bilingualism can be encouraged by well-designed EMI programs that support students in maintaining and improving their native tongue in addition to English. This may result in improved overall academic achievement, according to research (Bälter et al. 2023).
- Institutions can attract international students through English Medium Instruction (Richards and Pun. 2021)

1.1.4.2. Challenges of English Medium Instruction

In addition to advantages, the EMI program also presents challenges for both students and educators.

- Both teachers and students struggle with inadequate English skills, particularly oral communication. This impedes lesson comprehension and classroom participation (Richards & Pun, 2022).
- Content teachers lack training in EMI pedagogy, disciplinary literacy in English, and strategies to integrate language objectives into subject teaching (Galloway et Rose, 2021).
- The research identified four challenges encountered by lecturers in EMI classes: language proficiency of the lecturers, language proficiency and learning styles of students, pedagogical concerns, and resource availability (Vu et Burns 2014).
- The implementation of EMI programs necessitates sufficient resources and funding (Oktaviani 2019).
- Evans and Morrison (2011) identified that EMI students in China faced challenges with lecture comprehension and participation, primarily due to unfamiliar technical vocabulary, and showed a preference for Cantonese to enhance engagement and understanding.

To put these global views into a local context, the next part looks at how EMI is being used in Algeria, focusing on policy, institutional readiness, and how users see it.

1.1.5. EMI in the Algerian Context

This section looks at Algeria's established push for EMI and compares it to real challenges like opposition from teachers, different languages, and gaps in infrastructure. The conversation brings up the gap between policy objectives and what's happening.

1.1.5.1. Policy Perspectives on EMI in Algeria

Algeria has a long and complex linguistic past, characterized by multilingualism and dialects (Bouagada, 2016; Sahrawi, 2020). The mother tongue is Algerian Arabic, and the national languages are Standard Arabic, Algerian Arabic, and French, while the official languages taught in Algeria are Modern Standard Arabic and Tamazight, as well as some other languages, such as French, Spanish and Italian (Sahraoui, 2020).

English as a Medium of Instruction (EMI) is becoming increasingly popular in Algeria, especially in scientific and technical fields, according to recent policy initiatives by the country's Ministry of Higher Education. Aligning Algerian higher education with international standards and claiming linguistic independence from French are the goals of this move, which will formally begin in 2023 (Khenioui et Boulkroun, 2023). The switch to EMI is framed as a component of a larger Anglicization strategy that aims to internationalize universities, increase research visibility, and boost global competitiveness (Amara, 2025).

The viability of the implementation has been questioned due to this top-down policy change. Disparities in EMI adoption among institutions arise due to the absence of clear policies in many universities, often resulting in decisions being delegated to individual departments (Amara, 2025). Furthermore, a discrepancy exists between policy objectives and real-world conditions due to insufficient collaboration between educators and policymakers (Khenioui et Boulkroun, 2023).

1.1.5.2. Challenges of EMI Implementation

One of the most significant problems is that both teachers and students do not speak English well enough. Many faculty members lack the linguistic and pedagogical skills necessary to teach English effectively because they received their training in French (Ouarniki, 2023; Amara, 2025). This language barrier can make it difficult to understand and deliver the material, which frequently forces teachers to use translation or code-switching.

Pedagogical and Institutional Restrictions: Professional development courses that are specific to EMI, like instruction in content and language integrated learning (CLIL), are scarce. Without adequate assistance, teachers frequently feel overburdened by the additional duty of teaching both language and subject matter (Ouarniki, 2023). Effective EMI implementation is further complicated by the lack of cohesive curriculum models and restricted access to English-language teaching resources (Khenioui and Boulkroun, 2023).

The policy-practice gap is evident in Algeria, where, despite government endorsement of English Medium Instruction (EMI), numerous universities function without robust institutional strategies or evaluation frameworks. This discrepancy compromises the consistency and quality of EMI instruction (Amara, 2025).

1.1.5.3. Teachers' Perceptions of EMI

In Algeria, teachers have differing opinions about EMI. Many people are concerned about EMI's abrupt imposition without sufficient planning, even though some see it as an

essential step for academic advancement and internationalization (Ouarniki, 2023). When forced to teach in a language other than their native tongue, teachers express feelings of anxiety, inadequacy, and increased workload (Khenioui and Boulkroun, 2023). The decline of national identity and the exclusion of Arabic and French from academia are other issues brought up (Amara, 2025).

1.1.5.4. Students' Perceptions of EMI

In a similar vein, students view EMI as a complex phenomenon with both advantages and disadvantages. On one hand, this presents a significant opportunity to enhance English proficiency and engage with global academic content. Conversely, numerous students face challenges in comprehending lectures and engaging with academic texts in English, which may impede their learning outcomes (Ouarniki, 2023). Recent studies indicate that students with limited English proficiency frequently experience diminished participation, heightened cognitive load, and decreased academic performance (Khenioui & Boulkroun, 2023).

Considering EMI's problems, the study then turns into Artificial Intelligence (AI) as a possible way to improve EMI delivery, which brings up the next main theme.

SECTION TWO: Artificial Intelligence in Higher Education

This study looks at how AI could change education by looking at machine learning (ML), natural language processing (NLP), and intelligent tutoring systems (ITS). These technologies provide tools for customized learning, automated testing, and material delivery that change based on what the learner needs.

1.2.1. Overview of AI in Education (machine learning, NLP, ITS)

1.2.1.1. Machine Learning in Education

Machine learning (ML) is transforming education by providing customized learning experiences and improving educational technology (Yadav et al., 2019). ML algorithms examine student data to identify personalized learning patterns and provide content delivery and dynamic learning paths accordingly. The strategy promotes increased student engagement, memory retention, and overall performance (Yadav et al., 2019; Halde, 2016).

Virtual learning environments and intelligent tutoring systems utilize machine learning to generate specific feedback and create an interactive learning environment (Yadav et al.,

2019). ML also aids teachers in extracurricular activities, including utilizing virtual assistants and assessing student progress (Nafea, 2018). The deployment of ML has grown more critical throughout the COVID-19 pandemic period in aiding the transition to virtual learning environments (Gupta & Batra, 2021). Nevertheless, data privacy and equity-related ethical issues must be considered for effective implementation (Yadav et al., 2019).

Machine Learning Applications

Grading students:

Recent studies investigate machine learning methods for automatic student assignment grading. Several algorithms such as Naive Bayes, Decision Trees, Random Forests, and Support Vector Machines have been employed to grade assignments of varying types with focus on accuracy and efficiency (Chen & Xu, 2024). Unsupervised learning-based chatbots have been found to provide encouraging outcomes in assessing brief written responses with high concordance with human evaluators (Ndukwe et al., 2019). Short answer assessment has also been researched regarding semantic and graph alignment characteristics, with models like Two-class Averaged Perceptron and Linear Regression being useful (Krithika & Narayanan, 2015). This research contributes to the creation of automatic marking systems, providing potential advantages that include immediate feedback, less bias, and greater efficiency in marking processes in various learning settings.

Improving student retention:

Machine learning methods have been promising in enhancing student retention at the higher education level. Cumulative GPA, total credit hours, and financial matters have been some of the critical factors found to impact retention, according to some research using algorithms like Support Vector Machines (SVM), neural networks, and decision trees to forecast student attrition and determine at-risk students (Trivedi, n.d.; Jia & Mareboyana, 2013; Delen, 2010). Ensemble techniques proved superior to single models (Delen, 2010). Latest research has highlighted the importance of integrating machine learning with sustainability education, responding to issues of switching to e-learning, student mental health, and equitable access to university-level education (Villegas-Ch. et al., 2023). They facilitate instant detection of students in need and responsive support measures. But ethical factors must be prioritized while using such technologies so that

fairness and integrity while deciding on retaining students are maintained (Villegas-Ch. et al., 2023).

Predicting student performance:

According to the quantity of research in scientific databases, machine learning's capacity to forecast student achievement is most likely one of its main advantages. The system may pinpoint a student's areas of weakness and recommend strategies for improvement, such as more practice exams, by "learning" about them. Numerous studies have been conducted recently, suggesting that this is a very popular study trend. Years in this field, as we already stated.

For instance, Anand et al. (2018) used the Recursive Clustering algorithm, a machine learning approach, to divide the students in the programming course into groups according to their performance in the prerequisite courses, co-requisites, and current coursework results. Due to their high failure rate, students in the lower groups will be given consideration.

Another study by Alam et al. (2018) proposed a novel strategy to classify students into three groups (high, medium, low) to assess their learning capacity and improve their study methods. They used advanced machine learning techniques to identify key features of students' academic behaviour's, adopting a data-driven approach to categorize them effectively.

Testing students:

Teachers, students, and parents receive continuous feedback from the machine learning-based evaluation regarding how well the student is learning, what kind of support they require, and how far they have come in reaching their learning objectives. The authors of the study, Vaculík et al. (2013) presented a method for teaching pupils how to formulate sound propositional or predicate logic arguments. They employed animations, which were based on carefully chosen demonstrative instances and their detailed solutions, in addition to standard tactics like presentations backed by slides and exercises. They created a questionnaire that documented every step of creating logic proof to assess students' understanding. After creating proof, a student responded to the questionnaire questions. They talked about the questionnaire's design and its benefits and drawbacks. Finally, they used supervised machine learning algorithms in conjunction with frequent subgraph mining to automatically assess the proofs' soundness.

1.2.1.2. Natural Language Processing (NLP) in Education

Natural Language Processing (NLP) has emerged as a powerful tool in education, offering solutions to many challenges in language learning and assessment. Some of the uses of NLP in education include automating language proficiency testing, giving personalized feedback, and enhancing learning experiences overall (Kumar & Howard, 2024).

According to Alhawiti (2014), It aids in incorporating natural language learning into educational frameworks, assisting teachers, students, and educators with writing, analysis, and evaluation processes

NLP is extensively utilized in educational settings, such as research, e-learning, and assessment systems, leading to beneficial results in schools, higher education, and universities (Singh & Kumar, 2020).

Natural language processing applications

Machine translation, automated text summarization, question answering, and other fields can all benefit from the use of natural language processing. We then go over a few of the topics and the pertinent research that has been done in those areas.

Machine translation

Machine translation (MT) is a vital natural language processing application that will automatically translate text from one language to another (Andrabi, 2021).

According to (Kaur, 2020). Machine translation (MT) is a field of artificial intelligence and natural language processing that translates text between languages while maintaining meaning. Despite these obstacles, machine translation continues to be a significant field of study in computational linguistics and AI, with persistent endeavours to enhance the precision and fluidity of translated results. The machine translation process generally consists of preprocessing, model development, and applying it to the input text (Rishita et al., 2019).

Text Categorization

Text categorization, an essential function in natural language processing, entails the automatic allocation of pre-established labels to documents, Text classification has various uses, including automated indexing of research papers, patent registration, spam detection, and determining authorship. It provides major benefits by removing the necessity for manual

document arrangement, which may be expensive or impractical for extensive document collections (Sebastiani, 2005)

This method complements deep learning by solving the issues of labelled data, improving the process of classification through a mixture of labelled and unlabelled data (Quazi & Musa, 2023).

Automated text summarization

Automated text summarization, which condenses lengthy texts into understandable, instructive abstracts, is one of the most crucial tasks in natural language processing (NLP). Summarization methods can be classified as extractive, abstract, or hybrid. Each has benefits and drawbacks. (Sameera Datta Myla et al., 2024).

- **Extractive Summarization:** This method selects key phrases from the original text to create a summary. Despite its effectiveness, it might overlook nuanced meanings (Myla et al., 2024; Sundar et al., 2023).
- **Abstractive Summarization:** This technique generates new sentences that convey the main ideas using advanced models such as BERT and GPT-3. However, it frequently has problems with faithfulness to the original content and consistency (Myla et al., 2024) (N et al., 2021).
- **Hybrid method:** Combining extractive and abstractive strategies, seek to capitalize on each approach's advantages but can be challenging to execute (Myla et al., 2024).

Dialogue system

Interactive computer programs designed to have conversations with people using natural language are called dialogue systems. These systems, which can range from simple chatterbots to complex AI-driven interfaces, can be categorized as either tool-like or anthropomorphic depending on their interaction model (Baldridge, 2020).

Dialogue systems are increasingly being used in computer-assisted language learning (CALL) because they provide interactive environments that enhance the cognitive and affective engagement of language learners (Bibauw et al., 2022).

Researchers are concentrating on task-oriented and open-domain applications, and recent developments in deep learning have greatly enhanced dialogue systems (Ni et al., 2021).

1.2.1.3. Intelligent Tutoring System (ITS)

Intelligent tutoring system (ITS) is a computer-based learning platform that offers students individualized, efficient instruction, support, and feedback (Akyuz, 2020).

An effective intelligent tutoring system (ITS) ought to encompass several essential features, such as student-specific adaptability, learner interactivity, a robust feedback system, a specialized knowledge base, an intelligent tutoring capacity for the effective transmission of educational concepts, a self-paced learning method and efficient monitoring and assessment mechanism. These attributes render ITS a superior educational platform compared to traditional learning methods. Among the advantages for educators in adopting ITS over traditional learning paradigms are the provision of student-customized content and automated grading, which alleviates teachers' workloads, enabling them to focus more on refining instructional strategies (Lin et al., 2023).

Key Features of Intelligent Tutoring Systems

Personalization:

By adapting to each learner's distinct learning style and speed, ITS guarantees that training is efficient and pertinent (Shah, 2024) (Hawari & Oktavia, 2024).

Real-time Feedback:

Students who receive timely responses to their inputs can participate more actively in the learning process (Abinaya et al., 2024) (Gomes, 2024).

Mastery Assessment:

ITS can adjust the activities' degree of difficulty to promote mastery learning by evaluating a student's comprehension (Rahim et al., 2023).

AI is also changing education in a bigger way through AI-driven learning systems, in addition to these specific uses in language and material delivery.

1.2.2. AI-Driven Education

The use of AI in education offers significant opportunities for more personalized learning, higher productivity, and improved accessibility (Widyasari et al., 2024; Lydia et al. 2023; Eden et al., 2024).

1.2.2.1. Challenges of AI-Driven Education

Technological Challenges:

Inequitable Access:

By restricting the advantages of AI to favoured groups, disparities in access to technology can worsen already-existing educational inequities (Widyasari et al., 2024).

Data Privacy Issues:

The collection and use of student data raises significant privacy issues, such as the potential for data breaches and the misuse of private information (Ismail, 2024).

Algorithmic Bias:

According to Widyasari et al. (2024) and Ismail (2024), AI systems may unintentionally reinforce biases seen in training data, which could result in the unfair treatment of student demographics.

Ethical and Policy Challenges:

Regulatory Frameworks:

To assure ethical use, current regulations may not sufficiently handle the complexities brought forth by AI, requiring revisions (Ismail, 2024) (Feng & Li, 2024).

Cultural Resistance:

Shifts in educational culture and perspectives on success and excellence are necessary to embrace AI's transformative potential (Huong, 2024).

Using this as a base, the next parts go into more detail about how AI can be used in language learning and content delivery, which are especially important in EMI settings.

1.2.3. AI Applications in Language Learning, Content Delivery

This part talks about AI's role in learning a language (for example, NLP for giving feedback on writing) and customizing material (for example, adaptive learning platforms). It shows how well it fits with EMI's dual focus on mastering both language and subject.

1.2.3.1. AI in Language Learning:

1.2.3.1.1. Naturel language processing:

Natural language processing, or NLP, is a powerful tool for language learning with many applications and benefits. NLP techniques can enhance a variety of language skills, including speaking, writing, reading, and oral communication (Peng, 2024; Rustan, 2022).

Applications of NLP in Language Learning:

Personalized Learning:

Natural language processing (NLP) technologies enable tailored educational experiences that enhance vocabulary and grammar development by analysing learner data and making the necessary content modifications (Peng, 2024).

Automated Assessment:

Natural language processing (NLP) enables real-time evaluation of language proficiency and instant feedback on writing and speaking assignments, both of which are critical for language learners' development ("Natural Language Processing in Education: Automating Assessment and Feedback for Language Learners", 2024).

Interactive Learning Resources:

Intelligent tutoring systems (ITS) driven by natural language processing (NLP) can provide context-based learning opportunities, such as providing relevant math word problems or assistance with programming concepts (Bode & Satpute, 2024).

1.2.3.1.2. Intelligent tutoring systems:

Intelligent tutoring systems (ITS), which offer customized instruction by adapting to the needs of each learner, are a promising approach for language acquisition (Slavuj et al., 2015; Tafazoli et al., 2019). These systems use artificial intelligence methods like natural language processing and user modelling to produce intelligent and captivating computer-assisted language learning (ICALL) experiences (Tafazoli et al., 2019).

Recent advancements in educational technology, which offer personalized and immersive experiences, have revolutionized language learning. Intelligent tutoring systems (ITS) are essential for creating a more successful and interesting learning environment because they provide one-on-one interaction tailored to each learner's speed and learning style (Alcívar et al., 2024). Furthermore, by dynamically altering information based on real-time feedback, adaptive learning technologies leverage AI to maximize language acquisition (Alcívar et al., 2024; Huang et al., n.d.).

More effectively than customization, immersion learning environments enhance language instruction. Technologies such as augmented and virtual reality (AR/VR) allow students to practice their skills in context-specific settings by mimicking real-life situations, which improves retention and practical application. Another way that gamification boosts motivation and engagement while making language acquisition enjoyable is by incorporating game-like elements (Alcívar et al., 2024). Together, these advancements result in a more successful, adaptable, and engaging approach to language learning.

1.2.3.1.3. Automated writing evaluation

Automated writing evaluation (AWE) systems have shown promise in enhancing English language learners' writing skills. AWE has been shown to improve writing accuracy, learner autonomy, and rhetorical quality (Wang et al., 2013; Cotos, 2011). The effectiveness of AWE varies depending on the input type; color-coded feedback appears to have the greatest potential to support language acquisition (Cotos, 2011; Chapelle et al., 2010).

The potential for improving writing quality, particularly for students with lower skill levels, has been demonstrated by Automated Writing Evaluation (AWE) tools. Studies that use pre- and post-test evaluations demonstrate measurable gains in writing skills, underscoring the usefulness of these tools in supporting learners. Additionally, student evaluations show that AWE systems are well-liked, which validates their role in encouraging the development of writing skills (Novalita & Tungka, 2024).

However, even though AWE instruments offer valuable insights, their limitations necessitate an additional approach. Research suggests that combining automated feedback with human instruction yields the best learning outcomes because teachers can address nuances that AWE systems might overlook (Khasawneh, 2024; Wu & Yu, 2023). Teachers are also crucial for ensuring that students receive a comprehensive and fair feedback system and for effectively integrating AWE tools into the curriculum (Wu & Yu, 2023). Combining the depth of human feedback with the efficacy of AWE gives students a more thorough and successful writing education.

1.2.3.2. AI in Content Delivery

Artificial intelligence (AI) is revolutionizing the delivery of information across a variety of industries with its improved user experience and efficiency. By optimizing resource usage and enabling higher-quality videos at lower rates, artificial intelligence (AI) enhances video compression techniques (Diascorn, 2019).

AI applications In Content Delivery

Content Creation and Automation:

By simplifying the creation of narratives and visual content, AI systems expedite the creative process. Automation solutions allow authors to focus on more creative aspects of content creation by removing repetitive tasks (Erafy, 2023).

Personalized Content Delivery:

AI-powered recommendation engines analyse user preferences and provide tailored content suggestions to boost user satisfaction (Erafy, 2023). By tailoring course materials to each student's needs, artificial intelligence in education produces individualized learning experiences (Labhane et al., 2024).

Adaptive Learning Systems:

Long Short-Term Memory (LSTM) networks and other artificial intelligence (AI)-powered systems dynamically alter content in response to real-time student progress analysis. These systems improve learning efficiency and engagement by ensuring timely and relevant material delivery, particularly in remote learning scenarios (Li et al., 2024).

Even though AI is used in different ways in STEM and humanities areas, they both have one thing in common: AI-driven education has the power to change everything.

1.2.4. AI usage across STEM and humanities disciplines

1.2.4.1. AI in STEM Fields

The integration of artificial intelligence (AI) into STEM education has become a transformative force, despite its many challenges and benefits. In STEM education, there are six different kinds of AI applications that enhance various curriculum components (Xu & Fan, 2022).

AI can also help people become more adept at solving problems and thinking critically. With the help of these resources, students might encounter challenging real-world issues that call for the innovative and analytical use of STEM knowledge. According to Ahmad (2020), these problem-based learning opportunities can better prepare students for the demands of the contemporary workforce, where machine learning and artificial intelligence are becoming more common.

AI has the potential to significantly contribute to the reduction of educational disparities and the promotion of inclusion. Children with a range of learning needs, including those with disabilities, can benefit from customized assistance from AI (Roll and Wylie, 2016). AI-powered solutions, for example, can provide personalized learning resources for dyslexic kids or speech-to-text services for hard-of-hearing students. AI can contribute to the development of a more inclusive learning environment by resolving individual learning challenges.

AI has the potential to increase STEM teachers' effectiveness. By using AI to manage administrative duties like grading and attendance tracking, teachers can concentrate more on instruction and student interaction. According to Luckin and Holmes (2016), AI can help teachers by offering insights into student performance and recommending tailored teaching strategies. The effectiveness and efficiency of the learning environment may be improved when educators and AI work together.

1.2.4.2. AI in Humanities Education

According to recent studies, integrating AI into humanities education can enhance students' critical thinking, creativity, and problem-solving skills (Yu, 2024). According to Yoon (2024), AI humanities education is recommended as a crucial component of liberal arts curricula, with a focus on fostering the ability to critically evaluate AI's role in society.

The integration of AI into humanities education reflects an increasing effort to approach AI as a subject of critical humanistic inquiry rather than merely as a technological tool. This educational perspective allows students to engage with technology through philosophical and introspective lenses, given the broader societal and ethical implications of AI. Courses like Big Data, AI, and Art, which push students to think about the links between AI and creative expression, are examples of this tactic. These courses promote active learning and critical thinking, often by providing students with hands-on experience using generative AI tools (Yoon, 2024).

The increasing use of AI tools to automate some evaluation processes and customize instruction is reshaping traditional pedagogical approaches in the field of literary education. These advancements boost efficiency and adaptability, but they also raise concerns about the potential loss of human creativity and the nuanced interpretation that literature demands (Kasih et al., 2024).

Beyond practical applications, AI in humanities classes encourage deeper philosophical reflection. Concerns such as the future of work, the value of human judgment, and the enduring value of the humanities in a technologically advanced society are becoming more and more central to scholarly discussion. Drawing from philosophical traditions, philosophers such as John Dewey and Confucius emphasize the relevance of the humanities in promoting moral consciousness, personal growth, and democratic values. This is especially important in the age of artificial intelligence (Miao, 2022).

1.2.5. How AI differs from traditional digital tools in education

Artificial intelligence (AI) is revolutionizing education through the provision of personalized learning experiences, higher teaching efficacy, and state-of-the-art resources (Rochelle & Sushith, 2024; Yazdani Motlagh et al., 2023; Triberti et al., 2024; Yerbabuena Torres et al., 2024). This transition is characterized by several noteworthy differences:

1.2.5.1. Personalization:

AI systems are revolutionizing education by tailoring instructional content to each student's individual learning style and pace through data-driven insights. This customized approach contrasts sharply with traditional approaches, which typically rely on standardized teaching methodologies (Rochelle, 2024; Singh et al., 2024). Adaptive learning platforms

enhance this strategy and foster a more responsive and customized learning environment by instantly modifying courses according to student performance (Kumar et al., 2023).

1.2.5.2. Interactivity:

Examples of AI-powered solutions that are transforming static digital learning environments into dynamic, interactive ones include chatbots and interactive eBooks. These technologies actively engage students and promote a greater level of involvement than traditional instructional tools (Kumar et al., 2023; Motlagh et al., 2023). By promoting interaction, these resources aid in the development of critical thinking and problem-solving skills, which are occasionally underappreciated in traditional classroom settings (Kumar et al., 2023).

1.2.5.3. Efficiency and Accessibility:

Artificial intelligence (AI) significantly boosts educational efficiency by automating time-consuming administrative tasks like curriculum development and grading, freeing up teachers to concentrate more on instruction and student support (Singh et al., 2024; Torres et al., 2024). Additionally, by offering students with a variety of needs helpful resources and personalized learning paths—features that traditional methods usually lack—AI-powered platforms improve educational accessibility (Motlagh et al., 2023).

Once AI is useful, the review focuses on how it can be used in EMI lesson planning and teaching.

SECTION THREE: AI in EMI Implementation and Lesson Planning

We look at tools like ChatGPT, Canva, and Grammarly to see how they can help with curriculum design, student involvement, and language support. This shows how flexible they are in meeting EMI's needs.

1.3.1. AI-driven lesson planning (personalized learning, adaptive Learning)

1.3.1.1. Personalized Learning

Personalized learning has existed for hundreds of years in the form of apprenticeship and mentoring. As educational technologies began to mature in the last half of the previous century, personalized learning took the form of intelligent tutoring systems. In this century, big data and learning analytics are poised to transform personalized learning once again.

Learning has been characterized as a stable and persistent change in what a person knows and can do (Spector, 2015).

PL is an approach to teaching that considers each student's particular learning style, needs, inclination, and rate. With this approach, learning will be more efficient, and people will be able to participate more actively and consistently. Despite having a long history, this idea's application has grown, particularly considering technological advancements, and its efficacy has significantly increased (Shemshack and Spector, 2020). PL supports the idea that learning occurs through social interactions and individual experiences, in accordance with constructivist learning theory (Xie et al. 2019).

PL is generally recognized as an instructional model that optimizes the learning pace and teaching approach to meet the unique requirements of each student (Bernacki et al., 2021). This approach allows learning objectives, content, and instructional strategies to change based on the individual needs of each student (Klašnja-Milićević et al. 2011). Personalized learning (PL) is a tailoring of pedagogy, curriculum, environment, and assessment to meet the needs of each learner. It occurs when the pace of learning and the instructional approach is optimized for the needs of each learner (Jon Hladek, 2018).

1.3.1.2. Adaptive Learning

Adaptive learning technologies and artificial intelligence have revolutionised individual learning and contributed to the vision of a sustainable education in the post-COVID era. Adaptive learning can be best described in the broad sense as an intelligent system that uses data analytics and machine learning algorithms to provide personalised learning (Koutsantonis et al., 2022). Unlike traditional one-size-fits-all learning methods, adaptive learning modifies content, pace and delivery of instruction according to the individual learning strengths, weaknesses and learning preferences of the student (Smyrnova-Trybulska et al., 2022).

To create an engaging learning environment where each student feels as though it is tailored to them, educators utilize the power of adaptive learning technology (Kem, 2022). In addition, Adaptive learning technology enhances educators' creativity and capacity to tailor learning experiences for each student, regardless of location or time. Providing an effective learning environment that accommodates the distinct demands of each student becomes exceedingly difficult. The Adaptivity factor is employed to create a learning program that addresses the unique requirements of each learner (Kem, 2022).

1.3.2. Artificial Intelligence in Personalized Learning

AI has changed the way PL works and makes learning more personalised by making classrooms that change based on what each student needs (Bhutoria, 2022; Kabudi et al., 2021). When AI technologies like machine learning (ML), natural language processing (NLP), and information and communication technology (ITS) are used in schools, it's possible to tailor students' learning to their interests, skill levels, and preferred ways of learning (El-Sabagh, 2021; Sajja et al., 2024). The use of AI technologies in the creation of adaptive learning platforms which modify instructional strategies and learning materials based on the unique characteristics of each student is growing. By offering tailored feedback and suggestions, these platforms enhance student engagement and learning outcomes (Kochmar et al. 2022; Sayed et all. 2023). ITS and multi-agent systems use educational data mining to create personalised learning paths for each student and give them thorough profiles of themselves (Lippert et al., 2020). AI-powered platforms can change based on users' skill levels and learning goals, giving them personalized video suggestions and tests of their performance (Pesovski et al. 2024).

Finally With adaptive learning systems, virtual tutors, and immersive learning environments, artificial intelligence in PL is poised to provide ever-more-advanced personalization capabilities (Usak, 2024; Yılmaz, 2024). As PL experiences are developed further using methods like big language models, particularly ChatGPT they are gaining increasing attention (Bayly-Castaneda et al., 2024). Research and development projects need to keep going if we want to use AI in the classroom. That's why this method needs to include important human traits like empathy and understanding of the situation (Katiyar et al, 2024).

1.3.3. Categorization of famous AI tools for Lesson Planning

1.3.3.1. AI for Curriculum and Lesson Design: ChatGPT, Google Gemini, Eduaide.AI.

ChatGPT:

ChatGPT is a conversational AI chatbot that works via text input or voice input. This tool has gained popularity in the education domain among students and educators, who see it as an interesting tool for enhancing learning and teaching experience (Singh Gill et al., 2023). AI can draft an essay. It is a significant tool that helps students improve their critical thinking and analytical skills. In response to the request, it can provide an outline structure of the essay, including the introduction, main points, and conclusion. Additionally, it can generate a long essay based on the provided structure. In the application of learning a language,

ChatGPT can rephrase sentences, call up sentences, improve pronunciation, understand the construction of sentences, and provide real-time translation. It is also capable of advanced functions like enhancing response syllables and sentence structure, which makes it easier and faster to understand or learn a language. Generative AI tools such as ChatGPT can produce written content in response to prompt questions, provide introductory questions and summarise texts, and write passages on any subject (Godwin-Jones, 2024).

Gemini:

Gemini, the most recent multimodal artificial intelligence (AI) tool introduced on December 6, 2023, is a Google DeepMind AI model utilizing Visual Language Model (VLM) technology, directly competing with OpenAI's ChatGPT, GPT-4, and GPT-4 with vision (Coles, 2023; Perera & Lankathilaka, 2023).

Gemini, GenAI's most sophisticated and proficient tool, has an extensive array of capabilities that set it apart in the AI domain. It possesses the most formidable general capabilities across modalities, along with advanced comprehension and reasoning performance in each area (Team et al., 2023).

Eduaide AI:

Eduaide.ai is an AI-powered teaching assistant that assists teachers with lesson planning, instructional design, and educational content creation. It features a resource generator, teaching helper, feedback bot, and AI chat. (Yalcinalp et al., 2024).

Eduaide.Ai offers promising advancements in personalized education, challenges such as equity in access and ethical considerations in AI deployment remain critical issues that need addressing to ensure its effectiveness across diverse educational settings (Tilepbergenovna, 2024).

1.3.3.2. AI for Content Creation & Multimedia: Canva, Piktochart, Prezi

Canva:

One of the several applications of the online design tool Canva is the production of instructional materials (Gehred, 2020; Adila et al. 2023). Both novice and professional users will find it user-friendly due to its numerous templates and modifying functionalities (Gehred, 2020; Adila et al. 2023). The application has been shown to enhance designers' creativity and facilitate the creation of innovative graphic content (Adila et al. 2023). Educational institutions have employed Canva to develop engaging instructional materials, especially for primary level mathematics pupils (Sihombing et al. 2024).

Piktochart:

Piktochart is an intuitive platform for generating visual material, providing both complimentary and premium versions with pre-designed themes (Brigham, 2018). It provides templates, graphics, and tools to help educators create visual representations of information, enhancing communication and consumer understanding in various educational contexts (Niebaum et al., 2015). One of Piktochart's advantages is its easy-to-use design elements, like its editable templates, which even educators without a lot of graphic design experience can use (Salim et al., 2021)

Prezi:

The cloud-based PowerPoint software Prezi has shown promise in school settings. Studies show that students are more interested in Prezi than in traditional ways of giving presentations (Duffy et al., 2015; Mustaffa et al., 2013). Its non-linear structure and zooming features make presentations more interesting and keep students' attention well (Strasser, 2014). Students have said that the mind map-style summary in Prezi is useful (Duffy et al., 2015). Because the software is in the cloud, it gives users more freedom and lets them work together to make presentations (Strasser, 2014).

1.3.3.3. AI for Student Engagement & Assessment: Kahoot, Quizizz, Gradescope.

Kahoot:

Kahoot is a popular game-based educational platform, which has attracted considerable attention in educational circles. This may have a positive effect on learning outcomes, class dynamics, and student engagement (Wang & Tahir, 2020). This will enable teachers to assess students via interactive questionnaires and will make teaching more fun and enjoyable (Wooten et al., 2020). Teachers and students alike praised the simplicity and ease of the platform (Boden & Hart, 2018).

Quizizz:

Quizizz is one of these e-learning web apps. Teachers use it to create online quizzes, which are now commonplace (Basuki and Hidayati, 2019). Quizizz is a competition where students answer questions prepared by teachers. Learners can monitor their progress by repeating online quizzes (Rahayu and Purnawarman, 2019). Teachers create interactive

online quizzes, and students participate actively and interactively through their devices to learn (Zhao, 2019).

Gradescope:

Gradescope is an online assessment system for grading handwritten work that optimizes speed, consistency, and flexibility through a dynamically evolving rubric (Singh et al., 2017). It allows instructors to grade digitally from any location, provide equitable and prompt feedback, and easily adjust point values across all submissions (Atwood & Singh, 2018). The system has been widely adopted, with instructors at 200 institutions grading over 10 million pages, and two-thirds of users reporting at least 30%-time savings compared to traditional grading methods (Singh et al., 2017). Gradescope facilitates improved pedagogy by enabling quick reference to similar mistakes, digital record-keeping, and streamlined ABET outcomes assessment (Atwood & Singh, 2018).

1.3.3.4. AI for Language Support: Grammarly, QuillBot, Microsoft Translator.

Grammarly:

One useful automated writing assessment tool is Grammarly (Parra and Calero, 2019; Qureshi et al. 2020) to evaluate written material. Grammar is a difficult skill that EFL (English as a Foreign Language) students must grasp thoroughly when writing. Users can assess their writing style using this application in terms of sentence fragments, grammar, mechanics, word choice, and more. It also provides a feature for evaluating the similarity index. By encouraging the creation of well-developed compositions, it successfully supports teachers in giving feedback to improve students writing (Khan & Qureshi, 2020; Sikandar et al. 2021).

Quillbot:

QuillBot is a well-known AI-powered paraphrasing and rewriting tool for English-language learners that comes in both free and paid versions. It can be used to enhance the clarity and professionalism of your writing by rephrasing phrases and sentences, identifying and preventing plagiarism, and summarizing lengthy passages (Fitria, 2021).

Microsoft Translator:

Microsoft Translator performs well in translating pronouns but is inconsistent with verb tenses when compared to Google Translate (Zahroh et al., 2023). In the WMT19 news translation task, Microsoft Translator focused on document-level neural machine translation,

employing deep transformer models and data augmentation techniques, which were preferred by evaluators over sentence-level systems (Junczys-Dowmunt, 2019).

The review ends with studies that were done in Algeria. These studies fill in the gaps in existing research and give useful advice based on theories.

1.3.4. Empirical studies on AI in EMI from Algeria

Empirical study is a study that only uses data that can be shown and checked. Different approaches, such as both quantitative and qualitative ones, can be used to gather this evidence. To test certain theories, an empirical study might use experiments or surveys (Darmawati, 2022).

This part brings together research from universities in Algeria that shows wary confidence toward AI along with recommendations for training, infrastructure, and moral frameworks to help with integration.

1.3.4.1. Attitudes Toward AI Adoption

The Algerian academic community is keen to use artificial intelligence (AI) to improve the quality of higher education, citing its potential to simplify administrative tasks, personalise teaching and improve student evaluation (Lamdjad & Bouhella, 2024). A survey of professors at Blida University 2 found many highlighting the role of AI in facilitating student follow-up, while others emphasized its usefulness for the organization of academic conferences (Lamdjad & Bouhella, 2024). Likewise, Achili and Zerrouki (2024) found that teachers across Algerian universities encouraged the integration of AI in their classrooms, mainly for research and teaching purposes.

1.3.4.2. Key Challenges

Systemic obstacles stand in the way of AI's adoption in Algerian higher education. Critical infrastructure deficiencies include universities' lack of technical capacity for successful AI implementation, as noted by many teachers (Achili and Zerrouki, 2024). Furthermore, educators have raised ethical concerns, such as worries that AI might encourage academic dishonesty and stifle creativity (Achili and Zerrouki, 2024). Lamdjad and Bouhella (2024) supported these findings, pointing out that professors emphasized algorithmic bias and data privacy concerns, while others expressed concern about AI's effect on critical thinking.

1.3.4.3. Recommendations for Integration

Algerian universities must prioritize multifaceted strategies to fully utilize AI's potential. According to Lambjad and Bouhella (2024) and Achili & Zerrouki (2024), faculty members strongly supported institutional investment in training programs, regulatory frameworks, and technological infrastructure. According to Lamdjad and Bouhella (2024), "human capital development" and "ethical laws to control AI exploitation" are necessary for successful integration (p. 509). Additionally, Achili and Zerrouki (2024) suggested "phased approaches" for the testing of AI tools and academic integrity policies (p. 551).

SECTION FOUR: Previous Studies

The previous research that related to our study which is exploring teachers' perspectives on leveraging artificial intelligence for effective English-medium instruction implementation in higher education, according to Kikuchi (2024), using AI in EMI classes is linked to enhanced English proficiency and better academic performance. Students and teachers have different ideas about how to use AI. Students like to use AI for daily tasks, but teachers don't use it enough for big changes because they are worried about its reliability and academic honesty. To solve these problems, we need clear rules, training on how to use AI, and new ways to test students that focus on creativity and higher-order thought.

Bannister et al. (2023), According to the study, there aren't many research papers that talk about the influence of Generative AI on EMI Higher Education. GenAI has the potential to have an important impact on education in EMI Higher Education, especially in areas like learning a language, creating content, and grading. Genai research in EMI Higher Education is still in its early stages, but the results are promising and deserve more in-depth study.

According to Jiang (2023), Adding AI intelligent technology to English online learning made a big difference in how well students did, with 78% of the sample showing a contextual interaction effect. The students in the experimental environment were more interested and involved than the students in the control class. The test results of the experimental class went up a lot, with over 65% of the scores being in the 80–100 range.

Alignment with R. Wang (2024), his study which is collecting explores on the benefits of AI in education, such as personalized learning and feedback in real time. The study shows how important it is for teachers to get a lot of training and for institutions to back up AI use in EMI settings. He concludes that AI helps people learn and understand more in EMI settings. For AI to work well, teachers must be trained to use it.

Conclusion

This study looks at English-Medium Instruction (EMI) and Artificial Intelligence (AI), two major trends that are changing higher education. First, it talks about EMI, including how it is defined around the world, how it differs from CLIL, and the difficulties of putting it into practice, focusing on Algeria's policy environment and the experiences of stakeholders. Second, it looks at AI's role in education, including technologies like NLP and machine learning and how they can be used in different fields. The last part investigates how AI tools like ChatGPT, Grammarly, and Kahoot can improve EMI by helping with language support, lesson planning, and content creation. Even though the study is positive, it shows that there aren't enough localized studies, especially in Algeria, on how well AI works in EMI settings. The results show that more real-world research needs to be done on how to train teachers, how to use AI in an ethical way, and how to make repeatable models that work best for delivering EMI through technology. This combination sees AI as a possible way to help EMI solve its problems, but it also calls for more research that is tailored to each situation.

Chapter Two
Research Methodology

Introduction

This chapter justifies the selected research methodology for examining university educators' perspectives and experiences regarding the implementation of AI-driven English as a Medium of Instruction (EMI), based on insights derived from the literature review highlighting the growing influence of Artificial Intelligence (AI) in language education. It delineates the research paradigm, specifies the study design and methodology, elucidates the employed methods, provides the procedures for data collecting and analysis, and addresses the quality metrics and ethical considerations. This methodological framework enables readers to assess the rigor and trustworthiness of the study's findings in the context of BBA University, Algeria.

2.1.Research approaches

According to Patton (2002), qualitative research is an exploration process that aims to understand phenomena in real-life contexts without the researcher changing the phenomenon under study. This study employs a qualitative method. Qualitative researchers emphasize how people understand their experiences and the environment around them by taking a naturalistic approach to their subjects (Denzin and Lincoln, 2005). Specifically, qualitative research represents an interpretive approach to social inquiry that seeks to grasp phenomena by accessing the meanings participants attribute to them.

The qualitative approach was selected for this study because it is most appropriate for investigating the rich, contextual, and subjective experiences of EMI instructors concerning the use of Artificial Intelligence (AI) in their teaching methods. A qualitative approach provides the in-depth, descriptive insights required to uncover these meanings, as the study seeks to understand how educators view, interpret, and comprehend AI tools within their institutional and educational contexts. When working with a relatively new and dynamic field like AI in EMI, qualitative research enables a more thorough examination of individual perspectives than quantitative approaches, which concentrate on numerical patterns and generalizations. Furthermore, it gives the researcher the freedom to modify and go deeper during interviews, which helps them find unanticipated themes and contextual elements that organized surveys could miss.

Therefore, the qualitative method is well-aligned with the interpretivist framework and the exploratory essence of the research.

2.2.Research Paradigm

MacNaughton, Rolfe & Siraj-Blatchford (2001) describe a research paradigm as consisting of three components: a perspective on the nature of knowledge, a method for investigation, and standards for determining validity. In contrast, Neuman (2000) and Cresswell (2003) identify the paradigm in terms of epistemology, ontology, or potentially as research methodology. Various interpretations exist.

The research paradigm adopted for this research is the interpretivist paradigm, its foundation is the idea that approaches to comprehending information in the human and social sciences cannot be the same as those employed in the physical sciences because people interpret their environment and act accordingly, whereas the environment does not (Page 26 of Hammersley, 2013), Interpretivists embrace a relativist ontology, suggesting that an event can be understood in multiple ways rather than as a singular fact that can be established through a specific method, allowing for a more profound comprehension of the event and revealing the intricate issues and phenomena within the particular context of the situation (Creswell, 2007). This approach enables researchers to observe not only what has occurred but also how it came to be.

For this study, interpretivism is appropriate because it corresponds with the objective of investigating EMI instructors' personal viewpoints regarding the use of Artificial Intelligence (AI) in English-Medium Instruction at BBA University in Algeria. Interpretivism is based on the idea that reality is constructed socially, meaning that individuals perceive and understand the world through their distinct contexts, interactions, and cultural backgrounds. Since the purpose of this study is to learn how teachers view, comprehend, and react to AI in their instruction rather than to validate a theory or assess a static reality, the interpretivist framework offers an appropriate philosophical basis. The researcher can delve deeply into participants' experiences and derive meaning from the rich, complex data they provide by using qualitative techniques like semi-structured interviews. Furthermore, this paradigm encourages a context-sensitive approach, which is crucial in research settings where local educational laws, institutional culture, and technological accessibility all affect participants' attitudes and actions. By embracing interpretivism, the study acknowledges and portrays the complexity and variety of lived experiences that cannot be simplified into numerical data or generalized conclusions.

2.3.Research design

This study adopts a basic qualitative research design, Merriam (2009) defines a basic qualitative research study as being influenced philosophically by constructionism, phenomenology, and symbolic interaction, and it is utilized by researchers interested in "(1) the ways people interpret their experiences, (2) the methods they use to construct their worlds, and (3) the significance they assign to their experiences. The primary aim is to grasp how individuals comprehend their lives and their experiences", This method captures the variety and diversity present in participants' perspectives while enabling a thorough investigation of the research issue (Charmaz, 2006).

This research uses a qualitative research methodology with an exploratory goal to learn more about how teachers at BBA University feel about incorporating Artificial Intelligence (AI) into English-Medium Instruction (EMI). This study works best with a qualitative design because it lets us investigate complicated beliefs, attitudes, and living experiences that can't be fully captured by quantitative measures alone. The exploratory nature of this study is supported by the fact that not much research has been done on how AI and EMI work together in higher education in Algeria. By focusing on semi-structured interviews and semi-structured questionnaire answers, the study design aims to find new themes and patterns in how university teachers see AI use, challenges, and opportunities. This design gives us the freedom and detail we need to investigate how participants personally understand and use EMI and AI tools at work.

This study is grounded in an interpretivist paradigm and employs a mixed-methods approach to investigate university teachers' perceptions of using Artificial Intelligence (AI) in the implementation of English-Medium Instruction (EMI). A case study design was adopted. Data was collected through a semi-structured questionnaire—which included both closed-ended items for quantitative analysis and open-ended questions for qualitative insights—as well as semi-structured interviews. According to Begley (1996), adding qualitative tools for data triangulation makes research more reliable, in-depth, and accurate. Triangulation is the process of getting more and better facts by using more than one method or source.

2.3.1. Case Study Design

Case study research is an approach that is commonly used in many fields to investigate specific examples or cases, it can look at both real things, like groups, and abstract ideas, like events. (Shuttleworth, 2014)

This study uses a case study method to find out what university teachers at BBA University think about using Artificial Intelligence (AI) in English-Medium Instruction (EMI). When looking into current problems in a real-life setting, the case study method works well. It helps us understand the things we're looking into in a more complete and accurate way. This design lets us look closely at teachers' experiences, practices, and the institutional factors that affect how AI is used in EMI settings by focusing on a single school.

2.4. Research setting

Research environments have changed to include a variety of settings, such as online platforms and clinical situations. Social media sites provide fresh avenues for gathering and analysing data, broadening the reach of research beyond conventional limits (Nurdin, 2017).

This research took place at Bordj Bou Arreridj University (BBA University), a public higher education establishment located in northeastern Algeria. The university serves a diverse student population and offers a wide range of undergraduate and graduate programs in various disciplines, including sciences, economics, and humanities. Considering national educational reforms and globalization trends, BBA University has recently initiated steps to adopt English-Medium Instruction (EMI) in certain fields, even though it is in a nation where English is not the main language. At the same time, the university is gradually introducing Artificial Intelligence (AI) tools to improve teaching and learning, though this integration remains in its early exploration.

The simultaneous shift towards English Medium Instruction (EMI) and the integration of AI makes BBA University an ideal location for this research. It presents a distinct opportunity to examine how instructors are navigating and adapting to these changes in real time. This institution mirrors the broader difficulties encountered by universities in Algeria, such as constrained resources, unclear policies, and the necessity for faculty development. The decision to choose this setting was also affected by the researcher's access to the institution and their familiarity with its academic landscape, which eased communication, participant recruitment, and trust establishment. Therefore, BBA University provides a

valuable and insightful context for exploring EMI instructors' viewpoints on AI in the realm of higher education.

2.5.Research questions

This research is driven by a series of open-ended, exploratory inquiries designed to reveal the views, experiences, and methods of English-Medium Instruction (EMI) educators concerning the incorporation of Artificial Intelligence (AI) within higher education. This aligns with the qualitative and interpretive strategy embraced in this study. The inquiry is guided by the following five research questions:

- What are Algerian university teachers' perceptions of Artificial Intelligence (AI) integration in English-Medium Instruction (EMI), and how do they currently utilize AI tools in their EMI teaching practices?
- What are the perceived benefits and challenges of integrating AI into EMI, and what institutional support are needed?

2.6.Sample and sampling procedures

The research study population is characterized as a group of cases that are specified, restricted, and obtainable, serving as the foundation for selecting samples (Arias-Gómez et al., 2016). Sampling in research refers to the process of choosing a representative portion of a population to make inferences about the entire group (Lunsford & Lunsford, 1995; G, 2024).

The sample includes one EMI instructor from BBA University, who took part in a detailed semi-structured interview, along with 25 other instructors who filled out a structured questionnaire aimed at examining wider patterns and viewpoints. The interview participant was deliberately chosen due to their active participation in EMI and knowledge of AI tools, guaranteeing a thorough engagement with the research inquiries. The 25 respondents to the questionnaire were selected from various faculties within BBA University where EMI is implemented.

Purposive sampling was used to choose subjects based on how much they knew about Artificial Intelligence (AI) tools and how much experience they had with English-Medium Instruction (EMI). This method made sure that only people with the right knowledge and experience added to the data, which made the results completer and more accurate.

The inclusion criteria were as follows:

- Current engagement in English-Medium Instruction at BBA University.
- A minimum of one year of teaching experience at the university level.
- Readiness to participate in the study.
- For the interview: previous experience with or significant awareness of AI tools in education.

Despite the limited number of interview participants, the comprehensive data gathered from this instructor offers valuable, contextually rich insights.

2.7.Data collection procedures

The procedures for collecting data are very important for getting valid and accurate information for study. Key things to think about when designing a survey are the sampling methods, the justification for the sample size, and the answer rates (Suhonen et al., 2015).

This research utilized a qualitative methodology to investigate the viewpoints of EMI instructors on the integration of Artificial Intelligence (AI) in higher education at BBA University. Data were gathered using two primary qualitative methods: semi-structured interviews and responses to semi-structured questionnaires. These methods were chosen to obtain in-depth, descriptive insights into the participants' experiences, beliefs, and practices relating to AI in English-Medium Instruction (EMI).

2.7.1. Semi-Structured Questionnaires:

Researchers can get more useful information from semi-structured surveys than from traditional structured formats because they have both quantitative and qualitative parts (Adejimi et al., 2011). They are especially helpful for looking into people's thoughts and feelings, views, and the effects of certain policies or events. Semi-structured interviews, which work in a similar way, let you talk freely while still focused on certain topics. (Adams, 2015). This method is great for new students because it gives them a structured framework while still letting them collect data in their own way (Carruthers, 1990).

Semi-Structured questionnaire were sent to many teachers via emails with 25 answers received at BBA University. These surveys included questions that prompted respondents to detail their experiences with AI in EMI, provide examples from their teaching practices, and share their views on how AI tools assist or obstruct their efforts. The surveys were conducted electronically through email, according to the preferences of the participants.

2.7.2. Semi-Structured Interview:

Semi-structured interviews are a common qualitative research method that enables thorough investigation of themes in a conversational manner (Adams, 2015). This approach proves especially useful for gathering comprehensive and nuanced insights regarding motivations, attitudes, and behaviours (Adams, 2015; Mashuri et al., 2022).

We conducted interview with one teacher at the faculty of Natural and Life Sciences on 22 May 2025. We sent the teacher Gmail in advance, allowing him to choose a time that was convenient for him to participate in the interview. We also asked the teacher face to face if he were willing to participate. To ensure a suitable environment for the interview, we conducted him in quiet room to minimize noise and distractions. We obtained permission from the teacher to audio-record the interview, which allowed us to capture a detailed account of their answers. The teacher used English during the interview, with occasional switches to French and Algerian dialects. Duration varied from seven to fifteen minute.

2.8. Instrumentations

In this research, two qualitative tools were created and utilized to gather information from EMI instructors at BBA University: a semi-structured interview guide and semi-structured questionnaire. Both tools were developed in alignment with the research questions and were influenced by pertinent literature regarding English-Medium Instruction (EMI) and the use of Artificial Intelligence (AI) in teaching practices within higher education.

Semi-Structured Questionnaire:

A questionnaire combining both open-ended questions and close-ended questions was created and sent to 25 instructors to gather written narrative feedback regarding their experiences with EMI and AI. The items of the questionnaire were presented in English and Arabic.

The questionnaire is divided into three sections: Personal and Academic Information, Perceptions of AI in EMI Implementation, AI Tools Used in EMI Lesson Planning.

Section One: Personal and Academic Information Q01- Q10

This part has 10 questions meant to get background information about your work and personal life. It asks about the participant's academic field, school, highest degree, academic rank, and number of years spent teaching English as a second language (EMI). It also asks

how familiar they are with artificial intelligence (AI), if they have taught using EMI, how long they have taught using EMI, and if they use AI tools in their lessons and what tools they use. This basic knowledge is very important for figuring out how teachers feel about AI and EMI.

Section Two: Perceptions of AI in EMI Implementation (7 questions)

This part has seven questions that ask teachers what they think and feel about AI in EMI. A Likert scale is used to see how much people agree with statements about AI's part in making lesson planning better, adapting materials, getting students more involved, and giving feedback. It also asks if AI could replace traditional teaching jobs and what people think about that possibility. It also lists the biggest problems people encounter when using AI in EMI settings.

Section Three: AI Tools Used in EMI Lesson Planning (6 questions)

The last part has six questions that look at how AI tools can be used in real life to plan and teach lessons. It asks teachers how often they use certain AI tools (like Kahoot, ChatGPT, and Grammarly) and asks them to list other tools. It also figures out what areas of teaching can benefit from using AI. It also asks what the main pros and cons of using AI in EMI are, what could be done to make it better, and what role AI will play in EMI at BBA University in the future.

Semi-Structured Interview:

The semi-structured interview framework was created to investigate participants' detailed viewpoints regarding the function of AI in EMI. The framework included a set of open-ended questions categorized by central themes, such as:

- Difficulties Associated with English-Medium Instruction (EMI)
- Application of AI Tools in Educational Settings
- AI's Role in Enhancing Language Skills
- Advantages and Obstacles of AI in EMI
- Support and Training for Implementing AI
- Strategic Planning and Vision for the Future

2.8.1. Pilot Study

A pilot study was done with my supervisor at BBA University before the full operation of collecting data began. The goal was to see how clear, relevant, and right the interview and evaluation questions were. She gave suggestions on how to improve the things' wording, order, and length. Small changes were made based on what she said to make the question clearer and make sure it fit better with the study goals. This step was very important for making the research tools more reliable and truer and for making sure that data collection went smoothly for the main study.

2.9.Data analysis procedures

The information gathered from the semi-structured interviews and semi-structured questionnaires was examined using a A convergent parallel mixed-methods design was used, allowing for simultaneous collection and comparison of quantitative and qualitative data. By using the thematic with open-ended items and frequencies and percentages with closed items.

Several crucial steps were included in the analysis process. First, to make sure everyone was comfortable with the material, every response was read several times. To allow themes to spontaneously arise from the data rather than being imposed by pre-existing categories, the interview's audio tape was transcribed verbatim, and the transcript and questionnaire responses were manually categorized using an inductive technique. The semi-structured interview's verbatim transcription and a careful examination of the semi-structured questionnaire replies marked the start of the procedure. Through repeated readings, the researcher became first acquainted with the data, taking note of preliminary impressions and possible trends. By using an inductive coding approach, codes were not imposed by pre-existing theoretical frameworks but instead developed organically from the data. To be true to the participants' own words and experiences, this approach was selected.

Following the initial coding process, related codes were merged to create more comprehensive categories, which were subsequently examined and further developed into final themes. Key elements of the participants' viewpoints were represented by these themes, which included the perceived advantages of AI in EMI, implementation difficulties, frequently used AI technologies, and the need for institutional support. A peer researcher examined the topics and coding choices to guarantee the reliability and validity of the results. The study process sought to offer a comprehensive and nuanced understanding of the

implications of AI for teaching and learning at BBA University as well as how it is being used in EMI contexts.

Theme	Subthemes	Sample Code	Example Quote
Functional Roles of AI in EMI	Automation, Planning, Support	AI for language practice	"AI can handle vocabulary drills, grammar exercises, pronunciation practice…"
Perceived Benefits of AI Integration	Efficiency, Workload Reduction	Instant feedback	"Some AIs can provide instant feedback better than teacher."
Perceived Limitations and Human Value	Human qualities, Irreplaceability	Human irreplaceability	"AI can't replace the teacher's role."

Table 1: *Example of Thematic Coding and Analysis*

2.10. Issues of trustworthiness and ethical considerations

One of the most important things the researcher needs to do in his qualitative research is acknowledge trustworthiness. According to (Ahmed, 2024), trustworthiness in qualitative research is vital for creating credibility and reliability of findings. The four main factors of credibility, transferability, dependability, and confirmability are what make someone trustworthy (Z. Kakar et al., 2023; Ahmed, 2024).

The first measure to approach trustworthiness is credibility. In qualitative research, building credibility is essential to proving reliability and excellence. It guarantees that results appropriately reflect the phenomenon being studied and is analogous to internal validity in quantitative research. In qualitative research, various criteria have been suggested to build credibility and trustworthiness. The well-recognized framework by Lincoln and Guba (1985) encompasses credibility, transferability, dependability, and confirmability (Cope, 2014; Kakar et al., 2023). Credibility was achieved by gathering data from two distinct sources — a semi-structured interview and open-ended questionnaires — enabling data triangulation, which improves the richness and depth of the results. Participants were prompted to clarify and expand on their answers, which helped to ensure their viewpoints were accurately represented.

The second measure is Transferability. Transferability in qualitative research indicates how well findings can be utilized in different contexts or environments (Drisko, 2024). Transferability was tackled by offering detailed descriptions of the research environment, participants, and processes. This enables readers to assess if the results could be relevant to comparable EMI situations in other Algerian or global universities

The third measure is dependability. Dependability refers to the reliability and steadiness of the research process over time (Kale, 2019). Dependability was ensured by maintaining comprehensive documentation of every stage of the research process, encompassing data collection, transcription, coding, and theme development. This audit trail guarantees that the research can be tracked and possibly duplicated by upcoming researchers

The last measure of trustworthiness in qualitative research is confirmability. (Shenton, 2004) defined confirmability as it entails showing that results arise from the data instead of researcher bias. Confirmability was ensured through a peer debriefing process, where a colleague experienced in qualitative analysis examined the coding and theme interpretations to reduce researcher bias. Additionally, reflexive notes were kept throughout the analysis to recognize and address the researcher's positionality

2.10.1. Ethical Considerations

Ethical consideration in research is vital for safeguarding participants and upholding integrity. In educational research, ethical standards are essential for enhancing lives and avoiding misconduct (Afshar et al., 2011). This research followed the ethical guidelines of voluntary involvement, informed consent, confidentiality, and anonymity. Before data collection, participants were made aware of the study's purpose, their option to withdraw at any point, and the way their data would be utilized. Participants were informed that their answers, whether given in interviews or surveys, would be utilized solely for research purposes and presented in an aggregated and anonymized format. These measures guaranteed that the research adhered to rigorous ethical standards, promoting a reliable environment where participants could openly express their opinions on the incorporation of Artificial Intelligence in English-Medium Instruction.

2.11. Limitations and Delimitations

Research limitations and delimitations play an essential role in the research process. Limitations are unforeseen problems that occur after a study has been completed, whereas delimitations are deliberate boundaries established by researchers to concentrate on their research (Coker, 2022). Both factors influence research design, data gathering, and analysis (Theofanidis & Fountouki, 2018).

2.11.1. Limitations

Limitations pertain to the constraints and shortcomings of the research that were outside the researcher's influence. A key constraint of this study is its limited sample size just one subject was interviewed, and 25 provided answers to the questionnaire. Consequently, the results might not accurately reflect all EMI instructors in Algeria, or even throughout BBA University. Moreover, dependence on self-reported information can lead to bias, since respondents may offer socially acceptable answers or refrain from sharing important views on AI integration because of institutional concerns.

Another constraint pertains to the focus on a single institution. The study lacks the wider institutional variety that could improve the generalizability of its findings by solely focusing on BBA University. Additionally, time limitations and restricted access to a broader group of participants might have affected the richness of responses and the range of viewpoints gathered.

2.11.2. Delimitations

Delimitations, in contrast, are the purposeful boundaries established by the researcher to limit the range and emphasis of the study. This research focused exclusively on English-Medium Instruction (EMI) educators at BBA University in Algeria. It excluded students, administrators, or faculty from non-EMI departments, even though these groups might also engage with AI in educational contexts.

Furthermore, the research concentrated on the application of AI in EMI settings, instead of examining AI in higher education in general. The researcher decided to use a qualitative approach, employing open-ended questionnaires and a semi-structured interview as the sole data collection methods. This choice was made to gather detailed, comprehensive insights into teachers' experiences, instead of measurable data.

Conclusion

In this chapter, the data collection and analysis that guided this study to explore teachers' perspectives on leveraging Artificial Intelligence (AI) for effective English-Medium Instruction (EMI) implementation at BBA University, Algeria. The research utilized a qualitative methodology rooted in the interpretivist framework, seeking to attain a profound understanding of the lived experiences, perceptions, and professional practices of the participants. A case study approach was utilized to concentrate on a particular setting, with data gathered via open-ended questionnaires and a semi-structured interview. The methodology detailed the research context, sample selection, and tools used, along with employing thematic analysis for the data analysis process. Steps to guarantee trustworthiness—including credibility, transferability, dependability, and confirmability were implemented during the entire research process. Ethical concerns were rigorously maintained to safeguard participants' rights, privacy, and dignity. By explicitly outlining the limitations and delimitations, the research recognized both the obstacles faced and the intentional restriction of its focus. This methodology aimed to produce significant and genuine insights that will enhance the comprehension of AI integration in EMI contexts and possibly guide future educational practices and policies in Algeria and elsewhere.

The following chapter presents and discusses the findings obtained from the questionnaire and interview

Chapter Three Results and Findings

Introduction

This chapter presents the results and findings generated from the analysis of the data obtained from the research instruments (questionnaire and interview). This chapter has two goals: first, it reports the information gathered from semi-structured interviews and open-ended questionnaires; second, it analyses the results considering the research questions of the study and pertinent literature. This chapter seeks to present a thorough understanding of how university instructors view and interact with AI tools in their EMI environments by integrating data with theoretical perspectives and past research. This understanding is vital for guiding institutional policies and practices focused on improving EMI quality through technology in higher education in Algeria.

3.1.Teachers Questionnaire Analyse

Section One: Personal and Academic Information

1_ What is your academic discipline or Faculty?

Table 3.1*: Participants' Academic Disciplines*

Academic Discipline	Frequency	Percentage%
Mathematics and Computer Science	7	28%
Science and Technology	6	24%
Humanities & Social Sciences	4	16%
Letters and Languages	4	16%
Management, Commerce and Economy	3	12%
Law and Political Sciences	1	4%
Medical Sciences	0	0%
Natural and Life Sciences, Earth and...	0	0%
Total	25	100%

Figure 3.1: *Participants' Academic Disciplines*

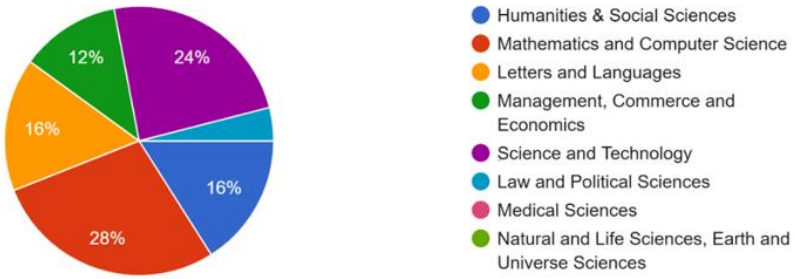


Figure and table 3.1 show the distribution of participants according to their academic disciplines. Most of them (28%) are from the faculty of mathematics and computer science. The next biggest group is from the faculty of science and technology, with 24%. Letters and Languages and Natural and Life Sciences, Earth and Universe each make up 16%. Management, Commerce, and Economics make up 12% of the members. Humanities and Social Sciences make up the smallest group, with only 4%.

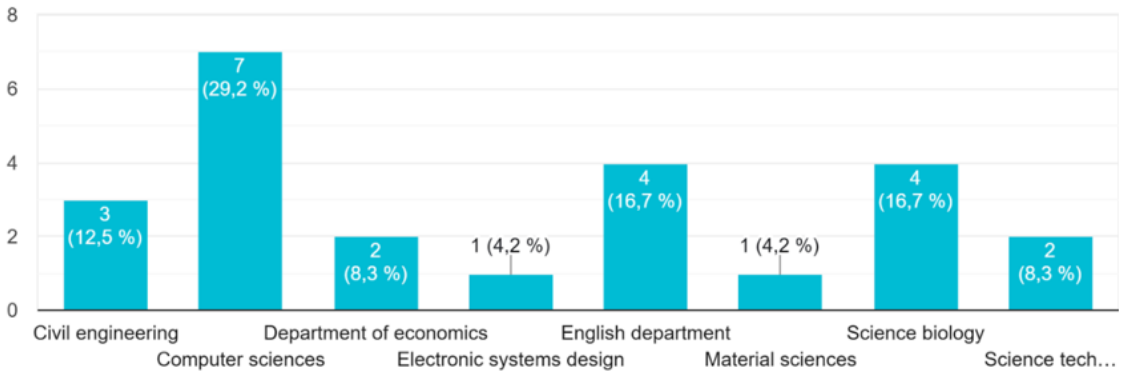
The distribution shows that most of the participants are from science and technology-related fields, especially Mathematics, Computer Science, and Science and Technology. This means that STEM areas are well represented. This could mean that people in these schools have more experience with or interest in AI tools. Also, fields like Humanities and Social Sciences aren't represented as much as they should be. This could be because AI isn't used as much in these areas or because EMI isn't widely used. This difference shows how important it is to customize AI training and help based on backgrounds and needs.

2. Name the Department where you are affiliated

Table 3.2*: Participants' Departments*

Department	Frequency	Percentage%
Computer Sciences	**7**	**29.2%**
English Department	**4**	**16.7%**
Science Biology	**4**	**16.7%**
Civil Engineering	**3**	**12.5%**
Department of Economics	**2**	**8.3%**
Science Technology	**2**	**8.3%**
Electronic Systems Design	**1**	**4.2%**
Material Sciences	**1**	**4.2%**
Total	**24**	**100%**

Figure 3.2: *Participants' Departments*



As shown in Figure and Table 3.2, we can see that Computer Sciences has the most members (7 people), which is 29.2% of the whole group. After this, the English Department and the Science Biology Department each send four people, which is 16.7% of the total. Three people (12.5%) are in the Department of Civil Engineering, and two people (8.3%) are in each of the Departments of Economics and Science Tech. The fields with the fewest students are Electronic Systems Design and Material Sciences, with each having just one student, or 4.2% of the total.

This distribution strongly suggests that people from the Computer Sciences department were mostly involved in the study or action that these people were chosen to be a part of. The English Department and Science Biology have made important efforts, which shows how involved they are. On the other hand, the fact that departments like Electronic Systems Design and Material Sciences didn't participate much could mean that the event wasn't important to their fields, that people weren't aware of it, or that the departments were smaller. Overall, the data gives us useful information about the participants' departments, showing where representation is better and weaker.

3.3. Highest Degree obtained

Figure 3.3: *Participants' Highest Degree*

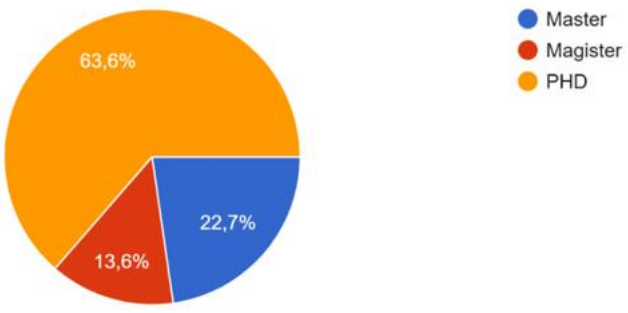


Table3.3: *Participants' Highest Degree*

Level	Frequency	Percentage%
Master	**5**	**22.7%**
Magister	**3**	**13.6%**
PHD	**14**	**63.7%**
Total	**22**	**100%**

When we look more closely at the pie chart and table 3.3, we can see that the orange segment, which represents people with a PhD, shows that 63.6% of them have that degree. The next biggest group is made up of people with a master's degree, who made up 22.7% of the whole, which is shown by the blue segment. The smallest group of subjects, with only 13.6%, has a Magister degree, which is shown by the red segment.

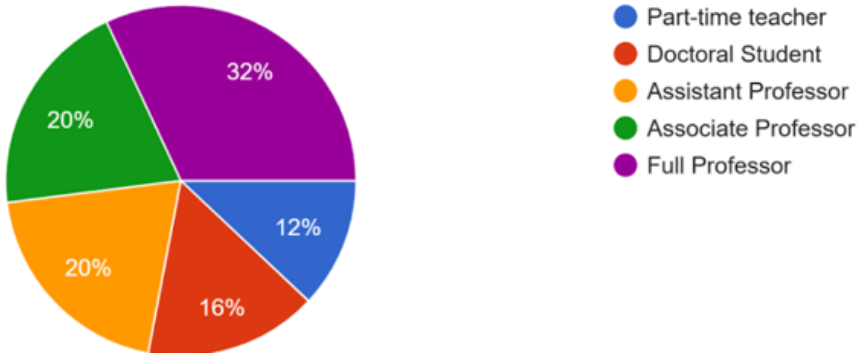
To make sense of this data, the participants are mostly people with very good academic credentials, especially PhDs. This high number of people with doctoral degrees suggests that the study or activity these people are taking part in is probably aimed at or naturally draws in highly educated workers, researchers, or academics. The intellectual rigor of the group is increased by the master's degree holders. On the other hand, the smaller number of Magister degree holders suggests that this level of education is less common, but still present.

4. What is your academic rank?

Table 3.4: *Participants' Academic Rank*

Academic Rank	Frequency	Percentage%
Full Professor	8	32%
Associate Professor	5	20%
Assistant Professor	5	20%
Doctoral Student	4	16%
Part-time Teacher	3	12%
Total	25	100%

Figure 3.4: *Participants' Academic Rank*



By looking closely at the pie chart and table 3.4, we can see that the largest group of people is made up of Full Professors, who make up 32% of the whole. This is shown by the purple segment. Next, the groups of Associate Professor and Assistant Professor each have an equal number of participants (20% each, shown in green and orange). Doctoral Students

make up 16% of the participants, which is shown in red. Part-time teachers, who make up 12%, are the smallest group, as shown in blue on the chart.

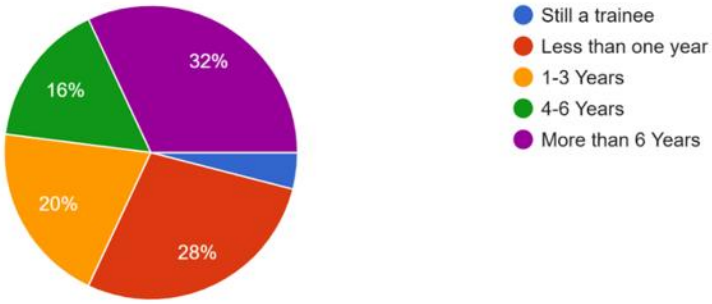
Taking this distribution of academic ranks into account, the large number of Full Professors strongly suggests that the study or activity is mostly done by top and well-known academics. The fact that both Assistant Professors and Associate Professors are represented shows that core academic staff members at all stages of their careers are actively involved. Doctoral Students' participation shows that people who are actively doing advanced study are involved. Part-time teachers' participation, on the other hand, shows that adjunct or temporary faculty are involved, though not as much. In general, the academic background of the members seems strong, with a lot of tenured and experienced professors.

5.What is your teaching experience in EMI (English-Medium Instruction)?

Table 3.5*: Participants' EMI Teaching Experience*

Teaching Experience in EMI	Frequency	Percentage%
More than 6 years	8	32%
Less than one year	7	28%
1-3 years	5	20%
4-6 years	4	16%
Still a trainee	1	4%
Total	25	100%

Figure3.5 *: Participants' EMI Teaching Experience*



When we look more closely at the pie chart and table 3.5, we can see that the largest group, which includes 32% of the participants, is in the purple "More than 6 Years" experience area. The "Less than one year" category, shown in red, has 28% of the participants, making it the second biggest group. 20% of the people who participated have "1-3 Years" of experience, which is shown in orange. 16% have "4-6 Years" of experience,

which is shown in green. The smallest group, which is made up of people who are "Still a trainee," has 4% of the members, as shown by the blue segment.

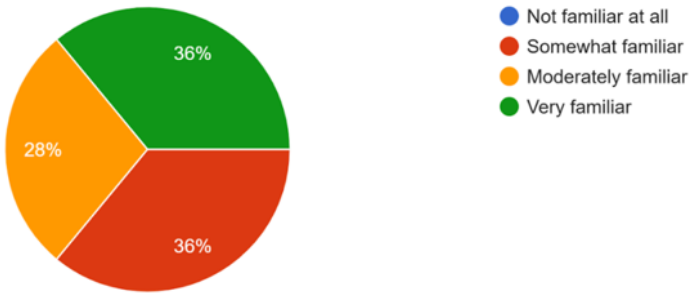
Looking at this data, we can see that the participants' EMI teaching experience is very different, showing a bimodal trend. A lot of EMI teachers have a lot of experience; the biggest group has "More than 6 Years" of experience, which shows how experienced they are. Also, a lot of the participants are new to teaching EMI; the second biggest group has "less than one year" of experience, which shows that a lot of them are still learning. This points to a dynamic setting with both experienced professionals and a steady flow of new ones. Two groups of participants, "1-3 Years" and "4-6 Years," have a moderate amount of experience. A small number of people are still in training. This mix shows that the participants in this study have a wide range of experience levels in the EMI teaching group.

6_ What is your level of familiarity with AI in education?

Table 3.6*: Participants' Familiarity with AI in Education*

Familiarity with AI in Education	Frequency	Percentage%
Somewhat familiar	**9**	**36%**
Very familiar	**9**	**36%**
Moderately familiar	**7**	**28%**
Not familiar at all	**0**	**0%**
Total	**25**	**100%**

Figure 3.6: *Participants' Familiarity with AI in Education*



Looking more closely at the pie chart and table 3.6, we can see that "Very familiar" (shown in green) and "Somewhat familiar" (shown in red) make up the biggest groups, each with 36% of the participants. Such a high percentage of participants clearly have at least a basic understanding of or experience with AI in school settings. That leaves the "Moderately

familiar" group, which is made up of 28% of the subjects and is shown in orange. There isn't a visible segment for "Not familiar at all," even though it's in the legend. This means that neither one reported this level of familiarity, or the proportion was so small that it wasn't shown in the chart.

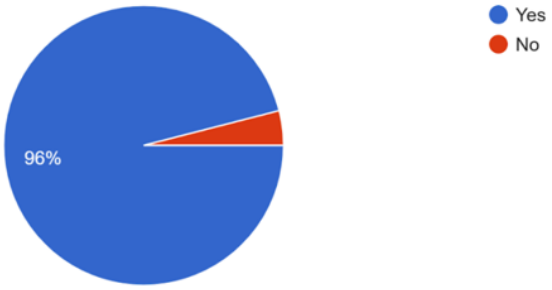
When looking at these results, it's clear that most of the people who took part have a good understanding of AI in education, with levels running from somewhat to very. The large and equal numbers of "Very familiar" and "Somewhat familiar" respondents show that a lot of the people who participated are interested in or aware of AI's role in education and conversation. Participants are likely well-equipped to talk about, review, or add to topics related to the use and effects of AI in educational settings because they are all familiar with them.

7_ Have you taught courses using English as the medium of instruction (EMI)?

Table 3.7: *EMI Teaching Experience Among Participants*

Response	Frequency	Percentage%
Yes	24	96%
No	1	4%
Total	25	100%

Figure 3.7: *EMI Teaching Experience Among Participants*



A close study of the pie chart and table 3.7 shows that most of the participants had experience teaching EMI. The large blue section shows that a large majority of respondents (96% of the total) answered "Yes" to the question about EMI teaching experience. On the other hand, only 4% of those who answered said they had "No" EMI teaching experience. This is shown by the small red in the picture.

When trying to figure out what these results mean, it is very clear that the participants are mostly people who have taught subjects using English as the language of education. Based on the high prevalence (96%), it seems possible that the study or survey that this information came from is aimed at or has successfully recruited educators who are already

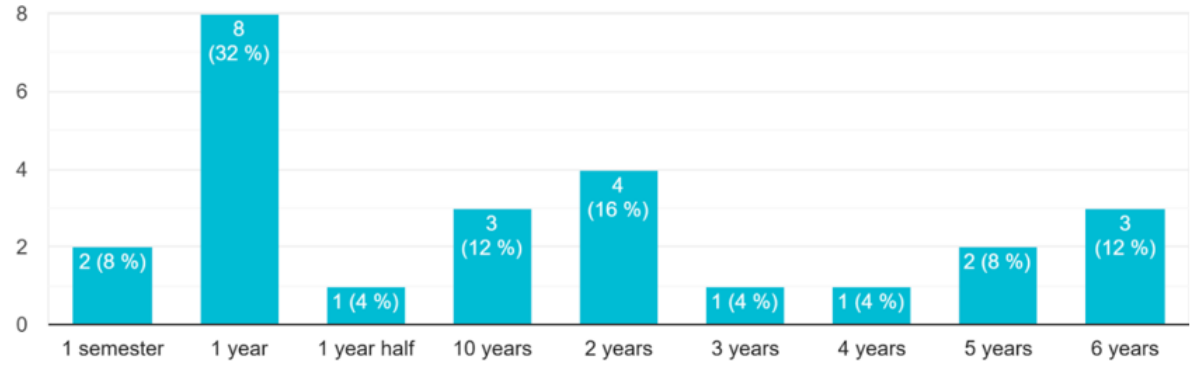
involved in EMI. Because the participants have firsthand experience in this educational setting, they are very useful for discussions, study, or insights about EMI practices, challenges, and changes.

8.If yes, how long have you been teaching courses using EMI?

Table 3.8: *Duration of EMI Teaching Experience*

Duration of Teaching EMI	Frequency	Percentage%
1 year	**8**	**32%**
2 years	**4**	**16%**
10 years	**3**	**12%**
6 years	**3**	**12%**
1 semester	**2**	**8%**
5 years	**2**	**8%**
1 year half	**1**	**4%**
3 years	**1**	**4%**
4 years	**1**	**4%**
Total	**25**	**100%**

Figure 3.8: *Duration of EMI Teaching Experience*



By looking closely at the chart and table 3.8, we can see that the most common length of EMI teaching experience among the participants is one year, which includes 8 people and makes up 32% of the total. After this, 4 of the participants (16%) said they had two years of experience. Notably, three people in each of the 10–6-year age groups, or 12% of the total, are in each category. Two people are taking part in each length of time, one semester and five

years, which is 8% of the total. The groups for 1 year, 3 years, and 4 years have the fewest participants, with just one each. That's a 4% representation rate.

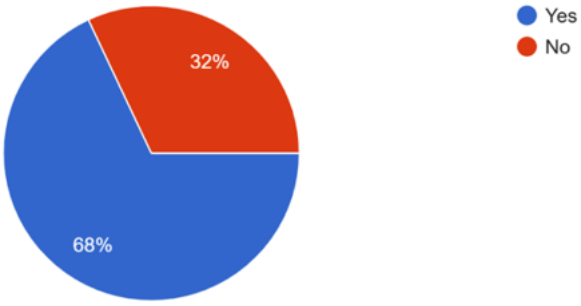
When looking at this data, it's clear that the participants have a wide range of EMI teaching experience, from very short times to ten years. However, there is a clear concentration of teachers who are just starting out with EMI. There are a lot of participants with less than one year of experience, which means that there are a lot of new EMI teachers in the sample. Even though there are some professionals with 10 or 6 years of experience, most of the people who work as EMI teachers are just starting out or are in the early to mid-stages of their jobs. All these different levels of training give the participants a full picture of the EMI teaching landscape.

9_ Do you use AI tools in your teaching?

Table 3.9: *Use of AI Tools in Teaching*

Response	Frequency	Percentage%
Yes	17	68%
No	8	32%
Total	25	100%

Figure3.9: *Use of AI Tools in Teaching*



By looking at the pie chart and table 3.9, it's clear that a large majority of the participants, or 68%, use AI tools in their training. This important section is shown by the bigger blue segment. The red segment, on the other hand, shows 32% of participants who do not currently use AI tools in their training.

Understanding this information makes it clear that a lot of the people who were surveyed use AI tools in their training. More than two-thirds of the participants are using AI in their lessons, which shows that these technologies are becoming more popular and accepted in the school community. Some people still don't use AI tools, but most people are leaning heavily toward integrating them. This shows that the participants have a more open-minded view on using technology for educational reasons.

3.10. If yes, what AI tools do you use in your teaching?

This is an Open-ended follow-up question (conditional on a "yes" in Q9), it focuses on specific names and brief descriptions of AI tools the participants use in their teaching, the purpose is to identify which AI tools are used in real classroom. Participants regularly named a lot of different AI tools, but ChatGPT was the one that came up most often. The answers showed that educators use a wide range of tools, with different systems being used for different tasks.

ChatGPT was mentioned in nearly every response, underscoring its central role in AI integration. Other frequently mentioned tools included **Claude AI**, **Gemini**, **DeepSeek**, **Grammarly**, and **QuillBot**.

“ChatGPT, Claude, Manus, GitHub Copilot, Deepseek” (Participant 6)

“ChatGPT (explaining theories and answering questions), DeepSeek (generating coding examples for simulations), and Felo (interactive voice assistant for studying)” (Participant 5)

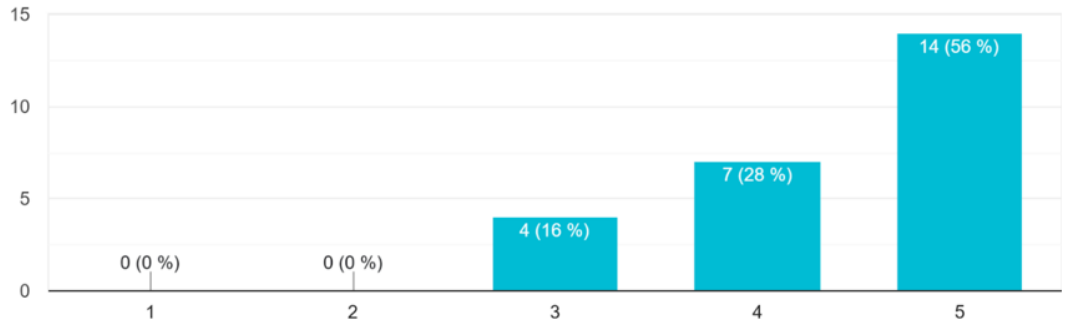
Section two: Perceptions of AI in EMI Implementation

1_AI enhances lesson planning efficiency in EMI

Table 3.11: *Perceptions of AI's Role in EMI Lesson Planning*

Agreement level	Frequency	Percentage%
Strongly Disagree	**0**	**0%**
Disagree	**0**	**0%**
Neutral	**4**	**16%**
Agree	**7**	**28%**
Strongly Agree	**14**	**56%**
Total	**25**	**100%**

Figure 3.11: *Perceptions of AI's Role in EMI Lesson Planning*



When you look closely at chart 3.11, you can see that most of the participants had good views. Level 5, with 14 people, makes up a big 56% of the total and is by far the largest group. These results show that more than half of the people surveyed have a very good view of AI's role in planning EMI lessons. This is followed by Level 4, which has seven participants, or 28% of the total. This further supports the good trend. At Level 3, there is a smaller group of four people (16%) who have a moderate or neutral view. It's important to note that neither Level 1 nor Level 2 have any recorded participants, so they both show 0% participation.

When looking at these results, it's clear that most of the people who took part think AI plays a positive and important role in planning EMI lessons. The fact that there were no negative or very low perceptions and a lot of responses in the top two positive groups shows that most people are open to and optimistic about using AI in education. This very positive

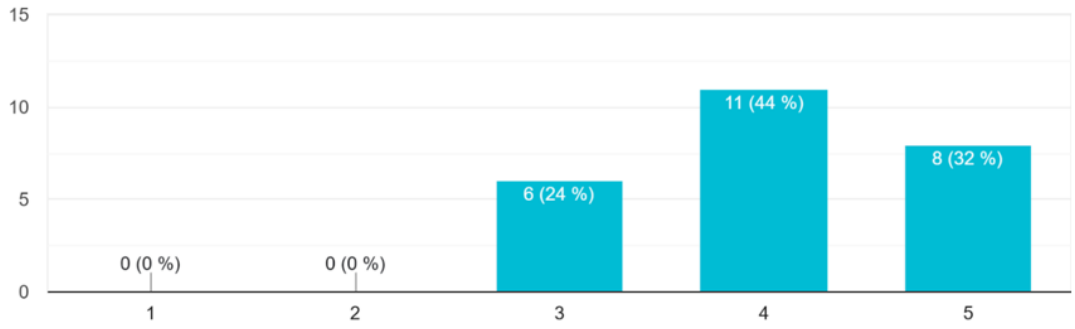
outlook suggests that teachers in Algeria and other similar places are becoming more aware of and excited about AI's ability to make planning EMI lessons more effective and efficient.

2_AI helps adapt lesson materials to different student proficiency levels

Table 3.12: *Teachers' Perceptions of AI in Adapting Lesson Materials*

Agreement level	Frequency	Percentage%
Strongly Disagree	**0**	**0%**
Disagree	**0**	**0%**
Neutral	**6**	**24%**
Agree	**11**	**44%**
Strongly Agree	**8**	**32%**
Total	**25**	**100%**

Figure 3.12: *Teachers' Perceptions of AI in Adapting Lesson Materials*



If you look closely at the chart and table 3.12, we can see that teachers in Algeria are very positive about AI's ability to change lesson materials. Level 4, with 11 teachers, makes up a significant 44% of the total and is by far the largest group. Right behind them are the eight teachers at Level 5, who make up 32% of the total. This combined majority of 76% (44% + 32%) strongly suggests that a lot of people think AI will work and be useful for this reason. Six teachers, or 24 percent, are at Level 3, which means they have a neutral or somewhat good opinion. Most importantly, neither Level 1 nor Level 2 have any teachers listed, so they both have a 0% representation.

In my opinion, this range of opinions clearly shows that most Algerian teachers are positive about AI's ability to help them change lesson materials. The fact that there are no negative thoughts (Levels 1 and 2) supports this positive attitude. This strong support

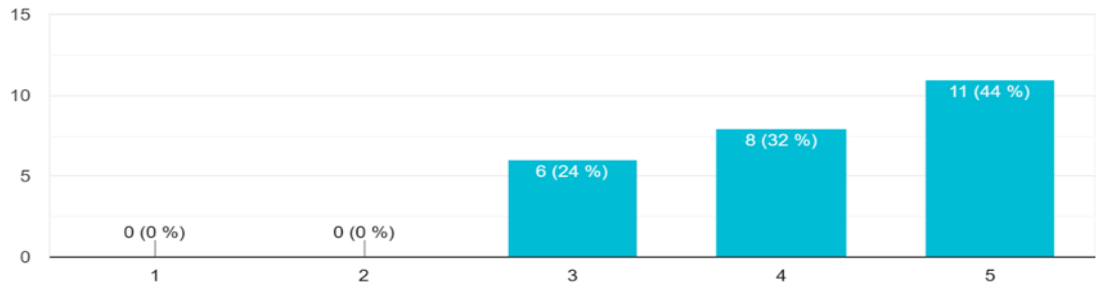
suggests that teachers are aware of how AI can be used to tailor lessons to each student and make the process of customizing materials faster and easier. Such a positive view among many people could make it easier for AI tools to be used more in Algerian schools to improve teaching methods.

3_AI tools improve student engagement and interaction in EMI classrooms

Table 3.13: *AI Impact on Student Engagement in EMI*

Agreement level	Frequency	Percentage%
Strongly Disagree	**0**	**0%**
Disagree	**0**	**0%**
Neutral	**6**	**24%**
Agree	**8**	**32%**
Strongly Agree	**11**	**44%**
Total	**25**	**100%**

Figure3.13: *AI Impact on Student Engagement in EMI*



When you look closely at the picture and table 3.13, we can see that people in Algeria were very positive about AI's ability to get students more involved in EMI. Fourteen percent of those who answered (44%) rate AI's effect as Level 5, which means they strongly believe it will be positive. Close behind is Level 4, which is given by 32% of individuals who see a strong positive effect. A smaller but still significant number, 24% of the people who participated, have a neutral or mild view at Level 3. It's important to note that neither Level 1 nor Level 2 have any recorded participants, showing 0% representation. This shows that there are no observed negative or insignificant effects.

From what these results mean, it's clear that most teachers in Algeria think AI is a useful tool for getting students more involved in EMI settings. The large number of answers in the higher levels of the perception scale (Levels 4 and 5) shows that most people are

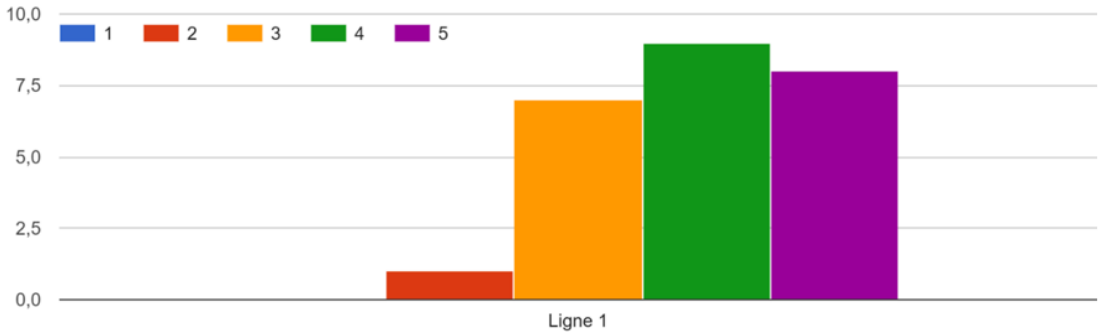
optimistic and confident in AI's ability to make English-taught learning more engaging and interactive for students. This generally positive view shows that people in Algeria's education system are ready to learn more about and use AI technologies to improve teaching, especially when it comes to getting students more involved in EMI classrooms.

4_AI provides useful feedback and assessment support for EMI students

Table 3.14: *AI Support for Student Feedback and Assessment in EMI*

Agreement level	Frequency	Percentage%
1_Strongly Disagree	0	0%
2_Disagree	1	4%
3_Neutral	7	28%
4_Agree	9	36%
5_Strongly Agree	8	32%
Total	25	100%

Figure 3.14: *AI Support for Student Feedback and Assessment in EMI*



When you look more closely at the chart and table 3.14, we can see that most of the participants were positive about AI's role in helping with feedback and review. 36% of responders, or 9 people, said they "Agree" with AI's support, which was the most of any response. Next, 32% of the people who answered, "Strongly Agree," or 8 people, said the same thing. This combined majority of 68% (36% + 32%) shows that a lot of people think AI can help with these educational tasks. A significant portion (28%, or 7 participants) chose a "Neutral" response, which means they were not sure what to say or had a fair view. A very small percentage (4%, or 1 participant) chose to "Disagree." Importantly, none of the participants chose "Strongly Disagree," which shows that most people did not have strong negative views.

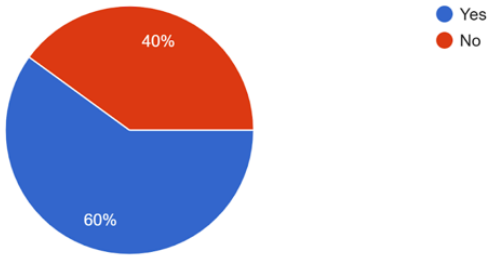
Based on how these results are interpreted, a large majority of teachers in Algeria see AI as a useful tool for improving how students are graded and given feedback in EMI settings. Based on the high levels of agreement, it looks like teachers are aware of AI's ability to make these important parts of teaching easier and better. Some people are still not sure, which could mean they need more information or experience, but most people agree that AI will have good effects. This optimistic view could make it easier to incorporate and improve AI-powered tools that aim to improve grading and feedback systems in EMI classrooms in Algeria.

5_AI may replace some traditional teacher roles in EMI

Table 3.15: *Perceptions of AI Replacing Teacher Roles in EMI*

Response	Frequency	Percentage%
Yes	**15**	**60%**
No	**10**	**40%**
Total	**25**	**100%**

Figure 3.15: *Perceptions of AI Replacing Teacher Roles in EMI*



When you look at the pie chart and table 3.15, it's clear that most of the people who took the survey think that AI will replace teachers. 60% of those who answered chose "Yes," which is shown by the bigger blue part of the pie. On the other hand, 40% of those who answered said they didn't think AI would replace teachers, as shown by the red section.

When looking at these results, it's clear that most of the people who took part in the study in Algeria are very worried or excited about the idea that AI could automate or take over typical teaching duties in EMI. It looks like this majority view acknowledges that AI is getting smarter and could change the way we learn. There is still a large group of people who aren't sure or who are optimistic about the human part in teaching. However, the general feeling among educators about how their job is changing in the age of AI suggests that they

are worried or maybe even strategically aware of this. This result is very important for talking about how to make policies, improve professionals, and plan for the future of education in Algeria when it comes to using AI in EMI.

6_If yes, please specify

Example of Initial Coding from questionnaire

Table 3.16: *Coding Example*

Data Extract P4	Initial Code
"AI can handle vocabulary drills, grammar exercises, pronunciation practice..."	Skill-based practice; Automated feedback; Intelligent tutoring

Theme 1: Automation of Routine Educational Tasks

One common theme in the responses was the belief that AI can successfully automate a number of common educational tasks. Several people talked about how AI can be used for things like grades, testing, and lesson planning, and writing documents. Participant 2 said, "AI can replace some traditional teacher roles by automating tasks like grading, personalized tutoring, and content delivery," while Participant 5 said, "AI can be used for assessment."

Theme 2: AI as a Supplementary Tool Rather Than a Replacement

Another important theme was the idea of AI as an extra tool that helps teachers do their job better but doesn't fully replace them. Participant 2 said it clearly: "AI lacks human empathy and creativity." This made a point of highlighting how important humans are to teaching. Another participant, Participant 7, said that AI could help professors by "summarizing, giving examples in areas beyond the professor's knowledge, and suggesting references."

Theme 3: AI for Skill-Based Language Learning

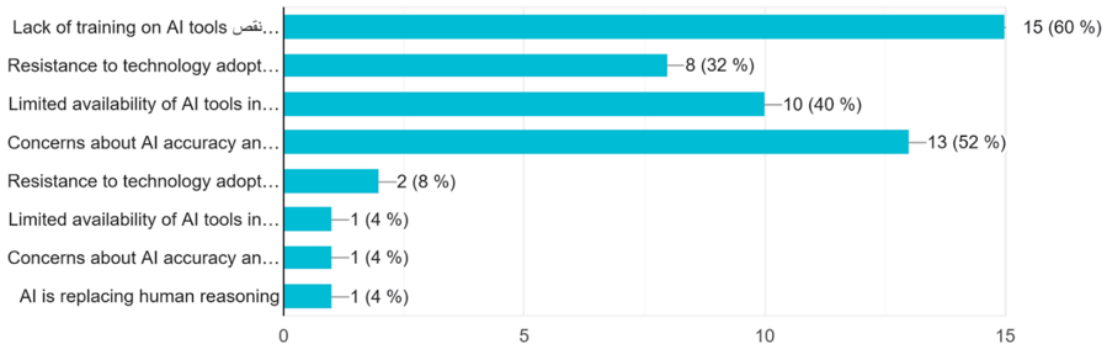
Several of the answers said that AI is especially good for teaching specific language skills. The fourth participant said that AI can handle "vocabulary drills, grammar exercises, pronunciation practice, and automated quizzes," giving "immediate correction and suggestions." Another participant said that AI could give "better instant feedback than teacher." People think that AI is good at teaching low-level skills consistently and effectively, especially when it comes to language learning.

7_ What are the main challenges of using AI in EMI? (Check all that apply)

Table 3.17: *Main Challenges of Using AI in EMI*

Challenge	Frequency	Percentage%
Lack of training on AI tools	**15**	**60%**
Concerns about AI accuracy and bias	**14**	**56%**
Limited availability of AI tools in my institution	**11**	**44%**
Resistance to technology adoption	**10**	**40%**
AI is replacing human reasoning	**1**	**4%**

Figure 3.17: *Main Challenges of Using AI in EMI*



By looking closely at the chart and table 3.17, we can see that the problem that participants described as being the most common is "lack of training on AI tools," which was given as an answer by 15 people, or 60% of the respondents. This shows how important it is for schools to get more professional development and skill-building opportunities in AI. Next, "Concerns about AI accuracy and reliability" comes in as the second most important barrier, with 13 participants (52%) stating this worry. This raises a fundamental question about the reliability and accuracy of AI systems used in education. Also, 10 people, or 40% of the answers, said that "limited availability of AI tools in educational settings" was a big problem.

However, there are other challenges as well, and they get fewer replies. "Resistance to technology adoption" was chosen by 8 participants, or 32%. This means that some people don't want to adopt new technological paradigms. Only one participant, or 4%, said they were worried about "AI replacing human reasoning." This suggests that most of the participants were not worried about this philosophical or existential problem compared to the more practical and immediate ones. In conclusion, the data strongly suggests that the main

problems stopping the wider and more effective use of AI in EMI classrooms in Algeria are the lack of easy-to-find and effective AI training, as well as the need for more reliable and accessible AI tools. These are the steps that need to be taken right away to solve these problems.

Based on what the participants said, the bar chart shows a number of major problems that come with using AI in EMI. The biggest problem is that teachers don't know how to use AI tools properly, which shows that they need to do a lot of professional growth and skill-building. Next, worries about AI's correctness and dependability are a big problem that needs to be fixed. This suggests a trust or dependability problem. A big real problem is also that AI tools are not easy to find. There is some resistance to using technology, but it doesn't seem to be as widespread as worries about training and accuracy. A very small group of people see the problem of AI replacing human thinking as a challenge. This suggests that it's not a big deal for this group compared to other, more practical problems that need to be solved right away. This information shows that better training, more reliable AI tools, and easier access are needed to help AI work better in EMI.

Section 3:AI Tools Used in EMI Lesson Planning

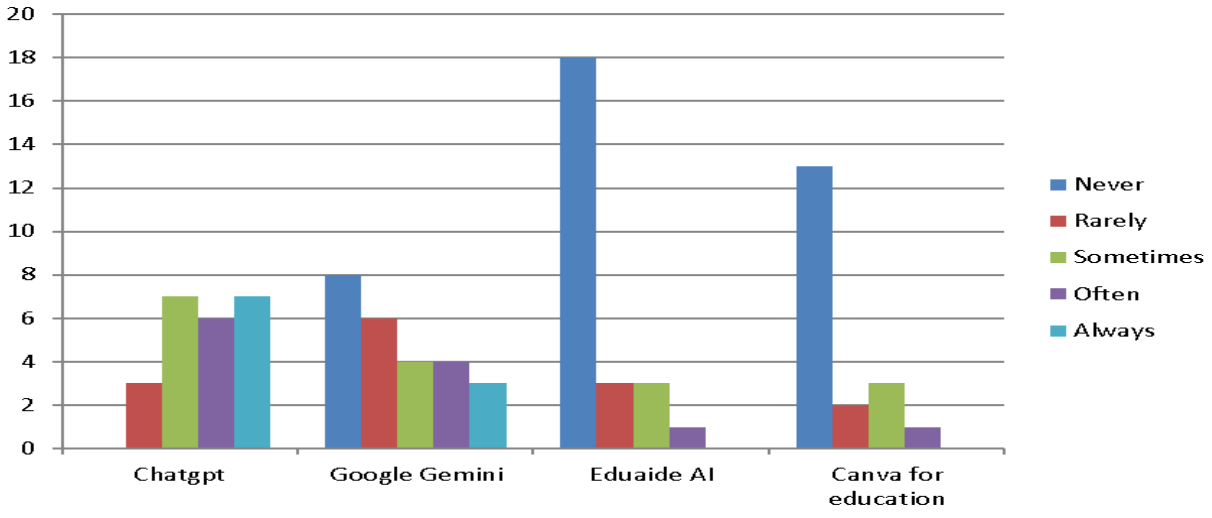
1_How frequently do you use the following AI tools in your EMI lesson planning?

(Use a Likert scale: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always)

Table 3.18: *Frequency of AI Tool Usage in EMI Lesson Planning*

AI Tool	Never	Rarely	Sometimes	Often	Always	Total Responses for Tool
ChatGPT	0	3	7	6	7	23
Google Gemini	8	6	4	4	3	25
Eduaide AI	18	3	3	1	0	25
Canva education	13	2	3	1	0	19

Figure 3.18: *Frequency of AI Tool Usage in EMI Lesson Planning*



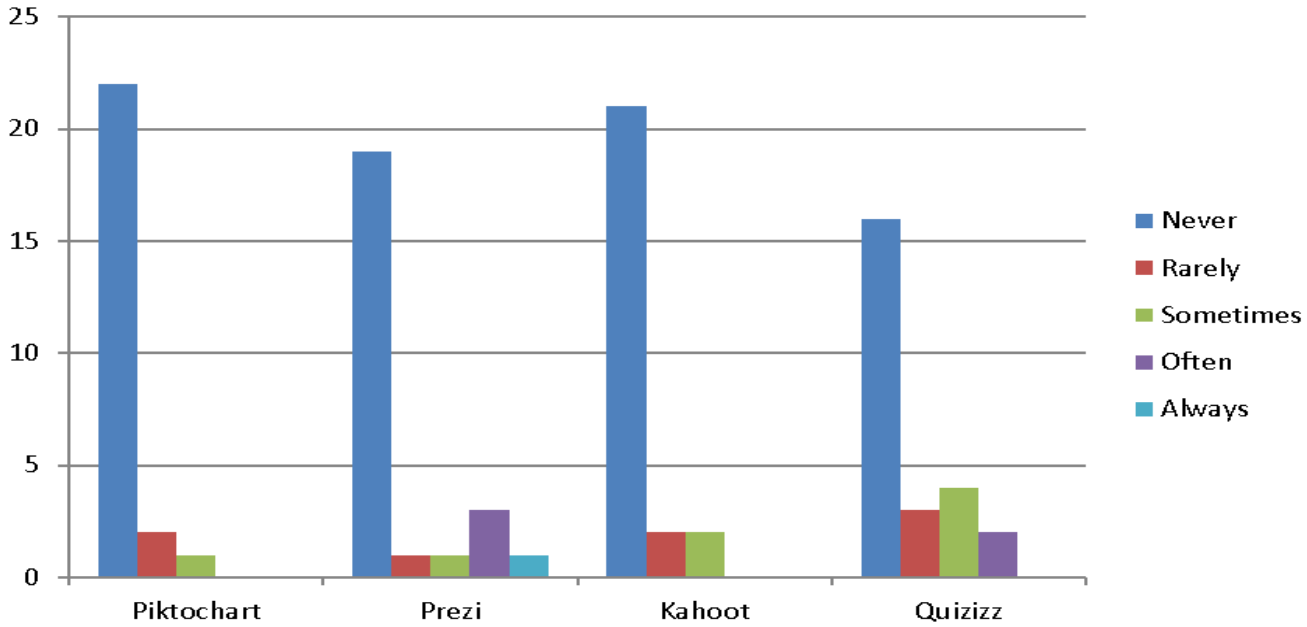
A close study of the chart and table 3.18 shows that each AI tool is used in a unique way. Many people said they used ChatGPT "Sometimes" (7 users), "Often" (6 users), or "Always" (7 users). It is widely recognized as the most popular tool for planning EMI lessons. This shows that ChatGPT is a big part of how a lot of the people who answered the survey plan their lessons. However, Eduaide AI and Canva education are not used at all; in fact, most of the people who participated said they "Never" use these tools (18 for Eduaide AI and 13 for Canva education). This means that the people who were asked either didn't know about these tools or didn't think they were useful or easy to use. Google Gemini has a more varied usage pattern, with a lot of users who say they "Never" (8 users) or "Rarely" (6 users) use it, as well as a big group of users who say they "Sometimes" (4 users) or "Often" (4 users).

The results show that some Algerian teachers are using AI tools for planning EMI lessons, but not all of them. Some powerful AI tools, like ChatGPT, are widely used and embraced. Other, more specialized or less common AI tools, like Eduaide AI and Canva education, have not yet gained a lot of popularity. The different ways Google Gemini is used show how useful it could be, but they also show that some users haven't fully integrated it into their process yet. There is a pattern here that shows teachers are ready to try out AI, but they tend to use tools that are thought to be the best, easiest to get, or well-known for being useful right away for planning lessons. The information gives us useful details about how AI tools are currently being used in EMI teaching in Algeria.

Table 3.19: *Frequency of AI Tool Usage in EMI Lesson Planning*

AI Tool	Never	Rarely	Sometimes	Often	Always	Total Responses for Tool
Piktochart	22	2	1	0	0	25
Prezi	19	1	1	3	1	25
Kahoot	21	2	2	0	0	25
Quizizz	16	3	4	2	0	25

Figure 3.19: *Frequency of AI Tool Usage in EMI Lesson Planning*



When you look closely at the chart and table 3.19, we can see that the AI tools mentioned are not being used nearly enough. Most of the people who answered said they had "never" used Piktochart, Prezi, and Kahoot, with 22, 19, and 21 answers in this category, respectively. These results show that these tools are not commonly used by the teachers asked when planning EMI lessons. With 4 people saying they use Quizizz "Sometimes" and 2 saying they use it "Often," the most common answer is still "Never," which was given by 16 people. All four tools have "Always" categories that always have zeros or very low numbers, which shows how rarely they are used.

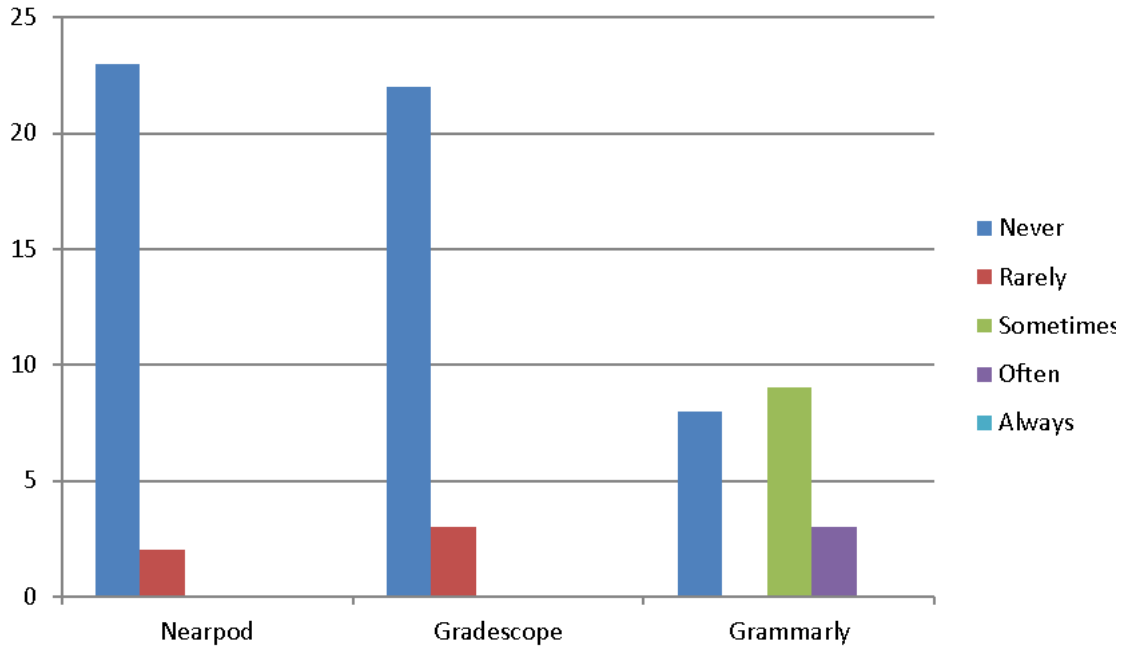
In terms of interpretation, these results are very different from how other AI tools, like ChatGPT, were used in earlier studies, where consistent and frequent use was seen. The large number of "Never" answers for Piktochart, Prezi, and Kahoot, along with the majority of "Never" answers for Quizizz, suggests that Algerian teachers either don't know about these tools as much, don't think they are useful for EMI lesson planning, or just don't like them. This might be because of the way they work, the fact that they aren't used much for lesson planning, or the fact that there are better options available. Overall, the data makes it clear

that these AI tools are not widely accepted or used very often in the participants' EMI lesson planning workflows.

Table 3.20: *Frequency of AI Tool Usage in EMI Lesson Planning*

AI Tool	Never	Rarely	Sometimes	Often	Always	Total Responses for Tool
Nearpod	23	2	0	0	0	25
Gradescope	22	3	0	0	0	25
Grammarly	8	0	9	3	0	20

Figure 3.20: *Frequency of AI Tool Usage in EMI Lesson*



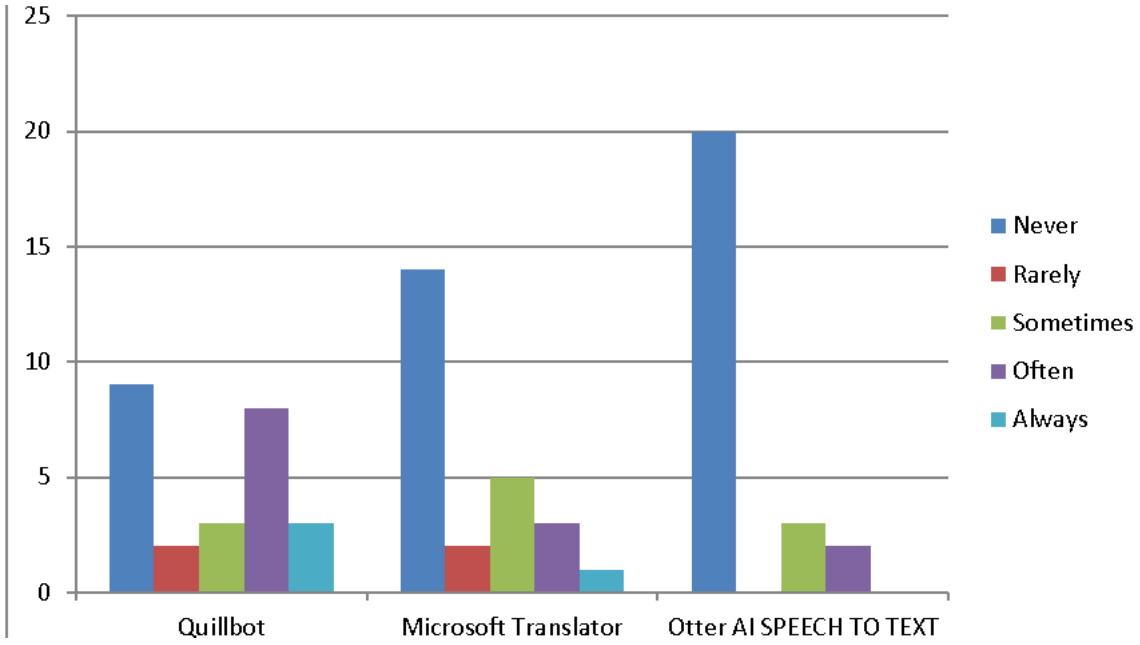
When looking more closely at the table and figure 3.20 that was shown, the table gives very clear information about how things are used. 23 of the 25 people who answered said they "Never" use Nearpod. The other two said they "Rarely" use it, but none of them said they "Sometimes," "Often," or "Always" use it. Similarly, Gradescope isn't used by many people—22 of the 25 people who participated said they never or rarely used it, and none of the higher frequency groups said they used it at all. Grammarly, on the other hand, it had a more varied and higher usage rate among its 20 respondents: 8 said they "Never" used it, but 9 said they used it "Sometimes," and 3 said they used it "Often." No one said they "Rarely" or "Always" used it. The data in this table gives a clear and accurate picture of how these specific AI tools are currently being used in EMI training.

The data clearly shows that people in EMI lessons don't use Nearpod or Gradescope very often; in fact, many of them said they "Never" used them. This means that these trainers may not be aware of, interested in, or able to access these tools. Grammarly, on the other hand, it has a wider range of users but a much higher usage rate. Only 8 of the participants said they "Never" use it, but 12 said they use it "Sometimes" or "Often," which shows that a lot of them use it regularly in their training. This shows that Grammarly is the most popular of these AI tools. This is probably because it can be used in real-life language-focused EMI situations.

Table 3.21*: Frequency of AI Tool Usage in EMI Lesson Planning*

AI Tool	Never	Rarely	Sometimes	Often	Always	Total Responses for Tool
Quillbot	9	2	3	8	3	25
Microsoft Translator	14	2	5	3	1	25
Otter AI SPEECH TO TEXT	20	0	3	2	0	20

Figure3.21: *Frequency of AI Tool Usage in EMI Lesson Planning*



If you look closely at the information in table and chart 3.21, you can see clear trends of adoption. With 8 participants saying they use Quillbot "Often" and 3 saying they use it "Always," it's clear that a lot of the 25 people who answered the survey use it regularly as part of their lesson planning. But 9 of the people who answered still said they "Never" used it. Microsoft Translator sees that most people (14 out of 25) say they "Never" use it, but some

do use it "Sometimes" (5) or "Often" (3), which suggests that it has a niche but isn't widely used. Otter AI SPEECH TO TEXT is the least used tool. 20 respondents said they "Never" use it, showing that it wasn't even on the list of tools that participants used when planning their EMI lessons.

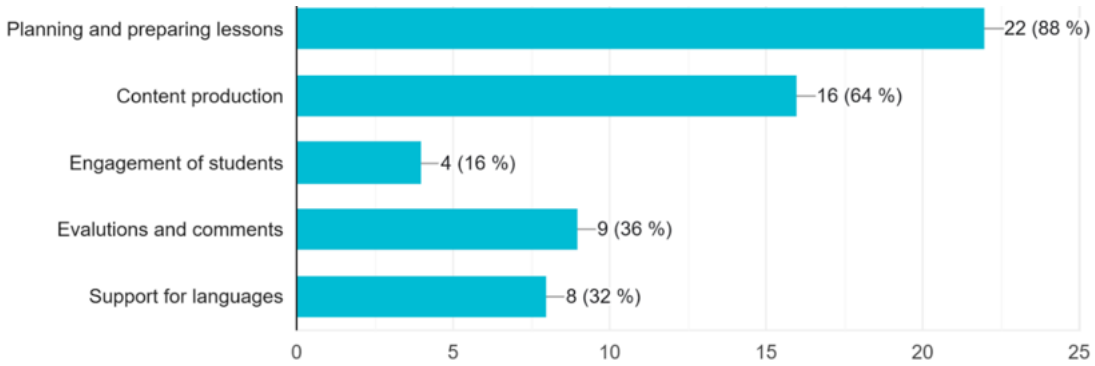
To put it simply, these results show that some teachers are using certain AI tools more than others when planning EMI lessons (electronic modified instruction). It looks like general-purpose writing and rewriting tools like Quillbot are becoming more popular. However, specialized tools like Microsoft Translator and especially Otter AI SPEECH TO TEXT aren't as well integrated into their processes. For example, this could mean that teachers find tools that help them create and improve material more useful right away than tools that focus on translation or transcription when they are planning their lessons. The data shows that, despite the possible benefits, many specialized AI tools are not yet widely used in Algerian EMI teaching.

2_ Which of the following areas has your EMI teaching benefited from AI tools? (check all that apply)

Table 3.22: *Areas of EMI Teaching Enhanced by AI Tools*

Area of Benefit	Frequency	Percentage%
Planning and preparing lessons	22	88%
Content production	16	64%
Evaluations and comments	9	36%
Support for languages	8	32%
Engagement of students	4	16%

Figure 3.22: *Areas of EMI Teaching Enhanced by AI Tools*



By looking closely at the chart and table 3.22, we can see that most people think AI tools are most useful for "planning and preparing lessons." In fact, 22 people, or 88% of the total, said this was an area that could use improvement. This is followed by "Content

production," which 16 people (64%) say AI has made a big difference in. Improvements in "Evaluations and comments" (9 participants, 36%) and "Support for languages" (8 participants, 32%) are not as noticeable, but they are still there. "Engaging students" was the area that people thought AI tools would improve the least, with only 4 people (or 16%) putting it forward.

In short, the data strongly suggests that teachers mostly use and value AI tools for their usefulness in the basic and preparatory parts of EMI teaching, especially when planning lessons and coming up with new material. AI can also help with testing and language learning, but it doesn't seem to have as much of an effect on students' direct involvement. This means that the current use of AI in EMI in Algeria is more about making teachers' jobs easier and making sure that teaching tools are as good as they can be, rather than directly encouraging student participation or interaction in the classroom.

3_What are the main advantages of incorporating AI tools into your EMI instructions?

Example of Initial Coding from questionnaire

Table 3.23*: Coding Example*

Data Extract P4	Initial Code
" Enhances teaching efficiency and learning outcomes... personalized learning, instant feedback "	Personalization, Feedback, Time-saving

Theme 1 Time-Saving and Efficiency

The main idea that came up was how AI integration can save time. Most participants stressed that AI greatly decreases the time needed for chores like grading, planning lessons, and making materials. This frees up teachers' time to focus on educational conversations and getting students involved in the class; for example, Participant 7 said: “Saves time by automating routine tasks like grading.”

Theme 2 Personalized Learning

Participants talked about how AI can help with differentiated teaching. Tools that change based on each student's language skills, learning speed, and success data make learning more personalized and effective. For example, participant 4 stated “AI adapts materials to each student’s language proficiency and learning pace.”.

Theme 3 Instant Feedback and Assessment

Several participants noted the importance of immediate feedback provided by AI tools such as grammar checkers and assessment platforms. Real-time error correction supports language acquisition by reinforcing correct usage patterns. Participant 4 mentioned "Students receive instant grammar, vocabulary, and writing suggestions."

4_What difficulties do you face when utilizing AI tools in EMI?

Example of Initial Coding from questionnaire

Table 3.24: *Coding Example*

Data Extract P7	Initial Code
" Limited understanding of AI tools by teachers and students"	Lack of training, limited awareness

Theme 1 Technical and Access-Related Issues

Numerous participants encountered technological obstacles that impeded the utilization of AI tools in EMI environments. Participant 17 observed that "technical issues may occur, such as internet connectivity problems or software malfunctions," which impede learning. Some individuals highlighted the constraints of the complimentary versions of tools, with Participant 2 asserting, "Utilizing the free version of AI tools is futile." These limitations diminish the trustworthiness and accessibility of AI in educational settings, particularly in under-resourced environments.

Theme 2 Language and Content Misalignment

Many responses reflected concerns about AI's inability to align with academic or subject-specific language. Participant 15 remarked that "AI tools can be optimized for general English, not academic or subject-specific language," making them less useful in EMI. Similarly, Participant 6 mentioned that "AI tools may not always align with curriculum objectives," affecting their instructional value. These misalignments limit AI's relevance and applicability in content-rich environments.

Theme 3 Human-Centric Concerns

Participants emphasized that AI may reduce meaningful human interaction in learning environments. Participant 12 pointed out the "possible reduction in human interaction and engagement," a concern echoed by others who noted that AI use can hinder critical thinking. Participant 3 observed that AI creates "overreliance by students, which can

hinder genuine learning.” These concerns highlight the importance of balancing AI support with human-led instruction.

5_What recommendations do you regarding the role AI tools to enhance EMI implementation in Higher education?

Example of Initial Coding from questionnaire

Table 3.25: *Coding Example*

Data Extract P6	Initial Code
“Offer regular professional development workshops on AI integration into EMI classrooms.”	Faculty AI training

Theme 1 Language Enhancement through AI

Numerous participants underscored the significance of AI tools in enhancing English language proficiency, a critical obstacle in EMI environments. Applications such as Grammarly, ChatGPT, and ELSA Speak were often referenced for their efficacy in improving writing, speaking, and understanding abilities. Participant 1 remarked, “The majority of students in my class exhibit inadequate English language proficiency,” underscoring the necessity for assistance. Participant 3 advised to "concentrate on AI-assisted language tools to enhance writing and speaking abilities," while Participant 22 noted that "AI can assist through translation and grammar checkers." These discoveries highlight the significance of AI in language development within EMI contexts.

Theme 2 Faculty Development & Training

Another significant subject was the training of instructors to proficiently incorporate AI in EMI classrooms. Several participants advocated for systematic, continuous professional growth. Participant 6 proposed, “Conduct regular professional development workshops on AI integration in EMI classrooms.” Participant 7 asserted the necessity of "comprehensive training for teachers on AI tools," whereas Participant 2 highlighted the importance of "teachers updating their knowledge regarding AI." These ideas emphasize the necessity of enabling faculty to utilize AI in a responsible and innovative manner.

Theme 3 Ethical Use and Governance

The ethical implications of AI in education were raised frequently, with calls for clear policies and awareness. Participants expressed concerns about privacy, plagiarism, and

responsible use. As Participant 9 advised, “Ensure data privacy and ethical use of AI,” and Participant 6 echoed this by calling to, “Raise awareness among students and staff about ethical use, plagiarism risks, and responsible AI use.” Furthermore, Participant 16 emphasized the need to, “establish ethical and privacy guidelines.” These concerns reflect a critical awareness of the risks associated with unchecked AI use.

Theme 4 Institutional Support & Investment

Participants widely agreed that successful AI integration depends on institutional support, including funding, infrastructure, and partnerships. Universities were urged to invest in systems and provide access to necessary tools. Participant 13 stated, “Invest in infrastructure to support reliable AI technologies,” and Participant 17 emphasized that, “The University should pay for AI tools and make them available.” Participant 14 proposed, “To buy some IT tools or to make agreement with the IT tools companies,” showing that financial and strategic backing is essential for sustainable implementation.

3.2. Interview Analysis

The interview was conducted with a teacher at the faculty of Natural and Life Sciences at BBA University. The interview was analysed using thematic analysis.

Theme 1: Lack of Formal Training in AI and English

The participant highlighted that there is a significant gap for official training in both AI technologies and English language abilities. This limitation makes them less sure of themselves and their ability to convey content well in an EMI setting:

"No, I don't have a training in English... We really lack specialised training in AI and its use."

People said that most of their information about AI came from social networks or random research. This lack of organized training makes it harder to understand how AI can be used in education.

Theme 2: AI as a Tool for Academic and Pedagogical Enhancement

The participant uses AI tools to help with teaching and study, even if they haven't had much training in them. Some of the tools that were discussed are Keyboard Bot, ChatGPT, Deep Writer, Gemini, and DeepSeek. These are used to help students understand textbooks more effectively, make their writing better, and make lesson plans:

"We use, for example, Deep Writer... to improve the reading of the text in English."

"AI has become an indispensable tool, either for research or for teaching... [to] generate sliders, PowerPoints..."

This theme emphasizes how useful and easy AI may seem, even when institutions lack support for it.

Theme 3: Barriers to Effective AI Integration

The participant identified several technical and organizational issues that make it hard for BBA University to completely embrace AI. Some of these are slow internet connections, weak tech platforms, and limited access to AI resources:

"From 11 to 11.30 all the operations are blocked... the internet is weak, and the platforms are weak."

These problems not only make it hard to do tasks in the classroom, but they also make it problematic for staff to make materials with AI or take part in online training.

Theme 4: Support and Training Needs for Sustainable EMI-AI Integration

The participant said that structured training programs made for education and research settings were needed to get the most possible from AI. He talked about training opportunities in other countries and emphasized the need for local strategies to develop AI skills:

"There is a training every 4 days... about the agents of AI in scientific research."

"We need to train people so that they can train others."

Certain individuals really want institutions to put money into teaching people about AI, both in terms of how it works and how to teach it.

Theme 5: Aspirational Outlook on AI's Role in Higher Education

Despite it facing issues, the participant had a positive outlook on AI's role in EMI. He sees a future where AI is deeply integrated into language learning, curriculum design, and study production, as long as a few significant institutional issues are fixed:

"We will start, as we say, when we have a situation like this where we need to communicate, we communicate."

"AI can be used in robotics and other areas... this is a vague idea, but we need to teach AI."

This person was interviewed, and their thoughts are based on real-life experience and a clear understanding of the positive and negative aspects of AI in Algerian higher education right now.

3.3. Discussion

Teachers' Perceptions and Utilization of AI in EMI

Most of the people who took part agreed that AI tools like ChatGPT, Grammarly, and DeepSeek can help with planning lessons, getting comments from students, and helping with language. Respondents, especially those in STEM fields, said they used AI a lot, claiming efficiency and help with teaching as the main reasons. These results back up what Singh Gill et al. (2023) said about how people are relying more and more on ChatGPT to write essays, rephrase language, and summarize material.

However, several teachers made it clear that AI should not replace human teachers but rather work with them. Concerns were made about AI's inability to teach empathy, moral reasoning, and adaptability in the classroom, which are skills that can only be provided by human teachers. This careful approach is like what Kikuchi (2024) found when he looked at how Japanese teachers who used generative AI tools felt.

Perceived Benefits of AI Integration

Teachers said that AI had many benefits for education, such as making lesson planning more efficient, better differentiating for students of different abilities, and more engaged students. Notably, 68% of those who participated agreed that AI made feedback and evaluation better, and 64% said that video support and translation features made content delivery better.

They agree with what Jiang (2023) and Wang et al. (2024) found, which is that AI helps students understand subjects better and learn languages faster in EMI settings. Key strengths were found to be personalized comments and real-time language help.

As shown by the results of the semi structured questionnaire and the interview regarding teacher's perspectives on utilizing artificial intelligence for effective EMI implementation in Higher Education, teachers of the different faculties at Bordj Bou Arreridj university demonstrate a strong yearning to integrate AI tools in their teaching, additionally a huge number of participants believe that AI should be integrated. This study shows that Bordj Bou Arreridj EMI teachers think AI is very helpful for planning lessons and making content, with ChatGPT becoming the most popular tool. Adoption is higher in STEM fields, especially computer science, because students are better at using technology and the fields are more aligned.

The most important part of the study was finding out what teachers thought. They all agreed that there needed to be focused training, clear institutional policies, and balanced integration strategies. People who took part said that AI should help teach, not replace humans, and they asked for moral standards to stop misuse. These suggestions not only help make EMI better, but they also help TEFL in general by showing how AI can improve teaching English to people who aren't native speakers without hurting the quality of the teaching.

When compared to other countries, Algerian EMI teachers have similar ideas about how useful AI is for teaching, but they must deal with different culture and technological issues. Global studies (e.g., Galloway & Rose, 2021) show that AI is widely used, but this study shows that problems like high costs and not knowing how to use it are still big problems in Algerian colleges.

Also, Bannister et al. (2023) say that generative AI can change EMI, but it is still not used enough in settings with few resources, which is something that this study's results show.

3.4. Recommendations and Interpretations

Based on the results that were conducted from the interview and the questionnaire

We suggest that:

- Implement professional development for EMI teachers that is focused on AI.
- Create AI integration plans for each faculty member.
- Integrate and make the internet better in all the faculties and provide rooms specifically for students and teachers.
- Support AI to be used as a teaching tool instead of a replacement.

3.5. Further Research

In the future, this study could be expanded by:

- including student opinions to find out how students feel about EMI with AI help.
- Comparative studies of universities in Algeria or elsewhere would help make results broader and show how institutions are different.
- Long-term investigations could look at how the use of AI changes over time in EMI teaching. Quantitative studies could also find out how AI affects student outcomes, while studies that focus on fields could show unique problems and chances in those fields.

- Finally, more research should be done in the future to see how well AI-focused teacher training works and to look at ethics and policy issues related to AI in EMI.

Conclusion

This part was all about looking at and talking about the data that was gathered using the investigation's instruments. The data was looked at in tables and relative circles, and the results were talked about. In this last part, the researcher has tried to give a list of suggestions that might help us better understand what teachers knowing about integration of Artificial intelligence for effective English-medium instruction.

GENERAL CONCLUSION

The study conducted at Mohamed El Bachir Ibrahimi University focused on exploring teachers' perspectives on leveraging Artificial Intelligence for effective English-Medium Instruction implementation in higher education. think about using Artificial Intelligence (AI) in English-Medium Instruction (EMI). Additionally, it aims to know how teachers think about and use AI tools in their EMI work, what kinds of tools they use, and what benefits and problems they see with mixing these tools. The study also seeks to look at the institutional and pedagogical variables that affect AI adoption and get teachers' ideas on how to enhance AI-supported EMI better in higher education in Algeria. The study used a qualitative research method using two research instrumentations which are semi-structured questionnaire and interviews to collect data from teachers. The results showed that even though EMI is still growing as part of Algeria's plan to change higher education, many teachers are still having trouble because they don't speak the language well enough or have enough training. They also don't have enough institutional support. At the same time, teachers are becoming more aware that AI tools like ChatGPT, Grammarly, and other smart platforms can help them plan lessons, help students with their language skills, make content, and grade students. A lot of teachers wanted to use AI, especially in STEM fields. But there were also worries about how to use AI in a moral way, making sure teachers are ready for technology, and relying too much on AI. Teachers stressed the need for specialized training, clear rules for the school, and methods that focus on people when integrating AI. These findings add to the field of TEFL by showing how AI can improve EMI without lowering the level of teaching. Overall, the study shows how important it is to give teachers the resources, information, and help they need to use AI in ways that improve language learning and encourage effective EMI in higher education in Algeria.

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Appendix

Questionnaire:

Exploring Teachers' Perspectives on Leveraging Artificial Intelligence for Effective EMI Implementation in Higher Education استكشاف توظيف الذكاء الاصطناعي لتعزيز التدريس باللغة الانشاف وجهات نظر أساتذة التخصصات المختلفة حول توظيف الذكاء الاصطناعي لتعزيز التدريس باللغة الانجليزية في مؤسسات التعليم العالي

السادة المشاركون الأعزاء،

يهدف هذا الاستبيان إلى استكشاف وجهات نظر وممارسات أساتذة التخصصات فيما يتعلق باستخدام أدوات الذكاء الاصطناعي لتعزيز تدريس المحتوى عبر اللغة الإنجليزية في التعليم العالي. ستظل إجاباتكم مجهولة الهوية، ولن تُستخدم إلا لأغراض البحث العلمي فقط.

نرجو منكم الإجابة عن الأسئلة بناءً على خبراتكم وانطباعاتك.

نقدّر مساهمتكم القيمة جزيل الشكر.

As part of an academic study exploring content instructors' perspectives and practices regarding the use of Artificial Intelligence (AI) to enhance English-medium instruction (EMI) in higher education, I kindly invite you to participate by completing the following questionnaire

Your input is highly valuable and will contribute to reliable and meaningful research results. All responses will remain anonymous and will be used solely for academic purposes.

You may respond in either Arabic or English, whichever you prefer.

Section 1: Personal and Academic Information:

1_What is your academic discipline or Faculty?

☐ Natural and Life Sciences, Earth and Universe Sciences علوم الطبيعة والحياة وعلوم الارض والكون
☐ Medical Sciences العلوم الطبية
☐ Law and political sciences الحقوق والعلوم السياسية
☐ Science and Technology العلوم والتكنولوجيا
☐ Management, Commerce and Economics العلوم الاقتصادية وعلوم التسيير
☐ Humanities & Social Sciences العلوم الانسانية
☐ Mathematics and computer science الرياضيات والاعلام الالي
☐ Letters and Languages الآداب واللغات
☐ Other (Please specify) _____

2. Name the Department where you are affiliated. القسم الحالي الذي تنتمي اليه

_____

_____

3. المؤهل العلمي / Highest Degree obtained

- Master ☐
- Magister ☐
- PHD ☐

4. What is your academic rank? رتبتك الحالية

✓ ☐ Part-time teacher استاذ مؤقت
✓ ☐ Doctoral Student طالب دكتوراه بدوام جزئي
✓ ☐ Assistant professor استاذ مساعد
✓ ☐ Associate professor استاذ محاضر
✓ ☐ Full professor استاذ التعليم العالي
✓ ☐ Other (Please specify) _____

5.What is your teaching experience in EMI (English-Medium Instruction)? خبرتك في التدريس باللغة الانجليزية

✓ ☐ Still a trainee لازلت متربصا
✓ ☐ Less than one-year اقل من سنة
✓ ☐ 1-3 years بين 1-3 سنوات
✓ ☐ 4-6 years بين 4 و 6 سنوات
✓ ☐ اكثر من 6 سنوات

6_ What is your level of familiarity with AI in education? ماهو مستوى المامك بالذكاء الاصطناعي في التدريس؟

- ✓ ☐ Not familiar at all
- ✓ ☐ Somewhat familiar
- ✓ ☐ Moderately familiar
- ✓ ☐ Very familiar

7_ Have you taught courses using English as the medium of instruction (EMI)? هل قمت بتدريس مقاييس باستخدام اللغة الإنجليزية

- ✓ Yes ☐
- ✓ No ☐

8.If yes, how long have you been teaching courses using EMI? إذا كانت الاجابة نعم حدد المدة

_____

_____

9_ Do you use AI tools in your teaching? هل تستعمل الذكاء الاصطناعي في التدريس؟

- ✓ Yes ☐
- ✓ No ☐

10_If yes, what AI tools do you use in your teaching?

_____

_____

_____

Section 02: Perceptions of AI in EMI Implementation تصورات الاساتذة حول استعمال الذكاء الاصطناعي في دعم التدريس باللغة الإنجليزية

To what extent do you agree with the following statements about AI in EMI? (Use a Likert scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree)

1_AI enhances lesson planning efficiency in EMI. الذكاء الاصطناعي يعزز كفاءة تحضير الدروس وتدريسها باللغة الانجليزية

☐1 ☐2 ☐3 ☐4 ☐5

2_AI helps adapt lesson materials to different student proficiency levels. الذكاء الاصطناعي يساعد على تكييف مواد الدروس مع مستويات كفاءة الطلاب المختلفة عند التدريس باللغة الإنجليزية

☐1 ☐2 ☐3 ☐4 ☐5

3_AI tools improve student engagement and interaction in EMI classrooms. تعمل أدوات الذكاء الاصطناعي على تحسين مشاركة الطلاب وتفاعلهم عند التدريس باللغة الانجليزية

☐1 ☐2 ☐3 ☐4 ☐5

4_AI provides useful feedback and assessment support for EMI students. يوفر الذكاء الاصطناعي دعمًا مفيدًا للتقييم والملاحظات للطلاب لتعزيز التدريس باللغة الانجليزية

☐1 ☐2 ☐3 ☐4 ☐5

5_AI may replace some traditional teacher roles in EMI. يمكن ان يعوض الذكاء الاصطناعي بعض ادوار الاستاذ التقليدية

☐1 ☐2 ☐3 ☐4 ☐5

6_If yes, please specify. إذا كانت الاجابة نعم يرجى التحديد

_____

_____

7_What are the main challenges of using AI in EMI? (Check all that apply) ما هي التحديات الرئيسية لاستخدام الذكاء الاصطناعي في دعم التدريس باللغة الانجليزية (يمكن اختيار اكثر من اجابة) ؟

☐Lack of training on AI tools نقص التكرين في استعمال ادوات الذكاء الاصطناعي

☐Resistance to technology adoption مقاومة اعتماد التكنولوجيا في التدريس

☐Limited availability of AI tools in my institution توفر محدود لأدوات الذكاء الاصطناعي في مؤسستي

☐Concerns about AI accuracy and bias المخاوف بشأن دقة الذكاء الاصطناعي وتحيزه

☐Other (Please specify) _____

Section 3: AI Tools Used in EMI Lesson Planning استعمال الذكاء الاصطناعي في تحضير ودعم التدريس باللغة الانجليزية

1_How frequently do you use the following AI tools in your EMI lesson planning?

(Use a Likert scale: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always)

AI Tool Name	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Always (5)
ChatGPT	☐	☐	☐	☐	☐
Google Gemini (Bard)	☐	☐	☐	☐	☐
Eduaide.AI	☐	☐	☐	☐	☐
Canva for Education	☐	☐	☐	☐	☐
Piktochart	☐	☐	☐	☐	☐
Prezi	☐	☐	☐	☐	☐
Kahoot	☐	☐	☐	☐	☐
Quizizz	☐	☐	☐	☐	☐
Nearpod	☐	☐	☐	☐	☐
Grade scope	☐	☐	☐	☐	☐
Grammarly	☐	☐	☐	☐	☐
Quill Bot	☐	☐	☐	☐	☐
Microsoft Translator	☐	☐	☐	☐	☐
Otter.ai (Speech-to-Text)	☐	☐	☐	☐	☐

2_If there are other AI tools you use, please specify:

_____

_____

3_which of the following areas has your EMI teaching benefited from AI tools? (check all that apply) _ حدد المجالات التي استفدت فيها من استعمال الذكاء الاصطناعي في تعزيز التدريس باللغة الانجليزية؟

- ☐ Planning and preparing lessons
- ☐ Content production
- ☐ Engagement of students
- ☐ Evaluations and comments
- ☐ Support for languages
- ☐ Other (please specify) _____

4_What are the main advantages of incorporating AI tools into your EMI instructions? ماهي اهم مزايا استعمال الذكاء الاصطناعي في دعم التخطيط للتدريس باللغة الانجليزية_____
_____
_____
_____
_____
_____

5_What difficulties do you face when utilizing AI tools in EMI? ماهي الصعوبات التي تواجهها في استعمال ادوات الذكاء الاصطناعي لدعم التدريس باللغة الانجليزية؟_____
_____
_____
_____
_____
_____

6_What recommendations do you consider regarding the role AI tools to enhance EMI implementation in Higher education? ماهي المقترحات التي تقدمها بخصوص استعمال الذكاء الاصطناعي في تعزيز التدريس باللغة الانجليزية في مؤسسات التعليم العالي_____
_____
_____
_____

Interview

Participant Consent Form

Title of Research Study

Exploring Teachers' Perspectives on Leveraging Artificial Intelligence for Effective English-Medium Instruction (EMI) Implementation in Higher Education: Case of BBA University, Algeria

Researchers

[Belkacem Idir. Rouabah Wail. Aissaoui Said]
[Faculty of letters and foreign languages]
[Idir.belkacem@univ-bba.dz]

Introduction

You are invited to take part in a research study exploring how teachers perceive the integration of Artificial Intelligence (AI) to support English-Medium Instruction (EMI) at BBA University. The purpose of this form is to provide you with information about the study and to obtain your consent to participate.

Purpose of the Study

This study aims to investigate how AI tools are currently being used by faculty members, assess their potential in improving EMI, and understand the training and support needs of teachers and students for effective AI integration in higher education.

Participation

Your participation is entirely voluntary. You may choose not to answer any question, and you may withdraw at any time without penalty or loss of benefits.

Procedures

If you agree to participate, you will be asked to take part in a semi-structured interview lasting approximately 30–45 minutes. The interview will cover your experiences with EMI, your current use of AI tools (if any), your perceptions of AI's potential in EMI, and your recommendations for future improvements.

Confidentiality

Your responses will be kept confidential. No personal identifiers will be included in any reports or publications. All data will be stored securely and used solely for academic purposes. Audio recordings (if applicable) will be transcribed and anonymized.

Risks and Benefits

There are no known risks associated with participating in this study. While you may not benefit directly, your insights could contribute to enhancing EMI practices at BBA University and other similar institutions.

Contact Information

If you have any questions about the study, you may contact the researcher at:
[Idir.belkacem@univ-bba.dz]

If you have questions about your rights as a participant, you may contact the university's ethics committee.

Consent Statement

I have read and understood the information provided above. I understand that my participation is voluntary and that I may withdraw at any time without giving a reason. I agree to take part in this study.

Participant's Name:
Signature:
Date: 23/04/2025

Researcher's Name:
Signature:
Date:

Introduction

I appreciate your time. I'm looking into how AI can assist English-Medium Instruction (EMI) at BBA University. Your perspectives are important, and your answers will be kept private.

1. Background and Experience

- What challenges do you face when teaching in English at BBA University?

2. Current AI Use

- What are the different AI tools that you use? If yes, do you use any AI tools relevant to your discipline?

3. AI's Potential in EMI

- How could AI improve students' English language skills (e.g., reading, writing, speaking) in an EMIcontext?

4. Benefits and Challenges

- What are the most significant benefits of using AI for EMI, and what challenges (technical, ethical, orpedagogical) do you foresee?

5. Training and Support

- What training or support would teachers and students need to effectively integrate AI into EMI?

6. Future Outlook

- What role should AI play in EMI at BBA University in the next 5 years, and what steps should theuniversity take to achieve this?

ملخص

تستكشف هذه الدراسة وجهات نظر أساتذة الجامعات حول الاستفادة من الذكاء الاصطناعي لتنفيذ تعليم فعال باللغة الإنجليزية في التعليم العالي. في الجزائر، مع التركيز على جامعة BBA. في إطار الجهود المبذولة لتحسين وتدويل التعليم النمو بشكل متزايد. ومع ذلك، يواجه العديد من المعلمين صعوبات في تطبيقه لأنهم لا يعرفون EMI في الجزائر، تواصل كيفية استخدامه أو لا يتحدثون الإنجليزية بشكل جيد بما فيه الكفاية. في الوقت نفسه، تقوم أدوات الذكاء الاصطناعي مثل وغيرها من الأنظمة الذكية بتحويل التعليم العالي بسرعة من خلال المساعدة في أشياء مثل Grammarlyو ChatGPT في EMI تخطيط الدروس، وتعلم اللغات، وإنشاء المحتوى، والاختبارات. لكن القليل معروف عن كيفية فهم معلمي الجزائر واستخدامهم لهذه الأدوات في الحياة الواقعية. تم استخدام نهج دراسة حالة نوعية استكشافية قائم على المنظور التفسيري في هذه الدراسة لسد هذه الفجوة. تم استخدام استبيان شبه منظم تم ملؤه من قبل 25 معلمًا في برامج التعليم باللغة الإنجليزية، ومقابلة شبه منظمة مع مشارك واحد لجمع البيانات. تم تحليل البيانات باستخدام التحليل الموضوعي للعثور على الموضوعات المشتركة حول كيفية استخدام الذكاء الاصطناعي، وما هي فوائده وصعوباته كما يُنظر إليها، وكيف تدعمه المؤسسات. تُظهر النتائج الرئيسية أن العديد من المدربين قد لاحظوا كيف يمكن للذكاء الاصطناعي تحسين التعليم باللغة الإنجليزية في التعليم العالي، لكنهم يشعرون أيضًا بالقلق بشأن نقص مهاراتهم الرقمية، والتدريب، والمخاوف الأخلاقية. أبرز المشاركون أهمية التطوير المهني، والاستثمار المؤسسي، والاستراتيجيات المناسبة للموقف لدعم استخدام الذكاء الاصطناعي في تدريس EMI. تضيف الدراسة إلى مجال تدريس اللغة الإنجليزية كلغة أجنبية (TEFL) من خلال إظهار كيف يمكن لأدوات الذكاء الاصطناعي أن تساعد في تعليم اللغة والمحتوى في الأماكن التي لا يفهم فيها الناس اللغة الإنجليزية كلغتهم الأولى. كما يقدم اقتراحات استراتيجية وتدريب لجعل ممارسات التعليم القائم على اللغة الإنجليزية في الجامعات الجزائرية أكثر فعالية وديمومة.

Résumé

Cette étude explore les perspectives des enseignants universitaires sur l'utilisation de l'intelligence artificielle pour la mise en œuvre efficace de l'enseignement en anglais dans l'enseignement supérieur. En Algérie, avec un accent sur l'Université BBA. Dans le cadre des efforts pour améliorer et mondialiser l'éducation en Algérie, l'EMI continue de croître de plus en plus. Cependant, de nombreux enseignants ont des difficultés à l'appliquer car ils ne savent pas comment l'utiliser ou ne parlent pas suffisamment bien l'anglais. En même temps, les outils d'IA comme ChatGPT, Grammarly et d'autres systèmes intelligents transforment rapidement l'enseignement supérieur en aidant à des tâches telles que la planification des cours, l'apprentissage des langues, la création de contenu et les tests. Mais on sait peu de choses sur la manière dont les enseignants d'EMI en Algérie comprennent et utilisent ces outils dans la vie réelle. Une approche d'étude de cas qualitative exploratoire basée sur le paradigme interprétatif est utilisée dans cette étude pour combler cette lacune. Un questionnaire semi-structuré rempli par 25 enseignants d'EMI et une interview semi-structurée avec un participant ont été utilisés pour collecter des données. Les données ont été analysées à l'aide d'une analyse thématique pour identifier les thèmes communs concernant l'utilisation de l'IA, les avantages et les difficultés perçus, ainsi que le soutien des institutions. Les résultats clés montrent que de nombreux instructeurs ont remarqué comment l'IA pourrait améliorer l'EMI, mais ils s'inquiètent également de leur manque de compétences numériques, de formation et de préoccupations éthiques. Les participants ont souligné l'importance du développement professionnel, de l'investissement institutionnel et des stratégies adaptées à la situation pour soutenir l'utilisation de l'IA dans l'enseignement EMI. L'étude contribue au domaine de l'enseignement de l'anglais langue étrangère (TEFL) en montrant comment les outils d'IA peuvent aider à enseigner la langue et le contenu dans des endroits où les gens ne comprennent pas l'anglais comme leur langue maternelle. Il propose également des suggestions de stratégie et de formation pour rendre les pratiques de l'EMI dans les universités algériennes plus efficaces et durables.

2020 ماي 27

*ملحق بالقرار رقم ....1082.... المؤرخ في .....

الذي يحدد القواعد المتعلقة بالوقاية من السرقة العلمية ومكافحتها

1

الجمهورية الجزائرية الديمقراطية الشعبية
وزارة التعليم العالي والبحث العلمي

مؤسسة التعليم العالي والبحث العلمي:

نموذج التصريح الشرفي
الخاص بالالتزام بقواعد النزاهة العلمية لإنجاز بحث

أنا المعضي أسفله،

السيد(ة): بلقاسم ايدير ..... الصفة: طالب، أستاذ، باحث ..طالب.....

الحامل(ة) لبطاقة التعريف الوطنية رقم: 10141727 والصادرة بتاريخ 2016/10/18

المسجل(ة) بكلية / معهد الآداب واللغات ..... قسم اللغة الإنجليزية

والمكلف(ة) بإنجاز أعمال بحث (مذكرة التخرج، مذكرة ماستر، مذكرة ماجستير، أطروحة دكتوراه).

عنوانها: Exploring Teachers' Perspectives On Leveraging Artificial Intelligence for Effective EMI Implentation In Higher Education: BBA Univ

أصرح بشرفي أني ألتزم بمراعاة المعايير العلمية والمنهجية ومعايير الأخلاقيات المهنية والنزاهة الأكاديمية المطلوبة في إنجاز البحث المذكور أعلاه.

التاريخ: 03 JUIL 2025

توقيع المعني (ة)

توقيع السيد(ة)

بطاقة التعريف رقم:

بتاريخ:

مصادق عليه

رئيس المجلس الشعبي البلدي

رئيس المجلس الشعبي البلدي

وبتفويض منه رئيس فرع البلدية

* الملحق بالقرار رقم ...1082... المؤرخ في ... 27 ماي 2020 .....

الذي يحدد القواعد المتعلقة بالوقاية من السرقة العلمية ومكافحتها

الجمهورية الجزائرية الديمقراطية الشعبية

وزارة التعليم العالي والبحث العلمي

مؤسسة التعليم العالي والبحث العلمي:

نموذج التصريح الشرفي

الخاص بالالتزام بقواعد النزاهة العلمية لإنجاز بحث

أنا الممضي أسفله،

السيد(ة): عيساوي السعيد ..... الصفة: طالب، أستاذ، باحث ..... طالب .....

الحامل(ة) لبطاقة التعريف الوطنية رقم: 141068278 الصادرة بتاريخ 2021/03/21 البرج

المسجل(ة) بكلية / معهد الآداب واللغات قسم اللغة الانجليزية

والمكلف(ة) بإنجاز أعمال بحث (مذكرة التخرج، مذكرة ماستر، مذكرة ماجستير، أطروحة دكتوراه)،

عنوانها: Exploring Teachers Perspectives on leveraging A.I for effective English Medium Instruction (EMI) implentation in Higher

- أصرح بشرفي أني ألتزم بمراعاة المعايير العلمية والمنهجية ومعايير الأخلاقيات المهنية والنزاهة الأكاديمية المطلوبة في إنجاز البحث المذكور أعلاه .

التاريخ: 08/07/2025

توقيع المعني (ة)

توقيع السعد:

بطاقة التعريف رقم: 141068278

بتاريخ: 08 جويلية 2025

مصادق عليه

برج بوعريريج، في:

رئيس المجلس الشعبي البلدي

رئيس المجلس الشعبي البلدي

رئيس المجلس الشعبي للإدارة الإقليمية

رئيس الدائرة

المليكة عبد الرزاق

2020 ط د 27

* ملحق بالقرار رقم ....1082.... المؤرخ في .....

الذي يحدد القواعد المتعلقة بالوقاية من السرقة العلمية ومكافحتها

1

الجمهورية الجزائرية الديمقراطية الشعبية
وزارة التعليم العالي والبحث العلمي

مؤسسة التعليم العالي والبحث العلمي:

نموذج التصريح الشرفي
الخاص بالالتزام بقواعد النزاهة العلمية لإنجاز بحث

أنا الممضي أسفله،

السيد(ة): ..... الصفة: طالب، أستاذ، باحث .....

الحامل(ة) لبطاقة التعريف الوطنية رقم: ..... والصادرة بتاريخ .....

المسجل(ة) بكلية / معهد ..... قسم .....

والمكلف(ة) بإنجاز أعمال بحث (مذكرة التخرج، مذكرة ماستر، مذكرة ماجستير، أطروحة دكتوراه)،

عنوانها: .....

أصرح بشرفي أني ألتزم بمراعاة المعايير العلمية والمنهجية ومعايير الأخلاقيات المهنية والنزاهة الأكاديمية المطلوبة في إنجاز البحث المذكور أعلاه.

التاريخ: .....

توقيع المعني (ة)