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Redefining Algerian Middle School EFL Teachers' Roles in the AI Era: Adaptations, Practices, and Challenges

A Dissertation Submitted in Partial Fulfilment of the Requirements for Master's Degree in Didactics

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Dedication 1

"You'll Never Walk Alone."

I was never a Liverpool fan, but these words hold all I wish to say. It is a truth that I have lived throughout my journey. Despite the road being challenging at times, I was never truly alone. This piece of creation is a tribute to those who walked with me.

To my family

You were the golden sky at the end of every storm.

You gave me love and strength when I had none.

Your unwavering belief kept me walking.

To my friends

You were the sweet silver song of the lark.

Your companionship lifted my spirit at my lowest points.

Your support made it possible to overcome each day.

To my teachers

You walked beside and ahead of me.

Your patience and wisdom lit my path.

You were there for me when my dreams were tossed and blown.

"Walk on, walk on, with hope in your heart…"

This chapter may be ending, but the journey is far from over.

I will continue to walk on, and I know it in my heart.

I will never walk alone.

Oualid Bilal Saibi

Dedication 2

I express my deepest gratitude to Allah for his guidance and blessings. This work is dedicated to my family. My beloved father, M. Benaouda, and my dear mother, S. Fatima Zohra. Your sacrifices and hard work have always been my motivation. My siblings Hiba, Yasser, and Chifaa, thank you for being there for me.

Your support and love mean the world to me.

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Abstract

This study investigates the evolving roles of Algerian middle school EFL teachers in light of the growing integration of advanced artificial intelligence (AI) technologies in education. A mixed-methods approach was adopted combining questionnaires, follow-up interviews, and classroom observations to gather data from a diverse sample of English teachers varying in region, age, teaching experience, and familiarity with AI tools. The research results and findings confirm that AI is reshaping teaching roles, shifting teachers from traditional knowledge providers to moderators and guides, and highlight major challenges such as large class sizes, limited access to digital tools, and inadequate teacher training. Nevertheless, many teachers showed interest in adopting AI and reported using it in areas like lesson planning and feedback. Additionally, successful AI integration requires targeted professional development, supportive institutional policies, and improved infrastructure. Effective use of AI in Algerian EFL classrooms depends not only on the availability of technology but also on empowering teachers through sustained training and systemic support.

Keywords: AI Integration in Language Teaching; Teachers' Roles in the AI Era; Algerian Middle School Education; Challenges Faced by Language Teachers

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List of Acronyms and Abbreviations

AI	Artificial Intelligence
AIED	Artificial Intelligence in Education
ALM	Audio-Lingual Method
CAI	Computer-Assisted Instruction
CALL	Computer-Assisted Language Learning
CLT	Communicative Language Teaching
DL	Deep Learning
EFL	English as a Foreign Language
GPS	General Problem Solver
GTM	Grammar-Translation Method
ITS	Intelligent Tutoring Systems
ML	Machine Learning
NLP	Natural Language Processing
PBL	Project-Based Learning
PEG	Project Essay Grade
PLATO	Programmed Logic for Automatic Teaching Operations
PLE	Personalized Learning Environment
TICCIT	Time-Shared Interactive Computer-Controlled Information Television
TPACK	Technological Pedagogical and Content Knowledge
UNESCO	United Nations Educational, Scientific and Cultural Organization

General Introduction

Knowledge has always played a crucial role in the development of human civilization; the way in which it is acquired, stored, and applied have continuously reshaped people's understanding of the world. Every step, from ancient oral traditions and written records to scientific reasoning and the digital age, has helped humans expand their understanding, communication, and innovation. Learning became more accessible and efficient due to many important inventions such as writing, the printing press, and the internet. These developments had one thing in common: they all required reasoning and critical thinking, i.e., they were human-driven. Thus, when Artificial Intelligence (AI) emerged as the next inevitable phase of human development, everything changed. According to Russell and Norvig, "The field of artificial intelligence, or AI, is concerned with not just understanding but also building intelligent entities—machines that can compute how to act effectively and safely in a wide variety of novel situations" (19). Unlike past tools, AI can generate, analyze, and apply knowledge on its own, even surpassing human comprehension, which made it a transformative force that revolutionized various industries such as healthcare, finance, and, most notably, education. AI brought in new perceptions and insights into how learning and teaching occur, particularly in language learning.

Since gaining independence in 1962, Algerian decision-makers have placed a high value on teaching foreign languages in general and English in particular. More recently, the 2022–2023 academic year saw the introduction of English instruction in primary schools, enabling students to start learning the language at a younger age than previously. Prior to 2022, English was taught in middle schools. And with the recent AI advancements in the EFL field globally, the new waves of change must be taken seriously, as AI has radically

transformed the learning experience.

For Algerian middle school EFL teachers, AI presents both opportunities and challenges. On one hand, AI can help with students' engagement, lesson planning, and grading, which actually saves time and energy. On the other hand, there are issues with teacher autonomy, the dangers of relying too much on technology, and the need for digital literacy training. The question, therefore, is how Algerian EFL teachers are adapting to these technological advancements and redefining their roles in the age of AI.

Despite the Algerian government's efforts to integrate technology into education, including the launch of *the National Higher School of Artificial Intelligence* in 2021 to advance AI research and innovation, limited research has explored how Algerian teachers, particularly middle school EFL teachers, are adapting to these recent technological advancements. AI has brought both new opportunities and challenges to EFL teaching. It's important to grasp how AI tools are affecting teaching methods and redefining teacher roles as they become progressively more popular in language instruction. The rapid growth of AI demands a deeper examination of how Algerian middle school EFL teachers are adjusting to these changes. Additionally, personal motivation stemmed from our own experiences as middle school teachers, as well as a profound eagerness in observing the challenges Algerian teachers face in effectively integrating AI.

This study aims to explore how Algerian middle school EFL teachers' roles are evolving in the AI Era, it also seeks to identify the adaptations that might be necessary to use AI effectively, the practices they could adopt, and the challenges they may face. Understanding how Algerian EFL teachers perceive AI is crucial to take informed actions in order to better prepare teachers for the AI era. Therefore, this study:

1) Investigates the evolving roles of Algerian middle school EFL teachers in the AI Era.

2) Sheds light on the difficulties and limitations Algerian middle school EFL face when integrating AI into EFL instruction.

3) Provides recommendations for enhancing AI adoption in EFL teaching while ensuring pedagogical effectiveness.

To achieve the study purpose, the following research questions are addressed:

1) How might the integration of AI technologies affect the roles of Algerian middle school EFL teachers?
2) What challenges could Algerian middle school EFL teachers face in adapting to use AI tools in EFL teaching?
3) How can teacher training and policy development better support the integration of AI in Algerian middle schooling EFL teaching?

As an attempt to answer the research questions, the following hypotheses are advanced:

1) The integration of AI technologies may lead to significant changes in the roles of Algerian middle school EFL teachers which require them to develop new competencies and adapt their teaching practices.
2) Algerian middle school EFL teachers may face challenges such as limited training, insufficient resources, and potential resistance to adopting AI tools, which could hinder their ability to incorporate these technologies effectively into their teaching.

3) In order to facilitate the successful integration of AI into middle school EFL teaching and enable the expansion of their roles in the classroom, targeted teacher training and policy development may improve the readiness and confidence of Algerian middle school EFL instructors in implementing AI technologies.

This study adopts a mixed-methods approach including both quantitative and qualitative research methods to provide an in depth understanding of how AI is changing the roles of EFL teachers in Algerian middle schools. The three main data collection tools are a questionnaire, follow-up interviews, and classroom observations. Each tool is aimed at addressing different aspects of the research question.

This study is composed of two chapters. The first chapter deals with AI in education, including historical background, AI applications in EFL teaching, teacher roles in AI-integrated classrooms, and pedagogical implications of AI in language education. The second chapter includes data collection and analysis. The study's results and findings are discussed in relation to their implications, limitations, and suggestions for further research

Chapter I

AI and EFL Teaching Roles

Chapter I: AI and EFL Teaching Roles

I.1. Introduction

Education plays a crucial role in shaping perspectives and providing valuable knowledge for individuals to function in a given society. As Dewey famously states, “I believe that education, therefore, is a process of living and not a preparation for future living” (2). This perspective indicates the ongoing evolution of education in response to societal shifts. Recently, the rise of AI marked the beginning of a new era, particularly in education, as AI has greatly influenced the way in which knowledge is acquired and delivered. AI refers to the ability of machines or computer systems to perform tasks that typically require human intelligence, such as learning, problem-solving, reasoning, and decision-making. AI encompasses various technologies, including machine learning, natural language processing, and neural networks (Russell and Norvig 674-858). Simply put, AI refers to the science of making machines perform tasks that require human intelligence (Minsky 8). “While the advancement of AI may be inevitable, its ultimate destination is not” (Kissinger et al. 15). As AI continues to evolve in ways that cannot be anticipated, its role, however, remains fundamental in the educational landscape. Luckin emphasizes that AI must be seen as a tool to enhance humans’ intelligence and track their development rather than a replacement of their existence. And for that reason, AI integration in education is becoming widely regarded as a transformative and innovative force that can improve both teaching and learning (125).

I.2. AI Integration in Education

The integration of Artificial Intelligence into education represents one of the most transformative shifts in modern teaching and learning practices. As AI tools continue to evolve, their presence in classrooms has become both noticeable and **impactful. This** section outlines the evolution of AI over the years, its application in educational settings, and the main benefits and challenges it presents.

I.2.1. Evolution of AI Technologies

Since the dawn of civilization, mankind has always envisioned a helper, a machine that can perform tasks as well as a human being (Kissinger et al. 59). Therefore, the concept of artificial intelligence (AI) is not entirely modern. The idea of building intelligent machines goes back to ancient civilizations. In Greek mythology, the divine blacksmith *Hephaestus* is said to have forged automatons, including the bronze giant Talos. The first robot to ever walk the earth patrolled the shores of Crete and protected it from invaders by order of *Zeus*, the king of Greek gods (Adrienne Mayor 7). Nonetheless, humans' obsession with mechanical intelligence did not stop at mythology as it also reached the real world a millennium later. During the Golden Age of Islam, Al-Jazari (1136-1206) helped lay the groundwork for modern engineering and robotics with his revolutionary innovations, such as the Elephant Clock, a giant water clock that featured an elephant carrying its driver. Then, in the 17th and 18th centuries, European rulers such as France's Louis XIV and Prussia's Frederick the Great were captivated by mechanical automata and supervised the prototypes' construction (Kissinger et al. 59). While myths planted the seeds of AI, its formal development began in the 20th century with Alan Turing's profound work. Alan Turing, often regarded as the father of modern computing, introduced the concept of the *Turing Test*, in which he proposed that if

an observer cannot distinguish a machine's behavior from a human's, it should be labeled then as being intelligent (Turing 433). His work paved the way for the foundation of AI research and its exploration. Several milestones have shaped the history of AI. They are referred to as the Turing Award winners among them: Marvin Minsky (1969) and John McCarthy (1971), who established foundational concepts in representation and reasoning. Allen Newell and Herbert Simon (1975), who developed symbolic models for problem-solving and human cognition. Finally, Yoshua Bengio, Geoffrey Hinton, and Yann LeCun (2019), who pioneered deep learning, making multilayer neural networks central to modern computing. The first recognized AI work, however, was crafted by the hands of Warren McCulloch and Walter Pitts in 1943. They modeled artificial neurons based on brain physiology, logic, and computation. Later in 1956, John McCarthy organized a workshop that aimed to explore AI potential. The workshop did not succeed immediately, but it led to future research (Russell and Norvig 36).

From 1952 to 1969, researchers developed machines capable of performing tasks that were previously considered purely human-like; among the major accomplishments during this time were:

- *General Problem Solver (GPS)* by Allen Newell and Herbert Simon, which demonstrated problem-solving through symbolic reasoning.
- *Lisp Programming Language*, developed by John McCarthy, which became a fundamental tool for AI research (Russell and Norvig 37).

By the late 1960s and early 1970s, AI research encountered major difficulties as the complexity of the real world became an actual burden. This led to the shift to expert systems. These systems relied on domain-specific knowledge to solve complex problems. DENDRAL

and MYCIN are early examples. Expert systems have made commercial success and were adopted in various industries from 1966 to 1973 (Russell and Norvig 39–40).

Due to the shortcomings of expert systems, a shift towards probabilistic reasoning and machine learning was promoted, where AI could learn from data rather than relying solely on predefined rules. Researchers began to emphasize data-driven approaches. Starting from 1987, AI was integrated into fields like statistics and operations research (Russell and Norvig 37). By the early 2000s, advancements in AI were encouraged by the big data age. This era refers to the vast information generated by the internet and computing power, which enabled AI to advance in terms of learning algorithms to process larger datasets for tasks like computer vision and natural language processing. Deep learning is characterized by multiple layers of computing elements. It achieved remarkable success in speech and visual image recognition (Russell and Norvig 44). Notable AI tools include:

- Speech recognition: AI-powered assistants like Siri and Google Assistant.
- Computer vision: AI-driven image and facial recognition.
- Natural language processing (NLP): AI models like ChatGPT that understand and generate human language.

AI has been researched in the educational field for around forty years and its application in education is growing tremendously (Woolf 41). Artificial Intelligence in Education (AIED) is a field that incorporates methodologies and theories from cognitive science and generates its own research (Holmes et al. 82). The history of AI in education began with computer-based instruction systems for interactive learning around 1960. Then, intelligent tutoring systems were introduced. Although early AI applications in educational settings faced some challenges, such as limited access to technology and dependence on

outdated algorithms, they paved the way for future AI use in personalized education.

AI has evolved since its inception. It evolved from rule-based systems to advanced machine learning technologies. This evolution had an impact on many fields, mainly education, where AI is reshaping the teaching and learning experience. Understanding AI's historical development is crucial to gain insights into its current applications and its future potential advancements in EFL education. And while there are still challenges regarding the integration of AI, its impact on teaching and learning continues to grow, introducing new opportunities and challenges. Understanding AI's development might give a glimpse of its role in shaping the future of EFL education.

I.2.2. Applications of AI in Educational Settings

The integration of AI into education represents a significant shift in the teaching and learning processes, both inside and outside of the classroom. As educational institutions aim at addressing different learners' needs in an increasingly fast-paced world, AI offers many innovative solutions and tools that enhance learning by meeting diverse learners' needs, helping students to acquire knowledge, and supporting administrative processes (Luckin et al. 93-95). Over time, AI integration into the field of education has evolved extensively. From mechanical teaching machines to modern intelligent tutoring systems and adaptive learning technologies.

I.2.2.1. Early foundation

The use of machines to enhance learning was first introduced back in the 20th century. Sidney Pressey pioneered the idea of using technology in the educational field. He suggested that multiple-choice tests (MCT) should provide immediate feedback to support learning, which was not possible with manual grading. Pressey then developed a mechanical teaching

device that provides instant feedback and correct answers. The machine is often compared to a typewriter. He claimed that such a device was designed to reduce teachers' workload, particularly in grading their learners' work (Pressey 417).

In 1950, B.F. Skinner extended this concept. He developed a machine that reinforces learning through automatic immediate feedback. Skinner's machine required students to write their answers instead of selecting them, ensuring deeper cognitive engagement. Both machines lacked adaptability, as learners followed the same sequence of questions (Skinner 969–970).

I.2.2.2. Evolution of early adaptive systems:

Norman Crowder devised an alternative approach known as *intrinsic branching programmed instruction*. This method aimed at marking shifts toward personalized learning (Crowder 286). However, the first truly adaptive teaching machine was developed by Gordon Pask, known as SAKI (Self-Adaptive Keyboard Instructor). This device adjusted to learners' performance and knowledge (Pask 69). With computing advancement, the adaptive approach transitioned to computer-assisted instruction (CAI). The most influential CAI system and the first to be introduced during that time was PLATO (Programmed Logic for Automatic Teaching Operations) (Holmes, Bialik, and Fadel 98). It was developed at the University of Illinois. PLATO introduced many educational technologies that are still used today, such as forums, emails, and remote screen sharing. Stanford University and IBM also collaborated to develop a CAI system incorporating linear teaching material presentations and drill practice activities (Holmes, Bialik, and Fadel 99).

Later in 1970, Brigham Young University introduced TICCIT (Time-Shared Interactive Computer-Controlled Information Television), a tool that breaks subjects into topics and

learning objectives, displaying them in an interactive informative screen. Although CAI systems improved education, they failed to accommodate individual learners' misconceptions and interests (Holmes, Bialik, and Fadel 99).

I.2.2.3. AI and intelligent tutoring systems:

Scholar is the first application of AI in CAI, a system developed by Jaime Carbonell that generated personalized responses to student input using semantic networks. This innovation led to the development of intelligent tutoring systems (ITS). ITS are AI-powered systems designed to provide guidance tailored to each individual student's needs. It integrates pedagogical methods and expert domain knowledge to ensure adaptive learning through customized activities and materials (Wenger 30). ITS systems rely on AI models to understand learner, domain, and instructional models. Simply put, they focus on who is being taught, what is being learned, and how the learning should take place (Holmes, Bialik, and Fadel 103). There are several types of ITS among them:

- *Dialog-based Tutoring System*: These systems engage students in conversational learning. Examples include: CIRCISM Tutor and Auto tutor (Holmes, Bialik, and Fadel 114).
- *Exploratory learning*: These systems encourage constructivist learning, enabling learners to explore and manipulate their environment to construct knowledge. Examples include Betty's Brain and Crystal Island. Both systems incorporate a game-based learning approach (Holmes, Bialik, and Fadel 120).
- *Automated writing evaluation*: these tools analyze students essays and provide automated feedback (Holmes, Bialik, and Fadel 128). Some of the early examples include:
    - PEG (project essay grade): it compares students' essays with teacher-graded essays. It was criticized for focusing on surface-level features rather than the

quality of the content. (Holmes et al. 130).

- Intelligent essay assessor: it detects plagiarism and infers meaning as well as improving content and organization. (Holmes et al. 130).
- Write to Learn/E-rater: it combined many AI techniques to provide formative feedback and scoring and enhance students writing through automated revision suggestions. (Holmes et al. 131).

Additionally, adaptive learning platforms, such as *Alt School*, provide AI-driven personalized learning. AI-powered learning analytic systems, like *Lumilo*, assist teachers in monitoring classroom and students' engagement. Language learning tools like *Google Pixel* utilize AI-powered translation, and platforms like *Duolingo* and *Babbel* facilitate multilingual communication. (Holmes et al. 139).

I.2.2.4. AI as a supportive tool, not a replacement:

AI has been recognized as a key tool to enhance adaptivity (Aleven et al. 7). The US Department of Education highlights that learning can be personalized through AI, which meets each student's level by building on their strengths (U.S. Department of Education). However, despite these advancements, AI cannot replace human adaptability in teaching and emotional intelligence of human teachers. Instead, AI should support and not replace teachers. It should serve as a tool that helps teachers better understand their students and respond creatively to their needs (Cardona et al.40).

I.2.3. Benefits and Challenges of AI in Teaching

The integration of artificial intelligence (AI) has shifted the landscape of education. AI's influence can be seen not only in technology, but also in the educational experience. AI challenges the traditional methods, offering personalized learning and supporting different

educational needs. Furthermore, it develops essential skills such as critical thinking and provides support for kids with special needs (Zohuri and Mossavar-Rahmani 145). However, there are several challenges that come with incorporating AI. It requires a well-planned strategy that considers society. To promote critical thinking, AI in education needs to focus on creativity and technological skills along with algorithmic thinking. “This requires a paradigm shift in how education is approached in the AI era, moving beyond traditional methods to embrace more dynamic, interactive, and student-centered learning environments” (qtd. in Walter 2).

I.2.3.1. Benefits of AI in Teaching

AI offers several advantages in teaching, which can transform traditional classroom practices.AI can help personalize learning, improve collaborative learning, enhance feedback and assessment, and finally making education more inclusive and accessible

I.2.3.1.1. Personalized and Adaptive Learning

AIED revolutionized the learning process by introducing a personalized environment with the help of intelligent tutoring systems (ITS). Using AI to simulate one-on-one tutoring, these tools provide students with personalized guidance based on their cognitive needs and learning style. Due to many financial and logistical constraints, one-on-one tutoring cannot be achieved. Although it has been the most effective instructional method since at least Aristotle’s tutoring of Alexander the Great! (Luckin 24). AI-driven ITS solved this problem by offering individualized, adaptive learning experiences. As AI systems became capable of analyzing large datasets and generating insights, they offered a previously unattainable means of understanding learners in great depth. AI can find patterns in a student's interactions with an e-learning module that may reveal the student's preferred learning style or areas of

difficulty (Chen et al. 75269). ITS first appeared in the 1970s with the development of BUGGY, a system designed to teach basic addition and subtraction. The program helped identify and correct student errors. Today, modern ITS is superior. As it uses advanced machine learning techniques, neural networks, and large datasets to boost accuracy and flexibility levels in personalized learning. For example, the iTalk2Learn system, which is used to teach fractions, includes models that assess students' math and emotional knowledge as well as their needs (Luckin 24).

I.2.3.1.2. Collaborative Learning

Besides personalized teaching, AI also improves collaborative learning. The latter plays a key role in improving both critical thinking and engagement. Many studies have shown that collaborative learning enhances learning outcomes by enabling students to express and defend their ideas, find alternative explanations, resolve disagreements, and finally build shared knowledge and meaning (qtd. in Luckin et al. 26).AI can facilitate collaborative learning since it does not come naturally and students often require guidance. According to Luckin et al. AI can help support collaborative learning through: adaptive group formation, facilitating discussions, providing intelligent virtual agents, and moderating interactions (26–27).

- Adaptive Group Formation: AI organizes students into teams according to cognitive ability and interests, ensuring productive interactions; platforms like Edmodo analyze student performance and preferences to create optimized learning groups.
- Expert Facilitation: AI recognizes when students struggle to communicate ideas or misunderstand concepts and provides clarification. IBM Watson Tutor keeps tabs on conversations in STEM classes. Without the need for instructor assistance, the AI

helps students stay on course by providing clarifying cues or pertinent learning materials.

- Intelligent Virtual Agents: Involves intelligent virtual agents that are introduced into the collaborative process. They function as virtual tutors, peer learners, or discussion participants, simulating productive debates and enhancing critical thinking. Google's Socratic AI plays the role of a historical figure to engage students in debates as it challenges their point of view, which encourages deeper analysis and discussion.
- AI-Driven Moderation: AI keeps track of and summarizes student conversations, pointing out common misunderstandings and identifying important points. For example, the system might provide alerts to human tutors to inform them of key events such as students going out of the topic.

I.2.3.1.3. Assessment and Feedback

Assessment is important in language learning, because it gives information about student performance. Traditional assessment methods take time to provide feedback and can be tiring for teachers. AI-driven assessment systems, on the other hand, offer solutions to these challenges. AI can automate the evaluation of essays, tests, and assignments, which can help reduce the teacher's workload. The UK government invested in many AI tools to help teachers in grading and lesson planning (Department for Education). Platforms like Turnitin rely on AI to analyze written works, detect plagiarism, and provide immediate feedback. According to Kristen DiCerbo, Chief Learning Officer at Khan Academy, AI-driven tutoring systems like *'Khanmigo'* have the potential to provide personalized support to students across various subjects and can assist teachers with lesson planning and data analysis (*Financial Times*).

I.2.3.1.4. Inclusivity and Accessibility

AI plays an essential role in making education more inclusive and accessible by removing obstacles for students with disabilities through AI-powered technologies. Chatbots and speech-to-text apps are examples of tools that provide assistance to students who need alternative ways to learn content. The U.S. National Science Foundation and the Education Department's Institute of Education Sciences are funding AI research and development to help children with speech and language difficulties (AP News). By generating audio from text or producing subtitles, speech-to-text and text-to-speech tools, like Google's Live Transcribe and Microsoft Immersive Reader, help students with dyslexia and hearing problems. Other AI tools support multilingual learners through apps like *Google Translate* and *Microsoft Translator*, which can be helpful as they provide real-time translations and subtitles.

I.2.3.2. Challenges of AI in Teaching

While AI offers many benefits for education, its integration into teaching presents several challenges that must be mentioned.

I.2.3.2.1. Technical Expertise and Teacher Training

Many teachers lack the ability to effectively integrate AI into their teaching practices. AI tools could be misused or underutilized without proper training, which would definitely limit their potential benefits. The California State University (CSU) system's initiative to become an "AI-powered university" received criticism due to its vague AI implementation strategies and inadequate teacher training. The monitoring and evaluation of AI remain uncertain for faculty members (Freedberg).

I.2.3.2.2. Ethical Concerns: Privacy, Bias, and Academic Integrity

AI in education raises serious ethical issues, such as student data privacy, potential

biases in AI algorithms, and concerns about academic dishonesty. AI tools are subject to unfair evaluations and security risks if they are not properly regulated. In Australia, a federal parliamentary investigation brought to light dangers like the use of AI tools for deepfakes, cheating, and child grooming. The report called for safeguards in AI-driven education systems ("Chatbots 'Grooming Children'"). AI systems are trained to work on large datasets, which may contain biases that can lead to unfair results. If these biases are not addressed, AI tools can reinforce inequalities, especially those affecting non-native English speakers. For instance, AI-driven grading tools have been reported to misclassify non-native English writing as AI-generated. As it was the case with Albert, according to The Guardian, he was falsely accused of using artificial intelligence (AI) because of patterns common in non-native English writing. Research has also shown that AI detection tools flag non-native English speakers, reinforcing concerns about algorithmic bias in education. As Dr. Mike Perkins, a generative AI researcher, said, "All the research says time and time again that these tools are unreliable," highlighting the dangers of false accusations (Hern).

I.2.3.2.3. Cost and Accessibility Barriers

The integration of AI in education faces a lot of financial challenges, particularly in the case of small institutions that have limited budgets. AI learning platforms often need expensive subscriptions and the necessary infrastructure, like high-speed internet and computing devices (Sharma et al. 38). As of today, AI in its fullest form is not accessible for all schools and students, which is a real challenge that must be addressed in the next years.

I.2.3.2.4. Maintaining Educational Quality and Human-AI Collaboration

Over-reliance on AI-generated content may lead to a decline in education as it reduces any signs of creativity or cultural relevance, which eventually affects the overall learning

experience. ChatGPT is capable of producing essays, but its frequent use of generic arguments or factual errors raises questions regarding academic integrity and the development of critical thinking skills. According to Hutson, "AI should enhance human creativity and intellect, not replace them." Thus, in order to maximize AI's benefits while preserving the essential skills of a meaningful learning experience, AI should be viewed as a powerful tool or even a partner rather than a substitute and a replacement for humans in education.

I.3. AI in EFL Teaching

English as a foreign language (EFL) refers to the teaching and learning of English in countries where it is not spoken. On the other hand, Artificial Intelligence in Education (AIED) refers to the use of AI technologies to improve the process of teaching and learning. AI has changed how the new generation perceive knowledge helping them acquire skills quicker (Tapalova et al. 643), which can be true also to language learning. EFL teaching is changing due to AI, which offers personalized instruction, assessment, and support for educators. In educational settings, AI combines learner, domain, and pedagogical models to offer adaptive feedback and suggest different content to be learned that is tailored to each educational context based on common learning difficulties (Tapalova et al. 644). While many concerns have emerged about whether AI will replace teachers, many researchers stated that AI instead acts as a pedagogical aid to enhance teaching effectiveness (Luckin et al. 95). Despite this fact, it is important for teachers to evaluate AI tools and implement them in ways that improve learning (Holmes and Tuomi 8). Many AI tools are currently available to support language learning, some of which draw upon advanced technologies such as natural language processing and machine learning. The following sections of this chapter will explore major AI tools used in language education, personalized learning and its role, and real-world

applications of AI in EFL teaching and learning.

I.3.1. Overview of AI Tools in Language Education

In recent years, English as a second or foreign language (EFL) has been heavily relying on digital technologies, and whether digital media are "friend or foe" (Paiva and Bittencourt 165), there is no doubt about the impact AI brought, as many studies have shown that "technology can influence the processes and outcomes of education, and many countries are investing in technological support for teaching and learning" (Paiva and Bittencourt 448).

I.3.1.1. Key AI Technologies

The integration of AI into language learning has evolved beyond traditional Computer-Assisted Language Learning (CALL) systems and was replaced by the incorporation of Natural Language Processing (NLP), Machine Learning (ML), and Deep Learning (DL), which led to significant advancements in teaching methodologies, as well as enhancing the effectiveness of the learning process.

I.3.1.1.1. Natural Language Processing (NLP)

An area concerned with AI and linguistics focusing on the automated processing of human language. This technology allows AI systems to analyze, interpret, and generate human language, supporting applications such as chatbots, speech recognition, and automated essay grading, Google Translate and DeepL use NLP-based systems to improve the accuracy of translation (Schmidt and Strasser 167)

I.3.1.1.2. Machine Learning (ML)

Refers to systems that learn based on experience. ML "helps us find solutions to many problems in vision, speech, recognition, and robotics" (Alpaydin 3). By relying on data and past experiences to improve the performance of computers and their applications.

Duolingo and Rosetta Stone use (ML) algorithms to make sure each lesson is the right difficulty for the user, which makes learning more fun and effective (Schmidt and Strasser 167).

I.3.1.1.3. Deep Learning (DL)

Is a type of AI that utilizes artificial neural networks (i.e., computing systems designed to emulate specific neural networks found in the human brain) to learn from large data sets (Schmidhuber 86). The primary focus of deep learning is on the classification of images (Schmidt and Strasser 167). Google Lens is an example of using DL to recognize and translate text in images instantly.

I.3.1.2. Types of AI Tools

Baker and Smith categorized AI tools in foreign language learning into three main types: learner-facing, teacher-facing, and system-facing (5).

I.3.1.2.1. Learner-facing AI tools

AI tools that help students improve their level in a certain subject incorporating specific practice patterns, reflective feedback mechanisms, and behavioral drills, e.g., apps like Babbel, which take advantage of the learner's input to provide instant feedback.

I.3.1.2.2. Teacher-facing systems

Teacher-centered tools that aim to reduce the teacher's workload, particularly in automated processes (such as grading, providing feedback, managing classrooms, and addressing administrative issues). Some examples of these systems include: GradeScanner, which automatically grades multiple-choice tests, and Grammarly, which provides automated feedback on grammar, coherence, and originality, easing the teacher's work when it comes to assessing student writing.

I.3.1.2.3. System-facing AI tools

At an institutional level, AI is used to analyze student performance, predict learning outcomes, and optimize curriculum design. These tools deliver data-driven information to educators and policymakers, thus improving decision-making in educational settings.

The three main AI tools types mentioned above play an important role in analyzing student performance, predicting learning outcomes, and optimizing curriculum design. These tools deliver data-driven information to educators and policymakers, thus improving decision-making in education.

I.3.1.3. AI Applications in EFL

AI applications in EFL examples include machine translation tools, AI writing assistants, and chatbots that help solve specific problems in language learning, making it more efficient, and adapt to learners' needs.

I.3.1.3.1. Machine Translation

Is the process of translating a text from one language to another. Machine translation apps use a large collection of text and a variety of complex algorithms to translate written texts automatically. *DeepL* (www.deepl.com) is one of the most popular AI-powered translation websites right now, besides *Google Translate*. It uses "deep learning," which heavily relies on neural networks, as mentioned before. Thus, *Deep* processes words and phrases at the same time, similar to how images are processed (Schmidt and Strasser 168). The use of *DeepL* or similar programs in the EFL classroom holds several benefits. It can help learners when it comes to 'understanding-the-gist' or for global understanding in scenarios where language learners require quick translation. Additionally, machine translation can facilitate a more precise understanding of specific passages because learners can simply click

on a word to access its meaning and/or a synonym, thereby enhancing their comprehension. As seen in figure 1, *DeepL* provides an accurate and fluent Arabic translation for simple English sentences, making it a valuable tool for EFL learners needing quick language assistance. The integrated dictionary and thesaurus facilitate the identification of semantic approximations, which enhances the translation experience. Moreover, *DeepL'*s dictionary and thesaurus help learners find similar word meanings, improving understanding. It also works well with simple sentences and common expressions, including slang and idioms. Figure 2 highlights that while *DeepL* correctly conveys the meaning of "broke the news," the idiomatic phrase "take it with a grain of salt" is translated into a more commonly understood Arabic equivalent rather than literally. However, in many cases, the language learner's linguistic expertise remains essential. Especially in writing texts, learners might excessively rely on the translations provided by machine translation tools without developing skills like paraphrasing or summarizing. Furthermore, it lacks expertise in identifying particular contextualized usages of semantic items. In specific domains of technical and medical terminology, the machine's translations are not entirely accurate. Also, *DeepL*, Google *Translate* and other translation software often do not include minority languages, which can be an essential part of learning a language (Schmidt and Strasser 169).

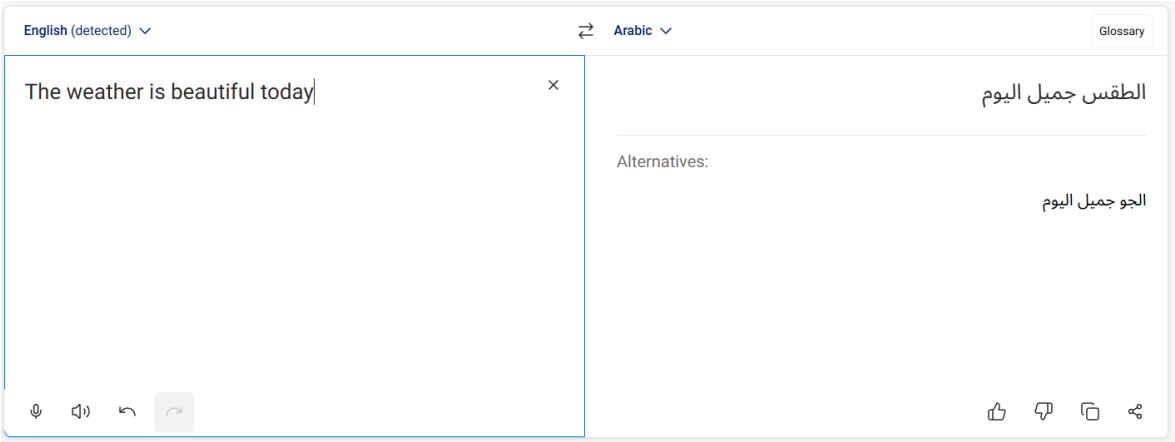

Figure 1: DeepL translating a simple English sentence into Arabic; **Source***: DeepL Translator, www.deepl.com.*

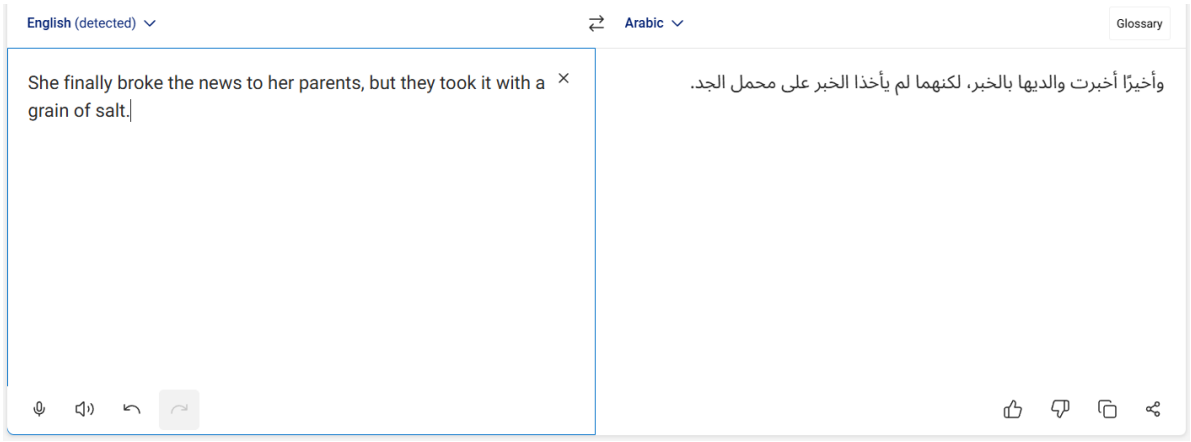

Figure 2: DeepL translating an English idiom into Arabic; **Source***: DeepL Translator, www.deepl.com.*

I.3.1.3.2. AI Writing Tools

Spell-checking software has improved considerably over the last few years. At first, they just analyzed the user's spelling mistakes. Then, they started to include grammar-checking tools. Early versions were limited in their ability to understand context and nuanced grammar. Now, people communicate more digitally, texts and other written material are now shared more easily through different channels and networks. This means there is a growing demand for more reliable spelling and grammar checking. Several AI-powered writing tools like *Grammarly* (www.grammarly.com) were introduced, offering spelling and grammar checks and features that analyze the clarity, coherence, engagement and delivery of a text, and can thus scan written text more reliably. *Grammarly* uses a large collection of texts and

algorithms to suggest changes to a text based on parameters such as register and delivery. AI-driven writing assistants, such as *Grammarly* and *LanguageTool* scan texts for errors and suggest improvements. These tools are based on an extensive database and advanced algorithms. They can analyze the clarity, coherence, engagement and delivery of a text. *Grammarly* can also adapt to different levels of formality and tone. It can even analyze the grammar, syntax and coherence of written texts. These tools provide real-time feedback by highlighting errors and suggesting improvements based on linguistic rules and understanding the context. As illustrated in Figure 3, *Grammarly* detects grammar mistakes, provides corrections, and assigns a writing score, allowing EFL teachers to streamline assessment and focus on content development. The tools mentioned improve writing skills; however, there are several issues that should be considered, like AI bias, plagiarism, and their inability to evaluate creative writing (Schmidt and Strasser 170).

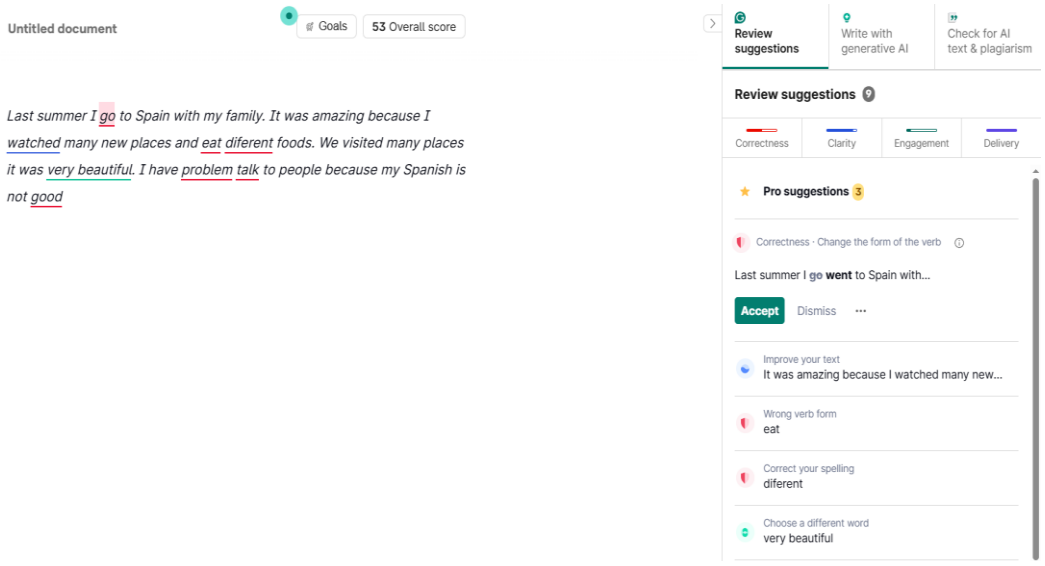

Figure 3: Grammarly's feedback; **Source***: Grammarly, www.grammarly.com*.

I.3.1.3.3. Chatbots

Generally, chatbots try to imitate the behavior of humans. They have access to huge

language databases, allowing them to become more and more intelligent. This has encouraged companies in the field of educational technology to develop their own virtual bots or agents, since "chatbots provide customized answers in response to your messages and can even grade your performance or give tips on what you need to improve" (Schmidt and Strasser 171). They can be especially helpful for beginners, since basic words and phrases often have clear structures. So, the machine is not likely to fail. Chatbots are usually designed to be user-friendly, offering a simple interface and the ability to be used anywhere and on any device. Chatbots like Memrise, Babbel, and Duolingo (available on Play and App Store) use multimedia so that learners can practice the target language with audio, video, and images while chatting or writing with the chatbot. Students who are nervous about face-to-face conversations in the real classroom may benefit from these conversational scenarios with an anonymous chatbot, as mistakes or personal details are not made public and there are no paralinguistic signs of boredom or judgement. These tools also support students who have speech difficulties by providing an alternative means of communication (UNESCO).

I.3.2. Personalized Learning and AI-Driven Assessment

AI is offering many new possibilities in education, especially in how learning can be personalized and how assessment is conducted. This section looks into the role of AI in both personalized learning and assessment.

I.3.2.1. Personalized Learning

One-to-one human tutoring is widely regarded as the most valuable approach to teaching and learning (Luckin et al. 24). However, it is impossible to provide a human tutor for every student (at least prior to the rise of AI). ITS have emerged as a significant solution to address this challenge. ITS relies on AI to simulate one-to-one human tutoring, promoting

personalized learning. The latter refers to a student-centered system that supports students' varied needs and abilities (Lee et al.1270). By adapting to their interests, needs, motivation, and progress, ITS can facilitate the learning process. To improve personalized learning environments (PLEs), it is necessary to employ AI, which incorporates technologies such as machine learning and natural language processing that can tailor teaching methods to individual learning preferences (Huang et al.621). Today's AI-driven systems adapt to each individual, offering personalized course sequences, content recommendations, tasks, and automatic assessments, making learning much more enjoyable (Katiyar et al. 152). They even evaluate students' performance while adapting learning materials to their needs, making adjustments in real time to offer suitable challenges and assistance. This personalization actually improves learning outcomes and engagement. Duolingo's AI model, for example, changes the difficulty of language exercises based on user feedback. The system provides further practice on verb conjugations if a learner often has trouble with them. This personalized approach reinforces weaker areas and shows how AI can be both self-paced and student-centered learning (Modi).

I.3.2.2. AI-Driven Assessment

AI in English as a Foreign Language (EFL) education will transform assessment, supporting a more adaptive and student-centered approach. As Hill and Barber suggest, it is assessment, not curriculum or teaching, that often lags behind in terms of preparation for a Renaissance in Education (1). AI-powered assessments supported by NLP and ML systems at their core are transforming the field of EFL as they challenge traditional assessment methods by offering highly precise, personalized, and scalable assessment solutions (EFL Cafe). First, the increasing use of AI in education will enable the collection of huge amounts of data about

teachers and learners. This is called 'big data.' It has already been examined. For example, AI can predict when a student is likely to fail an assessment or 'drop out' of an online course, ultimately delivering just-in-time information about learner successes, challenges, and needs, which eventually reshapes the learning experience itself. Secondly, in addition to determining whether or not a learner provided the correct response, datasets can be analyzed to assist teachers in understanding how the learner arrived at their response. In other words, the data from digital teaching and learning experiences will provide a new insight that cannot be captured by existing assessments. Furthermore, AIEd-driven assessments will replace the stop-and-test approach, where teachers evaluate limited samples of what a student has been taught, as it will be integrated into significant learning activities, such as a game or a collaborative project. These assessments will evaluate all learning (and teaching) that occurs in real time (Hill and Barber 37). Both formative and summative assessments can be transformed by AI. Formative assessment is an integral part of the learning process. It allows students to identify gaps in their knowledge and improve through regular feedback. Traditionally, teachers relied on observations, quizzes, and peer feedback to assess student progress. However, the rise of AI-powered tools has brought new possibilities to support the formative assessment. Grammarly, Duolingo, Elsa Speak, etc., are examples of tools that offer real-time insights, personalized feedback, and adaptive learning pathways, thereby transforming the landscape of formative assessments. Summative assessment is also considered a central method for evaluating learners' skills at the end of a learning period. With the integration of AI, concerns regarding summative assessments, including issues of subjective criticism, inconsistencies in grading, and the potential for human bias, have been addressed (EFL Cafe).

I.3.3. Case Studies of AI Implementation in EFL

Many researchers have investigated how AI is influencing language instruction as its use in education grows, especially in EFL teaching and learning. The following studies offer valuable information on how AI is impacting EFL education, emphasizing how technology can help both teachers and students .AI tools provide many benefits, such as personalized learning, automated feedback, and help teachers in classroom management. ChatGPT, Grammarly, Slides AI, and Duolingo are common tools used that assist both teachers and learners by facilitating lesson planning, assessment, language skill development, and so on. These studies emphasize the fact that AI should not replace human instruction and traditional teaching. However, the results have shown the overreliance of students on AI diminishing their creativity. AI then should be seen as a supportive tool that teachers have to integrate attentively and guide their students on how to use because of the biased and inaccurate AI content they might be exposed to.

I.3.3.1. Case Study 1: Investigating Algerian EFL Teachers' Attitudes Towards AI Utilization in Language Education

Benaicha and Semmoud conducted research on how AI is integrated into Algerian EFL teaching. The study highlighted the benefits, challenges, and pedagogical implementation. Their research identified that ChatGPT and Grammarly are among the common tools used in Algeria by EFL teachers then, followed by Slides AI, and Duolingo (Benaicha and Semmoud 139). These tools are used for lesson planning, assessment, and feedback. Participant teachers acknowledged AI's role in facilitating teachers demanding tasks and supporting personalized experiences. However, teachers were concerned about the overreliance on AI, a future where creativity is lost, and some issues in academic integrity in terms of plagiarism and cheating

(Benaicha and Semmoud 141). The study also pointed at AI's lack of human interaction, which was considered as a barrier in improving communication cheating (Benaicha and Semmoud 142). The study suggests that AI should complement rather than replace the role of teachers, the potential and limitation of AI in EFL Algerian teaching were also discussed in this study.

I.3.3.2. Case Study 2: ChatGPT as an AI L2 Teaching Support: A Case Study of an EFL Teacher

Octavio et al. explored the use of ChatGPT as a teaching support tool in the EFL classroom. The research focused on one participant, an EFL teacher in Spain. The teacher was observed over seven months from January to June 2023 (Octavio et al. 1). The teacher used ChatGPT for lesson planning (generating lessons, vocabulary lists, engaging activities, etc.) and also, in assisting students with interactive language practice and reading comprehension exercises, providing automated feedback (Octavio et al. 9). The study highlighted that ChatGPT is a beneficial tool for teachers, but it’s required for teachers to have training in terms of AI literacy for effective use. Among the findings: AI was considered beneficial because it saves teachers’ time, assists in creating engaging activities, and helps students to improve speaking, writing, and vocabulary acquisition. However, this study emphasizes that teachers need to verify content they use from AI tools, as they can be inaccurate and biased. Additionally, the study noted that overreliance on AI can hinder student’ creativity, ChatGPT, in particular, is limited in terms of real speech interaction (Octavio et al. 22).

I.3.3.3. Case Study 3: Using AI Platforms toward English Language Learning: A Case Study of English Program Students

At Rajabhat University, Thailand, Krasaesom et al. conducted research on how AI is

affecting language learning. This study explored English learners' perceptions of AI and how AI platforms improve EFL learning. Ninety English students were involved in this study. A quantitative approach was used to collect data (Krasaesom et al. 106). Findings indicate that students had a positive perception of AI, as it is a tool that helps improve their English and provide valuable benefits (Krasaesom et al. 107). Google Translate was the most used tool, followed by Grammarly, QuillBot, and then ChatGPT. These platforms were used mainly for translation, grammar correction, vocabulary acquisition, and writing assistance (Krasaesom et al. 110). AI was found to be a useful tool in skill development:

- Listening: AI helped students to improve pronunciation and comprehension of different accents. (Krasaesom et al. 109)
- Speaking: It guides students into correct pronunciation and sentence formation (Krasaesom et al. 109).
- Reading: it improved text comprehension and learning new vocabulary (Krasaesom et al. 109).
- Writing: it helped in grammar correction and sentence structuring (Krasaesom et al. 109).

Despite the advantages mentioned, the study highlighted several challenges and limitations. Among the participants, some were overly reliant on AI instead of using it to develop their skills. AI tools can be inaccurate, thus be evaluated and checked. This research emphasizes that AI platforms are useful in EFL learning they are available and easy to access too, but should be used as a complement rather than the main source of learning. Krasaesom et al. suggested that teachers should integrate AI in learning settings and encourage students

to evaluate AI-generated content critically.

I.4. Teachers' Roles in the AI Era

Teaching has evolved over the centuries in response to different developments, it started as teacher-centered, with a strong focus on memorization and teachers acting as "sages on the stage" (King 30), directly transmitting knowledge to students. Then, it shifted toward a more student-centered approach in the 20th century, making teachers facilitators rather than providers of knowledge. This transition was followed by the development of digital technology, which teachers began to use to enhance the educational process, and more recently, the introduction of AI into education, which is the next phase of this evolution. According to Luckin et al. "AI-powered tools will serve as a catalyst for transforming the role of the teacher" (31). As AI-driven tools have already started to transform traditional pedagogical approaches, redefining the roles and responsibilities of teachers and offering many benefits such as personalized learning, automated assessments, and real-time feedback, On the other hand, various questions were raised concerning the evolving role of EFL teachers in an AI-driven classroom. The critical question remains: Can AI ever truly replace teachers, or is it just a tool to support them? As AI continues to change teaching practice, teachers need to think about what their new responsibilities are. They also need to think about what they will be teaching their students, how they will use AI to help, and how they will use their own skills as teachers as well. How can teachers use AI without losing the most important human aspects of education? To address these concerns, it is important to examine how teaching roles are changing, the skills needed in classrooms that use AI, and what these changes might mean for the future of education.

I.4.1. Traditional Roles of EFL Teachers

Traditionally, EFL teachers globally acted as an authority, influenced by teacher-centered methodologies. This approach dominated the educational systems in the world for centuries. Until the rise of constructivist theories and communicative language teaching (CLT) that led to the eventual transition to a more student-centered learning, where teachers took on the roles of facilitators in the learning process. This transition under discussion may be traced back to the mid-20th century in the west. Algeria, on the other hand, continued to rely on the teacher-centered approach at least until the 21st century. Algeria only began to officially embrace this new wave of change in the early 2000s, with the adoption of competency-based education in 2003 (Bouzid 146).

I.4.1.1. Teacher-Centered Education

Throughout the 20th century, Algeria maintained a teacher-centered approach, influenced by French colonialism. After the country's independence in 1962, big efforts were put into building the educational system from scratch and retrieving what had been lost. However, the reliance on traditional methods continued. Teachers were viewed as the main authority in the classroom, transmitting knowledge, guiding students' practice, and assessing performance (Nifli-Sakali). The classroom was teacher-centered, with students absorbing content passively. During this period, their key roles can be identified as:

- **Knowledge Provider:** Teachers lecture on specific topics, and students listen to them with great attention as they deliver content that gives great importance to both grammar and vocabulary. They teach lessons separately, focusing mainly on the formal features of the language instead of encouraging students to actually use it. This approach emphasizes repetitive practice, mechanical drills, and the memorization of grammar

rules as important components. Which means that teachers are the main and the sole source of knowledge in other words a knowledge provider (Richards and Rodgers 5).

- **Evaluator:** Teachers assess learners' performance by providing feedback, assigning grades, and identifying weak areas that need improvements. They relied on written tests and oral questioning for the evaluation process (Richards and Rodgers 6).

- **Classroom Manager:** In the Grammar-Translation Method (GTM), order in the classroom is considered a fundamental component of the teaching process and to guarantee that, teachers must maintain discipline, structure, and control (Richards and Rodgers 6).

- **Cultural Ambassador:** Teachers introduces cultural elements to students, such as customs, traditions, and social rules of the language they are learning., which eventually ensures that students understand the socio-cultural context of language use (tesolcourse.com).

I.4.1.2. Student-Centered Education

In the early 2000s, Algerian authorities embarked on a new educational reform, influenced by the Competency-Based Approach (CBA) (Djerouane and Bensafi 70). This shift reshaped the role of the teacher. It transformed their roles from authoritative figures to facilitators. Teachers now value active student participation, problem solving, and interaction. Teachers undertook these evolving roles:

- **Facilitator:** Kahlil Gibran mentioned in his book The Prophet that "If the teacher is indeed wise, he does not bid you enter the house of his wisdom, but rather leads you to the threshold of your own mind" (Gibran 64). Teaching has undergone a transformation

from democratic to autocratic, and teachers have become facilitators who encourage learner autonomy through the use of group and pair work (Harmer 108).

- **Prompter:** Teachers encourage students to think creatively and also promote self-correction and peer assistance, which can help learners to reflect on their language use and find answers independently, thus improving their critical thinking skills (Harmer 109).

- **Resource Provider:** Teachers are responsible for guiding students throughout the learning process while encouraging independence and self-directed study. Thus, a teacher must shift from being only a transmitter of knowledge into being a resource. Harmer (2007) famously stated, "When we are acting as a resource, we will want to be helpful and available, but at the same time we have to resist the urge to spoon-feed our students so that they become over-reliant on us" (110).

I.4.2. Transformation of Roles with AI Integration

Numerous developed nations, such as the United States, the UK, China, and Finland, have adopted AI in their educational systems. Which had a profound effect on the field of EFL, specifically when it comes to teachers' roles. As a consequence, teachers nowadays are more focused on higher-order skills, creativity, and critical thinking development rather than merely transmitting knowledge or facilitating the learning process. While AI-driven education has made major strides in the developed countries, the same cannot be said for the rest, especially in developing countries. Algeria, like many other countries, comes behind in integrating AI in education. Due to limited infrastructure, lack of teacher training, and resistance to pedagogical shifts. Nevertheless, a gradual change can be sensed with the project of digitalization in the Algerian schools that started back in 2015 (Zeghadi and Bouacherine),

and with the introduction of many AI-powered digital tools into classrooms. Algerian EFL teachers are beginning to experience a transformation in their professional roles, even if this transformation is progressing at a slow pace. As from now on, teachers' roles transformed into:

- **Moderator:** Algerian EFL teachers have started to integrate *Google Classroom* and, before that, *Edmodo*, especially in universities. *Google Classroom* is a digital platform that enables educators to optimize their teaching methods and effectively monitor student progress. Instead of relying on traditional assignments (paper-based), students now can submit essays and tasks through the platform to be evaluated. Thus, teachers have become moderators, with less time on grading assignments and more time facilitating meaningful discussions (Boumediene and Hamadi 540).

- **Coach/Mentor:** EFL teachers turned into mentors rather than mere knowledge transmitters. The integration of AI tools facilitates the process of monitoring the progress of students, thereby enabling educators to prioritize interactive learning methodologies. *Duolingo*, for instance, uses gamification to assist learners in practicing vocabulary and grammar (Benaicha and Semmoud 133)

- **AI Collaborator:** AI can help teachers plan lessons, assess students, and adapt lessons to suit each student's needs. The partnership between AI and teachers will make them orchestrators of when and how to use these AI tools. (Lukcin 31). Thus, allowing them to focus on more complex skills. Luckin states that "Freedom from routine, time-consuming tasks will allow teachers to devote more of their energies to the creative and very human acts that provide the ingenuity and empathy needed to take learning to the next level" (31).

I.4.3. Competencies and Skills Required for EFL Teachers in the Age of AI

AI-driven platforms provide a new means of creating and delivering educational content. Teachers nowadays have to deal with new challenges that they were not expected to face when they qualified, which often puts pressure on them, as these challenges come from the digital transformation taking place in education with new developments like online learning and AI in the classroom (Ng et al. 137). Therefore, teachers need to upgrade their knowledge and obtain new skills, i.e., AI competencies, in order to keep up with this wave of AI-driven online learning. Possessing AI competencies allows individuals to evaluate AI technologies, communicate and partner effectively with AI, and utilize AI as a tool in various settings; it is without a doubt one of the pivotal twenty-first-century technological skills today (Long and Magerko). With that being said, and according to Ng et al. AI competencies for educators include using basic applications, managing information, creating learning content, and connecting their students via technology (143). Teachers who are well-versed in using AI may replace those who are not, since AI can help teachers embrace their new roles, which can greatly help learning in many aspects (Ng et al.; Vazhayil et al.). To assist teachers in developing AI competencies needed for modern education, several frameworks were proposed: *TPACK model*, and *DigCompEdu*, *P21's Framework for 21st-Century Learning*. These frameworks provide a solid base for understanding and fostering the skills necessary for effective AI integration in both teaching and learning.

- **TPACK Framework:** This framework is popular in research concerning teachers' use of technology, providing a rich view on their digital competencies. This framework consists of 3 forms of knowledge (qtd. in Ng et al. 144). It is built around the intersection of technological knowledge (TK), pedagogical knowledge (PK), and content knowledge

(CK). Content knowledge refers to a teacher's understanding of the subject matter. Pedagogical knowledge is defined as teachers' knowledge of their teaching. Technological knowledge is the ability of teachers to use different technologies (qtd. in Ng et al. 144). Balancing these three domains can help teachers incorporate technology successfully into teaching in order to gain the most effective use of AI in their instructional practices.

- **DigCompEdu Framework:** is specifically designed for educators, describing teachers' key competencies. In other words, working as a roadmap for how to implement tools and design programs (qtd. in Ng et al. 144). It includes an array of elements: (1) professional engagement, (2) digital resources, (3) teaching and learning, (4) assessment, (5) empowering learners, and (6) facilitating learners' digital competency (European Commission).

- **P21's Framework for 21st-Century Learning:** This model establishes key teacher competencies: teachers should have not only basic AI knowledge and skills, but also the qualities needed to adapt to, survive in and control future society. They should also be able to develop professionally throughout their careers (Ng et al. 148).

- In addition to technical skills, it is important for educators to have the right attitude when using AIEd technologies for teaching. Some teachers have negative attitudes towards AI due to the common worry of AI replacing them (qtd. in Ng et al. 145). Although this is far from the truth since teachers are a key component of this phase. Lukcin emphasized that "teachers need to be central agents in the next phase of AIEd" (31).

I.5. Pedagogical Implications of AI in EFL

In the 21st century, AI is considered a crucial influence on education. Its integration

into this field is reshaping the teaching and learning experiences (Holmes et al. 3, 80). Particularly in EFL teaching, AI is impacting the way lessons are being planned and delivered, how assessment is conducted and feedback is given, and enhancing adaptive learning, especially with tools like chatbots, adaptive learning platforms, and intelligent tutoring systems. Teachers are exposed to many new opportunities and challenges due to this change in pedagogy, which also reforms teacher-student interaction and classroom dynamics. As AI's integration into education is progressing**,** a review is required to better understand its pedagogical implications, including the change in teaching methodology, the opportunities and challenges it presents for teachers, and the influence of AI on teacher-student interaction and classroom dynamics.

I.5.1. Changes in Teaching Methodologies

EFL teaching methodologies have been a field of research over time. Anthony has defined a method as an overall plan for the systematic presentation of language based on a selected approach (65). In other words, Methodology is the pedagogical practices 'how to teach' (Brown 15). During the 20th century, many language teaching methodologies were introduced. Applied linguists competed to develop effective teaching practices and frameworks, each offering a different perspective (Richards and Rodgers 1). Larsen-Freeman and Anderson emphasize the importance of studying teaching methodologies. It helps to understand different techniques, thus making better instructional choices for different classes and learners (Richards and Rodgers 16). Despite criticism raised upon the application of methods, mainly Pennycook, who viewed the teaching methods as a limitation to the teachers' creativity and claimed that many methods are limited in terms of adaptability to different contexts, studying methods holds a value in helping teachers to critically evaluate the

available resources (Larsen-Freeman and Anderson). For this reason, emphasis is placed on the evolution of teaching methodologies from traditional approaches to AI-driven instructions.

I.5.1.1. Traditional Teaching Methodologies

Over the years, teachers have used many traditional methods to help students learn languages. In this section, some of the most common approaches are briefly explained.

I.5.1.1.1. The Grammar-Translation Method

The Grammar-Translation Method (GTM) is a traditional language teaching approach that emphasizes teaching grammatical rules. It was used back inthe18th to19th century to teach classical languages like Latin and Greek (Richards and Rodgers 5). In classes where GTM issued, the teacher is the ultimate source of knowledge; thus, students are passive. Grammar is taught deductively; students learn vocabulary through translation exercises and reading texts about the culture of the target language. The native language is used extensively to convey meaning (Larsen-Freeman and Anderson). This method provides a clear understanding of grammatical structures and enhances the reading skill; however, it limits the students' communicative competence because of the limited focus on listening and speaking (Brown18)**.**

I.5.1.1.2. The Direct Method

The Direct Method (DM), or what is referred to as the natural method (Richards and Rodgers 11), is a language teaching approach that emphasizes communication and direct exposure to the target language (Larsen- Freeman and Anderson). It was introduced in the late 19th century by reformers who wanted to build a methodology based on observations of naturalistic principles of language learning and as a response to the limitations of translation-

based methods (Richards and Rodgers 11). In classes where DM is used, the teacher is a facilitator; he directs activities and encourages students' active participation and self-correction. Students are active; they engage in conversations using the target language; the native language then is rarely used. Vocabulary and pronunciation are emphasized over grammar. This method focuses on oral interaction and the ability to use the language. Grammar is taught inductively; students acquire vocabulary through context and speaking activities rather than translation (Larsen- Freeman and Anderson). Although the direct method enhances communication and listening comprehension skills, it requires daily interaction, which makes it challenging to track in large classes (Brown 22); it is also difficult for students to understand complicated grammatical structures (Richards and Rodgers13).

I.5.1.1.3. The Audiolingual Method

The Audiolingual Method (ALM) is a language teaching method that emphasizes language habit formation and automatic language use through repetition. It was developed during World War II to train American soldiers to speak foreign languages efficiently. The audiolingual method was the final result of many theoretical foundations, such as structural linguistic theory, contrastive analysis, aural-oral procedures, and behaviorist psychology, adopted in 1950 (Richards and Rodgers 56). In classes where ALM is used, the teacher models the language behavior and directs students' dialogues and drills. He reinforces correct language habits and eliminates errors. Students imitate, repeat patterns, and follow the teacher's lead. The focus is on listening and speaking in the target language using everyday speech vocabulary and preventing any interferences from the native language (Larsen-Freeman and Anderson). This method helps students to develop correct pronunciation and enhances their listening skills through constant practice of language pattern models; however,

it limits their language use creativity known as communicative proficiency because the focus is on repetition more than meaningful interaction (Brown 23).

I.5.1.1.4. The Communicative Language Teaching

Communicative Language Teaching (CLT) is an approach that emphasizes interaction and real-life communication in language learning (Richards and Rodgers 161). It was first originated in Europe in the late 1970s as a rejection of traditional methods that focused on accuracy rather than fluency (brown 42). In CLT classes, the teacher creates situations that foster communication; he monitors students' performance and explains linguistic forms, meanings, and functions through authentic material use and exposure to real language. Students take responsibility for their learning; they learn to choose correct linguistic forms based on different social contexts; they are communicators interacting with each other in pairs or groups. All four skills are practiced; the focus is on language functions over forms. CLT assumes that learning to communicate motivates students. Giving the opportunity for individuals to express themselves and interact creates an effective learning environment (Larsen-Freeman & Anderson). This method enhances language use in meaningful contexts, but it may lead to grammatical inaccuracies if not balanced with comprehensive instruction. Using CLT can be demanding for teachers, especially with large classes, as it would be difficult to assess students' progress (Richards and Rodgers 168).

I.5.1.2. Transition To Modern Methodologies

Modern teaching methodologies are shifting to student-centered learning. Interaction, critical thinking, and real-world applications are emphasized.

I.5.1.2.1. Blended Learning

It is a teaching method that combines face-to face learning and technology use to

enhance learning considering flexibility and availability (UNICEF 9). This concept supports personalized learning and fosters a student-centered approach. Blended learning presents educational content in a variety of tools available at any time needed. Students can use online platforms, quizzes, and videos. It increases engagement as the information is emphasized through in-person discussions and online ones. The teacher eventually becomes more of a facilitator and a guide to his learners (Swartz).

I.5.1.2.2. Project-based learning (PBL)

It is a teaching methodology that encourages students to work on actual projects to learn important skills (Bell 39). Projects are often based on real-life problems, combining both skill and knowledge, which makes learning more meaningful. PBL encourages learners to think critically to develop solutions. It also promotes team collaboration and enhances communication. Students plan and assess their work, developing a sense of responsibility and autonomy (Eckardt et al. 40).

I.5.1.2.3. Flipped Classroom

In this method, students work on the instructional materials at home; therefore, the classroom time would be devoted to discussion and practical applications (Bergmann and Sams 13). The learning materials already reviewed independently save time, which enables deeper engagement during classroom time and more participation instead of passive listening. This method considers learners' differences; for example, each student can pause and rewatch instructional videos at his own pace, and students can also take a break when needed. Flipped classroom success depends on students' readiness to work before class (Lage et al. 32-33).

I.5.1.2.4. Gamification

It is a teaching method based on the integration of educational games in learning as a

tool to increase motivation and engagement. (Kapp et al). This method makes learning more interactive and fun. Students become involved when they receive immediate feedback and rewards, correcting their own mistakes and staying on track. The use of games encourages teamwork and a competition that is friendly. Digital platforms and AI-powered tools are used to design meaningful games and activities (Buljan). Despite the benefits, overuse of games can create imbalance, especially among young learners, as well as poorly designed games that distract from learning goals (Kapp et al).

I.5.1.3. The Role of AI-in changing Teaching Methodologies:

The emergence of AI has influenced teaching methodologies. AI learning systems are one of the major shifts in education; these systems analyze students' performance and adjust content based on each individual learner's needs, enhancing tailored learning experiences (Bowen and Watson 91). ITS are also among the major innovations in education. They are defined as AI-powered virtual teachers that stimulate human instruction, which offers immediate feedback, explanations, and illustrations, addressing students 'gaps in understanding (Holmes et al. 102). Additionally, AI-driven tools such as Grammarly, E-rater, and Turnitin provide feedback, assess the writing process, and ensure constant evaluation (UNESCO 16). Chatbots and virtual assistants automated by AI are tools used for language learning. These systems improve communication, allowing students to practice conversational speaking in the target language (Holmes et al. 114–120). AI also generates useful lesson plans and material for classroom use, considering different students' needs (Ma; Allen-Manning; "Customizing Lesson Plans with AI"). which eventually support teachers to maximize engagement and personalized learning and continue to reshape education.

I.5.2. Opportunities and Challenges for Teachers of AI Integration for EFL Teachers

The rise of AI in the educational field is reshaping EFL teachers' roles. Teachers become facilitators rather than just information providers, exploring a remarkable pedagogical change. While this shift brings new potential for teachers, it also presents some challenges.

I.5.2.1. Opportunities

The implementation of AI in EFL teaching opens up many opportunities for teachers, enhancing both their professional and pedagogical development. AI-assisted content creation is one of the fundamental opportunities for teachers. Various teaching materials, including texts, visual aids, listening scripts, and grammar exercises, can be generated by many available AI tools (Chen et al. 75272). These tools facilitate the creation of many teaching aids that adapt to different students' needs with less effort (Luckin et al. 30). Thus, teachers spend less time in the preparation of the teaching materials and more time engaging with pedagogical aspects. Another prominent advantage is workload reduction and time saving. AI offers the opportunity for teachers to handle repetitive tasks that usually take time and energy. Grading, generating quizzes, and correcting simple exercises for large classes are demanding tasks that each teacher faces. These tasks can be performed by AI tools efficiently (Hwang et al). For instance, in a study by (Taşçı and Tunaz), teachers conveyed that AI is a very useful tool for saving time during teaching-related tasks. On this basis, teachers devote more time to their students, focusing more on teacher- student interaction and learning progress (Goel and Polepeddi,). In addition, AI supports teachers' professional development. Teachers expand their pedagogical knowledge through many AI resources, such as platforms that offer online training, which helps teachers to develop an understanding of the latest methodologies and teaching resources. These AI tools support teachers' professional growth by providing lesson

plans, academic content, the latest trends in EFL teaching, and the latest research findings. Teachers then remain informed about the ongoing innovations in the EFL field (Chen et al 75271). Finally, AI promotes creativity and innovation in language teaching. AI-assisted tools save teachers' time as discussed above; thus, the time saved is devoted to designing more engaging and interactive learning experiences. AI supports teachers in creating gamified activities and virtual language learning stimulation and adaptive learning environments. These engaging activities broaden and improve the learning experience, promoting higher levels of learner motivation and participation (Luckin et al). AI allows teachers to experiment with many teaching strategies to address different learning styles (Hwang and Tu).

I.5.2.2. Challenges

Despite the opportunities AI offers in teaching EFL, like equipping teachers with tools to improve the learning experience, it also presents some challenges and requires critical integration to maintain human aspects in language education.

I.5.2.2.1. Challenges Related to Teachers and AI Adoption

Many teachers face a challenge in using AI in their classrooms due to a lack of digital competence and AI literacy. According to (Luckin et al.), teachers would find it difficult to incorporate AI into their lesson without proper training. They also highlighted the importance of AI literacy for educators in an age where technology is dominating. Urmeneta and Romero also reinforce the idea that many teachers lack the necessary skills to use AI tools effectively. They also note that there is limited training related to AI for teachers (49). This gap makes it difficult to incorporate AI into EFL classrooms. In addition, many teachers resist AI use, concerned about its impact on traditional teaching roles and job security. Therefore, (Luckin and Holmes 11) argued that AI could never replace teachers, rejecting this widespread

assumption that is preventing teachers and raising hesitation in adopting AI and new educational technologies. The use of AI in education depends on technological access. Luckin explain that AI-driven learning can be unfair as some students don't have the means to use technological devices. This issue makes a gap between the rich and the poor. Urmeneta and Romero similarly argue that AI-based teaching creates unfair opportunities, disregarding those with limited or non-available digital resources. Despite learners, teachers may also face an issue in integrating AI into their classes because not all schools have the necessary technological infrastructure (122).

I.5.2.2.2. Challenges Related to AI's Impact on EFL Pedagogy

AI is improving language learning, providing personalized learning experiences, and making lessons more engaging, though many concerns are raised about its integration in EFL pedagogy. (Vygotsky 89) communication and social interaction are key factors in learning language; however, AI tools may unintentionally reduce meaningful and natural conversations between a teacher and his students (Urmeneta and Romero 64). Language learning depends on practice and social engagement. Overreliance on AI can affect students' ability to produce authentic language orally and to develop their listening skills. AI, then, should be a useful tool to support teachers rather than a replacement for face-to-face interactions. Zhai et al. highlight that an overreliance on AI may cause difficulty in developing certain skills like critical thinking and problem solving. AI can be a useful learning tool if combined with active student participation. Teachers, on the other hand, should guide students on how to use AI effectively in improving their learning and raising awareness about AI as an aid, not a tool to skip effort. Urmeneta and Romero warn that students' excessive dependence on AI can limit their ability to think independently and rely on answers generated from AI (27). Privacy, bias, and

intellectual property are other pedagogical and ethical challenges when integrating AI into EFL teaching (Babanoğlu et al. 3). Vera discussed how AI educational tools can be biased also highlighting the risks of data privacy and concerns about ownership of AI-generated content (75). For example, a language assessment tool powered by AI might prefer certain dialects or sentence structures, resulting in biased evaluations for students from different linguistic backgrounds (Lewis 1884). Luckin et al raise concerns about AI-powered grading and feedback systems, showing how these tools might be unfair and inaccurate (18). Thus, it is important to be responsible and use AI carefully to avoid unethical practices in education

I.5.3. Teacher-Student Interaction and Classroom Dynamics:

The integration of AI into EFL classrooms is transforming teacher-student interaction and the dynamics. AI tools are dominating this field, influencing how teachers connect with their students, how they provide feedback, and how they facilitate learning. Despite the benefits AI offers, concerns are raised about its effects on human interaction in the classroom. The introduction of chatbots and virtual assistants as learning companions, changes in feedback mechanisms, and teacher-student interactions are among the shifts that resulted from AI use in EFL classrooms (Chen et al) .AI tools can act as virtual assistants, which can provide immediate responses to each student, supporting teachers in fulfilling certain tasks. Many researchers argue that chatbots, in particular, improve learning and motivation among students; they also contribute to achieving better learning outcomes (Labadze et al. 5). Wollny and Essel argue that chatbots also introduce gamification into language learning and facilitate its implication. They also help teachers by exposing them to many educational resources (Labadze et al. 5). Feedback, on the other hand, is provided through AI tools affecting student' autonomy. AI systems can analyze students' work and suggest areas of flaws and

improvement (Celik et al.). For example, ChatGPT guides students in learning difficult concepts and provides a step-by-step explanation, which encourages students to take responsibility for their own learning (Crawford et al.). Despite these benefits, many concerns exist about AI's role in education and how it may reduce direct interaction between teachers and their students. Overuse of AI may diminish the social and emotional aspects of learning, which are necessary for student engagement and critical thinking development (Jie and Kamrozzaman 365). In the end a balance between traditional human education and technology strengthens the learning experience and offers many pedagogical benefits.

AI use in EFL classrooms increases students' motivation and participation and enhances their engagement. AI makes learning more enjoyable and interactive through gamification and adaptive learning technologies such as challenges, badges, and leaderboards. Many studies proved that AI elevates enthusiasm and interaction among students through creating a sense of achievement and competition (Wollny et al. 12). Moreover, adaptive learning AI systems adjust the content to fit each student's need, so each gets personalized instruction that aligns with their skill level and learning progress (Krstić et al. 226). This alternative not only improves comprehension but also helps in increasing active participation, especially with students who do not find traditional teaching methods effective (Labadze et al. 5). Regardless of the motivation factor, overreliance on AI can lead to some issues. It can cause students to use less critical thinking and problem-solving skills and adapt to AI-generated answers (Jie and Kamrozzaman 374). In addition, games, if not integrated properly, will change students' focus from meaningful learning to just point accumulation, decreasing self-driven motivation (Essel et al., 2022).

AI is changing classroom interaction. Previously, teachers were the primary and only

source of knowledge, guiding instruction and managing classroom activities; this approach is known as teacher-centered. With technological advancements, students are able to find available and accessible information independently; students can also be responsible and direct their own learning without relying directly on the teacher (Chen, Chen, and Lin 75274). This change alters authority and control in the classroom and leads to a more student-centered approach (Wollny et al.12). Additionally, AI systems can provide immediate feedback and instruction, which may challenge the teacher's traditional role, particularly teacher authority in the classroom. Students may perceive AI as an alternative to the teacher's existence (Labadze et al. 5). Moreover, AI can perform tasks like grading and classroom management, thus teachers become less involved in the decision-making process (Celik et al.).

The integration of AI in education influences teacher-student interaction and classroom dynamics. Chatbots and virtual assistants facilitate the learning experience and create a student-centered environment where learners become autonomous. AI use, especially in gamification, increases the level of motivation among students. Despite the advantages of AI, it reduces direct interaction and teachers' presence in the classroom, which is essential in developing emotional intelligence, social skills, and critical thinking (Jie and Kamrozzaman 365.) When teachers and AI share responsibilities and technology complements rather than replaces human interaction, the learning environment becomes effective.

I.6. Conclusion

This chapter explores how AI is changing education. Information discussed focuses mainly on how EFL is taught and learned in an age where technologies are growing. AI evolution from ITS to adaptive learning platforms has altered language learning. These tools improved learning outcomes and assessment processes. However, AIED also presents some

challenges. Teachers need to learn how to use AI systems, address with ethical issues when using AI, and adjust to the new roles.

The integration of AI is also transforming the responsibilities of EFL teachers. In the past, teachers were responsible for classroom management, explaining lessons, and conducting evaluation and assessment. However, now, with the growing influence of AI, teachers' roles have evolved to analyzing students' data and guiding students on how to use technology and expand their knowledge by learning new skills. AI changed the pedagogical practices, affecting how teachers manage the classroom and interact with their students. Teaching became more flexible focusing more on learners. Which in turn are redefining the way teachers interact with learners and manage their classrooms.

Despite the growing interest in artificial intelligence in education, there are many gaps in the literature, especially in the field of EFL teaching and learning. One of the biggest issues is the lack of research on how AI can be adopted inside the classroom. The majority of the studies focus on AI's benefits in theory, which are available but still don't provide teachers with any practical evidence without classroom-based research. It is hard to understand the pedagogical effectiveness of AI in language learning.

Another gap is the lack of EFL teachers' perspectives in the previously conducted research. It's valuable and important for teachers to understand how AI can impact their roles, teaching practices, and professional development. Without taking teachers' voices into consideration, any recommendation or solution can be unrealistic and disconnected from reality. In addition, there isn't practical training or guidance on understanding how to use AI, as many teachers lack the digital skills. This is not only a research gap but also an issue that needs to be addressed in education.

In addition, recent research focuses on highly developed and well-equipped schools that have strong technological support. In the Algerian context, many public schools face problems in terms of technological resources, mainly a lack of equipment. Also, the limited training available in Algeria is another reason why teachers hesitate to adopt AI. These issues are not addressed in academic literature. Thus, it creates a blind spot on how AI can be used in those limited education settings and makes it hard to know specifically how AI could support teachers in Algerian schools.

To address gaps in literature, future research should deal with applied approaches focusing on what is actually happening inside the EFL classroom and how AI can interfere to improve EFL teaching and learning. It's important to discuss how AI can be used realistically, especially with low-tech and resource-limited schools, and to evaluate which tools are effective and accessible. In Algeria, it would be helpful to conduct case studies on how teachers and students interact with these tools in everyday lessons.

Moreover, teachers' perspectives should be prioritized in research. Understanding their challenges and experiences and considering their insights can reveal what's really working in terms of AI use, including the potential and the limitations. Research should also consider designing a training program that helps teachers to use AI tools ethically and effectively. These programs should be informed by both educators and tech experts.

While artificial intelligence has the potential to transform EFL teaching and learning, its long-term effects need further research. AI provides many benefits, like saving time, improving engagement, classroom management, and saving time. However, questions like, Does AI really help students to think critically? Does it help to improve the social skills and language use in the long term? need to be studied. It is essential for future researchers and

educators to collaborate to make sure that AI is used in a way that is pedagogically meaningful and adapts to the real needs of teachers and learners. They should also take ethical issues into consideration, like data protection, bias, and the risks of overreliance, and emphasize how AI should support rather than replace the teacher's role.

Chapter II

Data Collection and Analysis

Chapter II: Data Collection and Analysis

II.1. Introduction

To address the research questions, this chapter outlines the methodology used to collect and analyze data. At the beginning, the research design and the selected tools—questionnaires, follow-up interviews, and classroom observations—are explained. These techniques complement each other and were chosen to offer a clear comprehension of the research and a clear understanding of the study, ensuring a valid, comprehensive approach. A summary of the main findings is provided at the end of this chapter.

I.1. Research Design

This study followed a mixed-methods research design, using both qualitative and quantitative data. This design was selected to have a clear understanding and more insights on the personal and numerical basis of the Algerian middle school teachers' use of AI.

I.2. Research Target Population and Setting

This study includes 32 EFL teachers working in various middle schools across Algeria. The study was carried out in different middle schools in Tiaret and through online platforms, depending on participants' availability and accessibility. This combination allowed to cover a wide range of institutional and geographic contexts.

I.3. Research Sampling

A purposive sampling method was used to select the 32 EFL middle school Algerian teachers. Participants were chosen based on their relevance to this study, taking into consideration different levels of experience, ages, and institutional backgrounds. For the

quantitative part, 30 teachers completed a questionnaire. They were selected based on their involvement in the field of EFL teaching and their ability to reflect on relevant classroom practices where AI could be integrated.

For the qualitative data, ten teachers were interviewed, including teachers who just started their careers and more experienced teachers. Two interviewees among them are employed in Alrajaa private middle school, ensuring data gathered from a different institutional perspective. Participants were chosen through purposive sampling for their availability, willingness to contribute to this study, and also for their engagement in EFL instruction in Algeria. Additionally, the two study researchers who also serve as EFL middle school teachers were observed in their classrooms to gather contextual data on the real-life application of AI tools. All the data gathered from the questionnaire, the follow-up interviews, and the classroom observations gave a clear understanding of how AI is evolving the roles of Algerian middle school teachers, the challenges they face, and the support they need.

I.4. Data Collection Tools

To address the objectives of this study, a set of data collection tools was selected in alignment with the mixed-methods research design. These tools included a questionnaire, semi-structured interviews, and classroom observations.

I.4.1. Teachers' Questionnaire

The purpose of the teachers' questionnaire was to gather the points of view of Algerian middle school EFL teachers regarding the integration of AI in education. It was designed to explore various elements like: background, familiarity with AI, and attitudes toward its usage in education. The questionnaire consisted of 23 questions, including multiple-choice,

Likert scale, and open-ended formats, organized into three main sections: Background Information, AI Use in Teaching Practices, Attitudes, Reflections, and Needs (Appendix I). The questionnaire had to be distributed online to ensure accessibility and to reach a more diverse sample of teachers across the country. The responses help guide the follow-up interviews and serve as the foundation for identifying themes.

I.4.2. Teachers' Follow-up Interview

The purpose of the follow-up interviews was to develop a deeper understanding of the responses provided by the participants to the questionnaires; semi-structured interviews were chosen because of their flexibility and also to encourage Algerian EFL middle school teachers to share more details about their experiences.

The interviews were conducted individually with teachers to better understand their practices and attitudes toward the research topic. The discussion focused on key aspects, including the teachers' experience using AI in EFL teaching, challenges they are facing, their classroom practices, student responses to AI, and the impact of AI on their roles as Algerian middle school teachers (Appendix II). Each interview lasted around 15 minutes, most of them were conducted online due to the teachers' busy schedules and also to ensure variety: public and private middle schools' teachers and teachers from different cities in Algeria following the same national curriculum set by the Ministry of National Education. However, differences emerge in terms of working conditions and available resources. The answers were thematically studied to identify common patterns and viewpoints.

I.4.3. Classroom Observations

Classroom observations were conducted through a peer observation model, involving the study researchers who also serve as EFL middle school teachers. Each researcher

conducted an observation in the other's classroom. This part allows practical and contextual analysis on how EFL teaching roles are impacted by the integration of AI in real-life settings. This part of the study enabled both researchers to collect rich, first-hand data without disrupting the natural classroom environment. Each observation lasted about 50 min in each session and took place in a regular classroom. The observer used a grid to guide note-taking, focusing on areas such as the teacher's use of AI tools, classroom management, and student-teacher interaction, considering how the teacher minimized classroom disruption.

I.5. Ethical Considerations

Ethics were carefully upheld throughout this study. Participants were aware of research objectives and willingly participated. Informed consent was requested from every participant before data collection. To maintain anonymity of participants, they were referred to using codes instead of their real names. No identifying information was included in the final report. Data collected from questionnaires, interviews, and classroom observations were securely stored and used exclusively for academic purposes. Participants were also given the right to withdraw from the study at any point without any consequences. Efforts were also made to reduce subjectivity during classroom observations by using predefined observation criteria and maintaining neutral presence in the classroom.

I.6. Data Analysis

The study results and findings were analyzed in a systematic and a methodological way to ensure they addressed the research questions in depth. The data collected from the teacher's questionnaires, teachers' follow-up interviews, and classroom observations were

analyzed using a combination of qualitative and quantitative methods, depending on the nature of the data.

Descriptive statistics was used to analyze the questionnaire data, such as frequency counts and percentages in order to identify general patterns in their responses. Open ended responses were reviewed separately and grouped thematically to identify common patterns in teachers' attitudes, challenges, and reflections on AI use in the classroom.

Thematic analysis was used in order to analyze interview data, focusing on the mentioned themes regarding teachers' viewpoints, experiences, and difficulties using AI tools in their teaching practices inside and outside of the classroom. This made it possible to examine the interviewees' more complex perspectives in greater detail.

Lastly, a non-participant observation method was used. The researcher attended and observed a class to gather practical and real-time insights into how AI tools are used by teachers. This approach allowed for the collection of authentic data about teachers' strategies, student engagement, and infrastructural challenges. A broader perspective on the research subject was obtained by comparing and contrasting the results from each data set, guaranteeing a thorough and dependable analysis.

I.6.1. Teachers' Questionnaire Analysis

This section presents the findings obtained from 30 respondents who completed the questionnaire. The responses were both grouped and analyzed according to the main parts of the questionnaire.

I.6.1.1. Teachers' Questionnaire Part I : Respondents' Profile

This section includes questions on gender, age group, teaching experience, role in the classroom, and whether there is access to digital tools or not. The purpose is to identify the

demographic and professional profiles of respondents and understand how these factors might influence their point of view on AI integration.

❖ **Item 1: Specify your gender:**

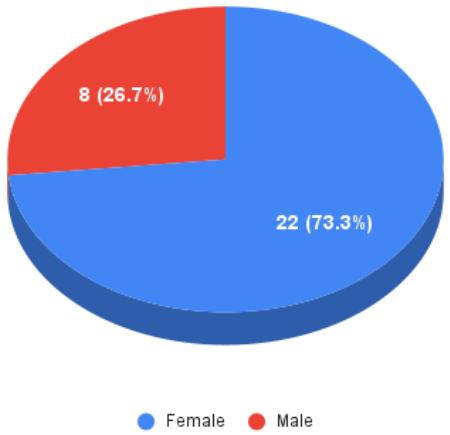

Fig4. Respondents' **gender**

Interpretation and Analysis: Figure 4 shows that most of the respondents are female (73.3%), while only 26.7% are male. This may reflect the general trend in Algerian schools, where women make up the larger portion of the workforce.

❖ **Item 2: Specify your age**

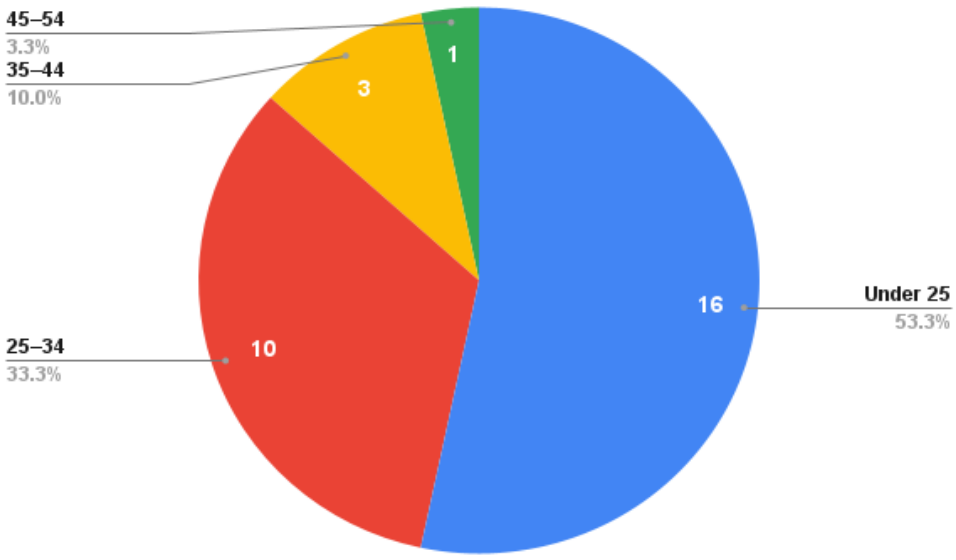

Fig5. Respondents' age

Interpretation and Analysis: Figure 5 shows that (53.5%) of respondents are under 25 years old, followed by 33.3% in the 25–34 age range. Only 10% are between 35 and 44, and one participant (around 3.3%) is within the 45–54 group. This indicates that the majority of teachers in the sample are relatively young.

❖ **Item 3: How many years have you been teaching English at the middle school level?**

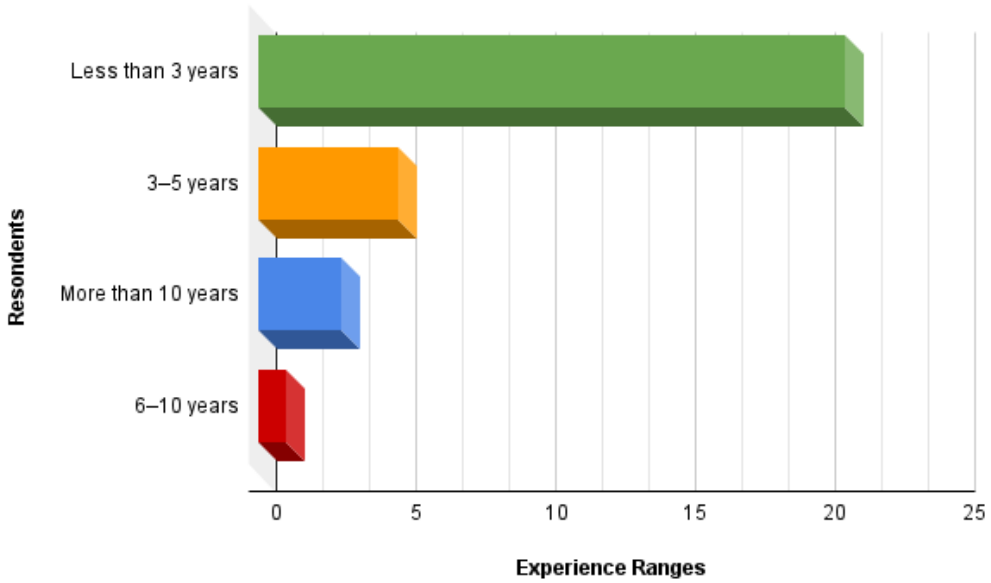

Fig6. Respondents' teaching experience

Interpretation and Analysis: Figure 6 illustrates that out of 30 participants, 21 have less than 3 years of teaching experience. This suggests that many of them may be recently recruited or fresh ENS graduates. Only five participants have between 3 and 5 years of experience, three participants have over 10 years, and only one participant has between 6 and 10 years of teaching experience.

❖ **Item 4: How would you describe your role in the classroom?**

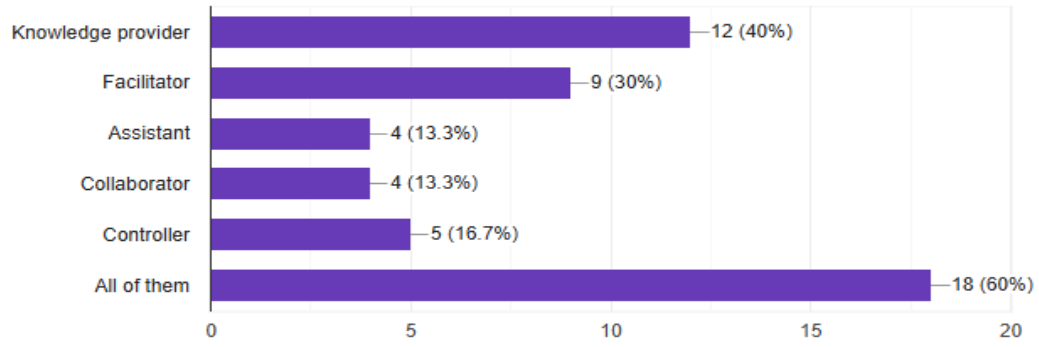

Fig7. Respondents' class roles

Interpretation and Analysis: Figure 7 illustrates how teachers describe their roles in the classroom. Most teachers (60%) state that they fulfill all the provided roles. This is followed by *Knowledge Provider* (40%), Facilitator (30%), *Controller* (16.7%), *Assistant* (13.3%), and *Collaborator* (13.3%) as the least selected roles. Results suggest that most teachers do not limit themselves to a single role.

❖ **Item 5: How would you assess the overall level of your students in class?**

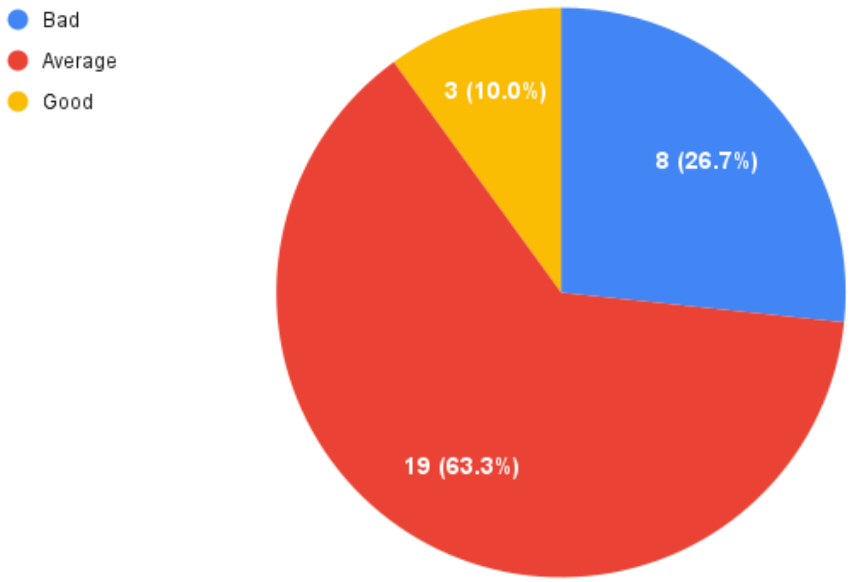

Fig8. Overall level of student in class

Interpretation and Analysis: Figure 8 shows that the majority of teachers (63.3%) rated the overall level of their students as average, 26.7% considered it bad, and only 10% rated it good. This may indicate a general concern about students' performance, pointing to bigger problems in middle school education, such as large class numbers or lack of interest among pupils towards languages.

Item 6: Do you have access to digital tools (e.g., internet, projectors, tablets, etc.) in your classroom?

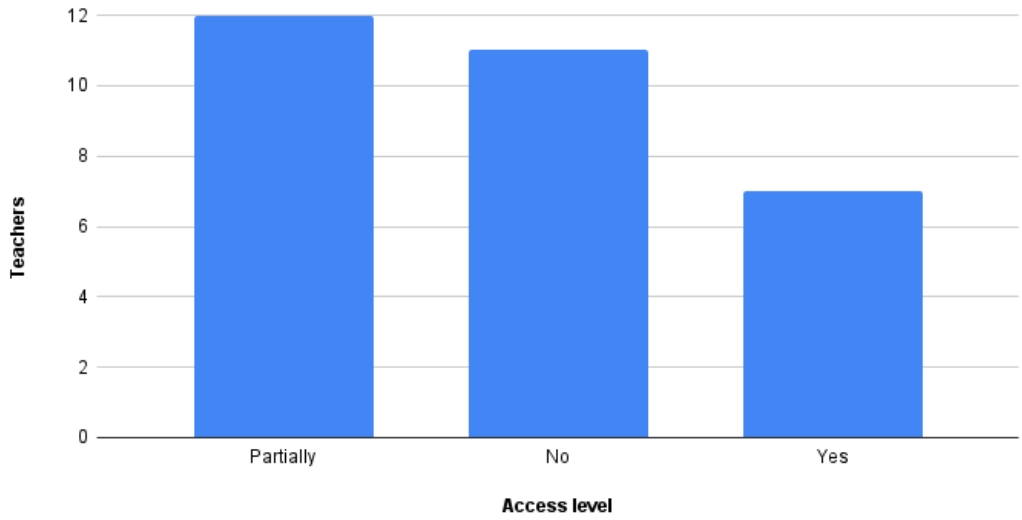

Fig9. Respondents' access to digital tools

Interpretation and Analysis: Figure 9 presents the responses given by teachers when asked if they have access to digital tools like: internet, projectors, or tablets in their classroom. The findings reveal limited digital access among participants, with only 8 teachers having full access, 13 reporting partial access, and 9 indicating no access to digital tools. These results show a divide in Algerian middle schools. While some teachers benefit from technology, others still lack the tools necessary. This lack of access might be due to the reliance on traditional methods or simply due to shortages in the schools.

I.6.1.2. Teachers' Questionnaire Part II: AI Use in Teaching Practices

This part is mostly exploring if teachers are familiar with AI, how it is used, and what they think about its usage, and does it really improve personalization, assessment, and lesson planning. It also focuses on their confidence when it comes to including AI in teaching and whether they believe AI has redefined their role or not.

❖ **Item 7: Are you familiar with AI tools (e.g., ChatGPT, Grammarly, Duolingo)?**

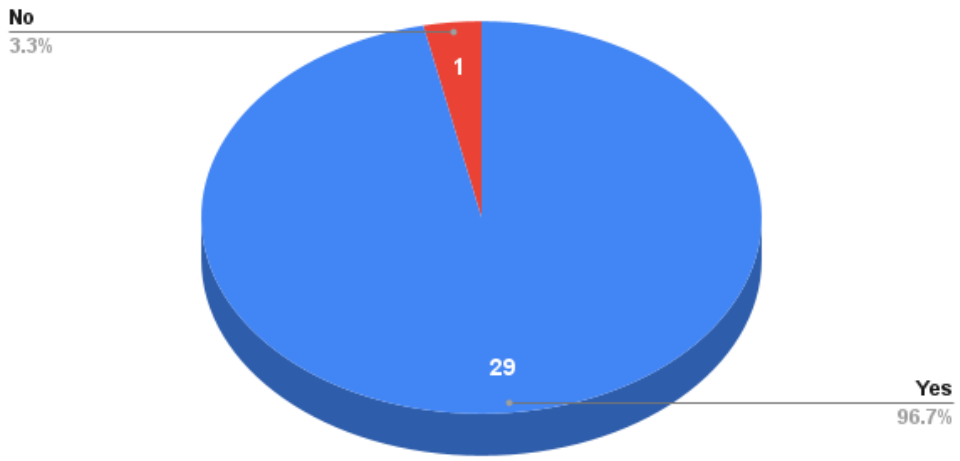

Fig10. Respondents' familiarity with AI tools

Interpretation and Analysis: Figure 10 presents teachers' familiarity with AI tools examples include: ChatGPT, Grammarly, and Duolingo. Findings indicate that the majority of teachers (29 out of 30) are familiar with AI tools, and only one participant being unfamiliar.

❖ **Item 8: Do you currently use any AI tools in your class?**

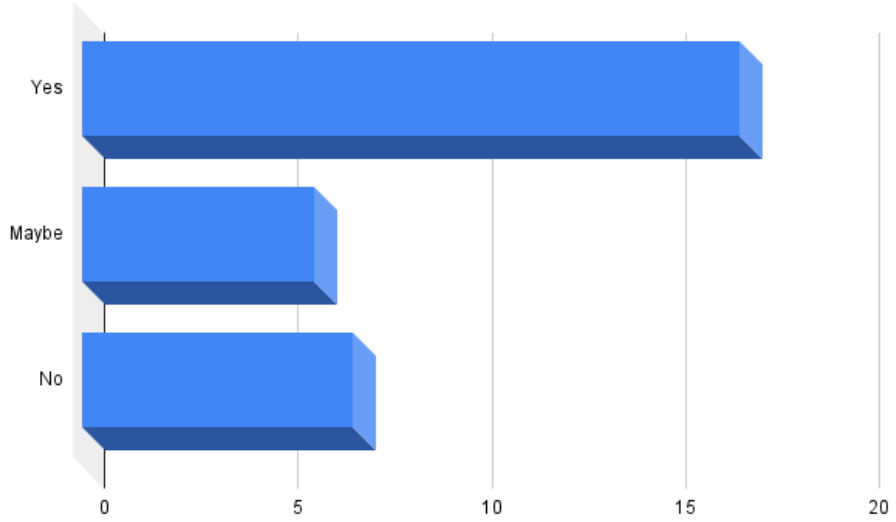

Fig11.Respondents' current use of AI tools in class

Interpretation and Analysis: Figure 11 presents teachers' current use of AI tools in their class. A majority of respondents (17 teachers) answered *"Yes,"* 7 teachers selected *"Maybe,"*. The remaining 6 teachers responded *"No,"*. These findings indicate that while many teachers are actively integrating AI tools in their teaching, a significant potion remain uncertain of lack access.

❖ **Item 9: Select the AI tool (s) you have used in your class.**

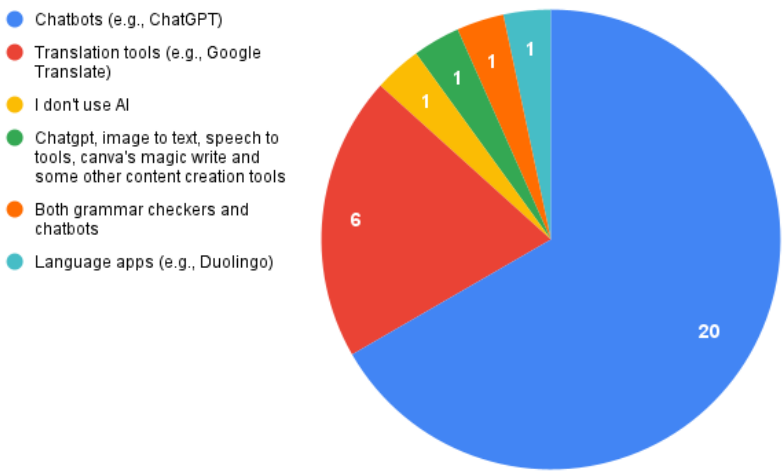

Fig12. Types of AI-based tools used by teachers

Interpretation and Analysis: Figure 11 shows that majority of teachers (20) use ChatGPT, making them the most commonly used AI tool. Translation tools were chosen by 6 teachers. Other tools, such as grammar checkers, language apps were each mentioned by 1 teacher. Only 1 teacher reported not using any AI tools. This indicated that the majority of respondents have been exposed to AI, but the extent of its integration varies.

❖ **Item 10: Do you feel that AI tools can support your teaching practices?**

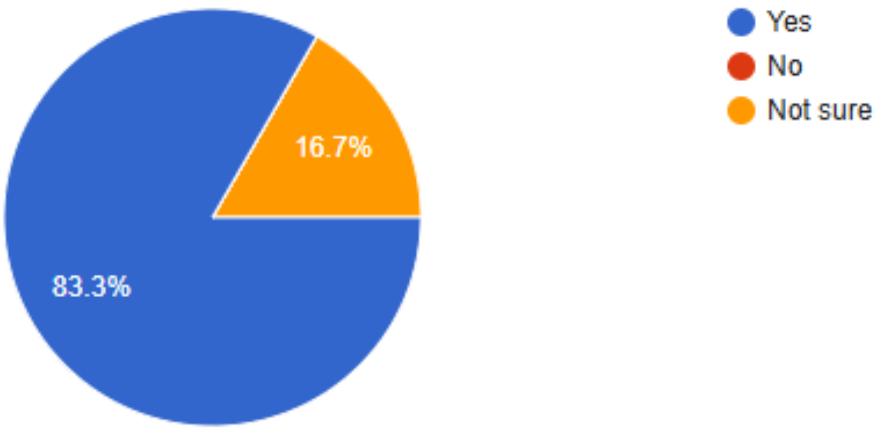

Fig13. Respondents' beliefs About AI supporting teaching practices

Interpretation and Analysis: Figure 11 illustrates teachers' responses to whether AI tools support their teaching practices. The majority (83.3%) answered *'Yes'* indicating a generally positive attitude toward AI and its usefulness in education. The remaining 16.7% were unsure, and no participants selected *'No'*. These findings suggest that while most teachers view AI positively, a small number may still lack the experience or knowledge needed to use AI effectively.

❖ **Item 11: To what extent do you agree with the following statement: "AI tools support me in making lessons more personalized and engaging."**

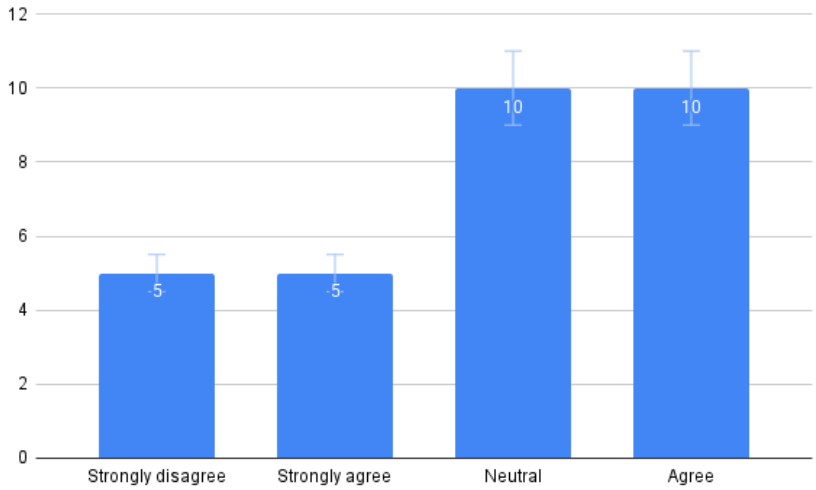

Fig14. Respondents' agreement with the statement

Interpretation and Analysis: Figure 14 shows teachers' levels of agreement to the idea that AI makes lessons more personalized and engaging. 50% of teachers agree or strongly agree, while 33% remain neutral. On the other hand, 16.7% of them strongly disagree. Showcasing the openness to the benefits of AI but also revealing that more support may be necessary to fully convince all Middle School EFL teachers of its value for making lessons both personalized and engaging.

❖ **Item 12: How confident are you in integrating AI tools into your classroom?**

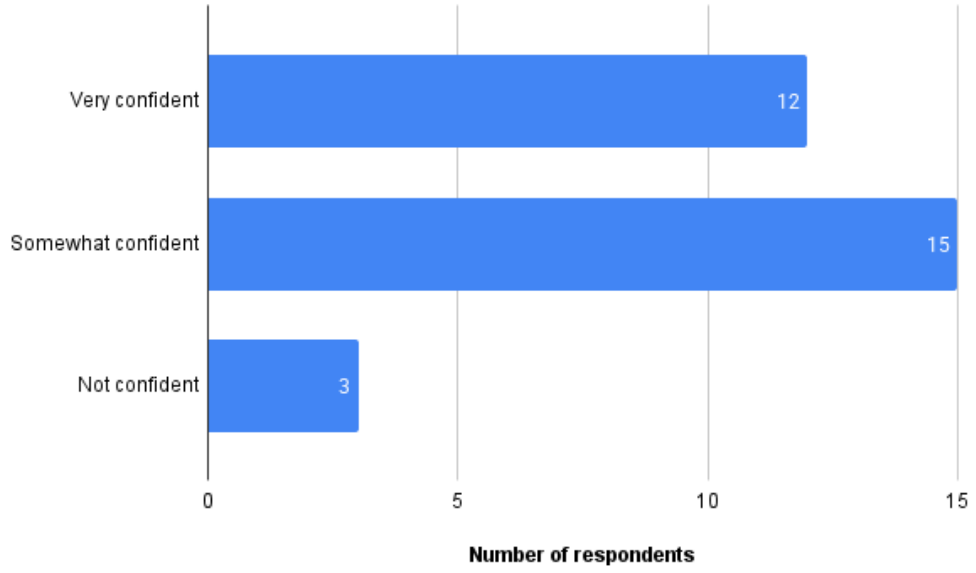

Fig15. Respondents' confidence in integrating AI into the classroom

Interpretation and Analysis: As shown in the figure 15, most teachers are either somewhat confident (15) or very confident (12) in integrating AI tools into teaching. Only 3 teachers stated they were not confident. These results indicate a generally positive attitude towards integrating AI in education. Teachers are more open to the idea of using AI in their classrooms, even if they don't possess the full competence of integrating such tools.

❖ **Item 13: What challenges do you face when using AI tools in teaching?**

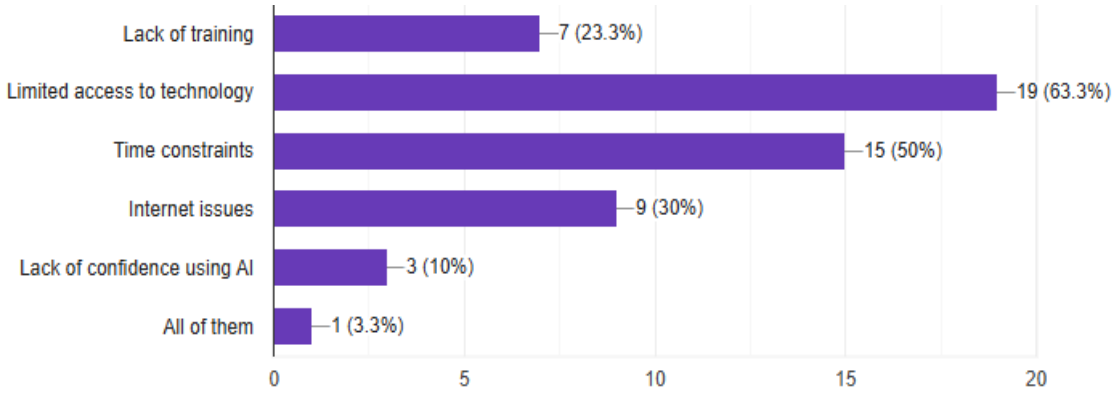

Fig16. Reported challenges in using AI tools in teaching

Interpretation and Analysis: Figure 16 shows that the most common challenge identified by teachers is limited access to technology, reported by 19 participants. Time constraints were also frequently mentioned (15 times), followed by internet issues (9 mentions). Seven participants reported a lack of training, while three mentioned a lack of confidence. Interestingly, one teacher selected all of the listed challenges. These results indicate that the integration of AI in classrooms is made difficult by several overlapping issues.

I.6.1.3. Teachers' Questionnaire Part III: Attitudes, Reflections, and Needs

This section examines the needs, attitudes and reflections of teachers. It explores their point of view on the benefits of AI in student assessment, its effect on teachers' roles and also teaching methods, and finally how it can help them address the needs of different learners.

❖ **Item 14: Do you feel that AI tools are useful in assessing students' progress?**

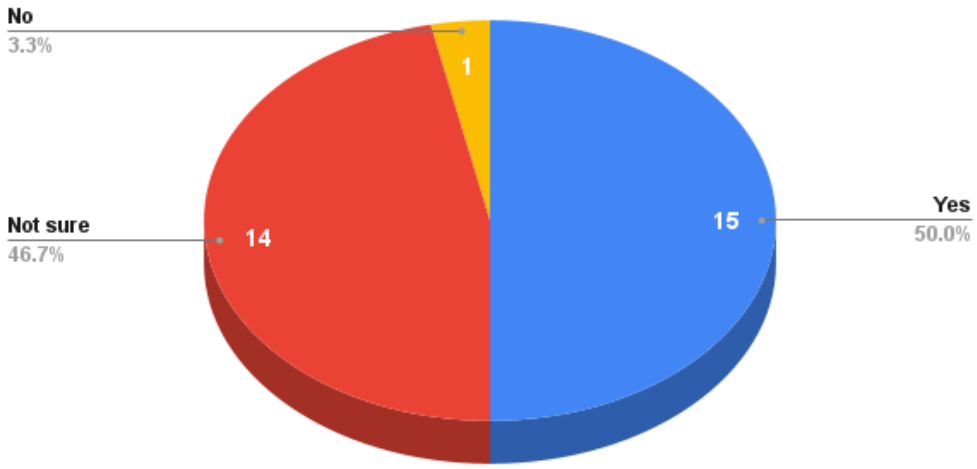

Fig17. Respondents' perceptions of AI tools for assessing student progress

Interpretation and Analysis: Figure 17 presents teachers' perceptions of using AI tools to assess students' progress. Half of the respondents believe that AI can support assessment. A nearly equal number (46.7%) are unsure, and only one teacher answered *"No,"*. These results reveal a generally positive attitude toward AI's role in assessment with very low opposition. However, the high number of uncertain responses suggests that many teachers may lack experience with AI tools or it might simply mean that those teachers have never used AI as an assessment tool.

- **Item 15: To what extent do you think the use of AI has changed the teacher's role in the classroom? (Scale from 1 to 5)**

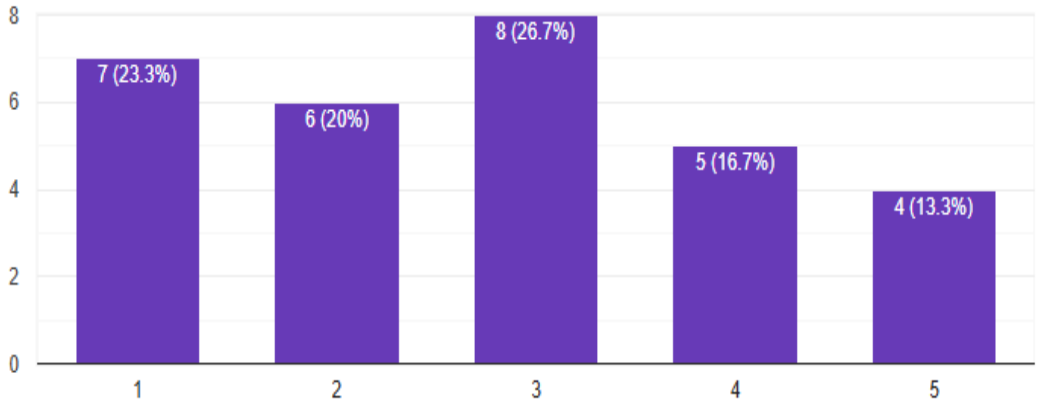

Fig18.Respondents' perceptions on how AI has changed their role.

Interpretation and Analysis: Figure 18 shows teachers' perceptions of the extent to which AI has changed their role in the classroom on a scale from 1 (not at all) to 5 (completely). Respondents gave a range of answers, but the most common rating was 3. A notable number of teachers selected 1 and 2, while others chose 4 and 5, suggesting a significant shift. This distribution reflects a mixed perception among teachers, as they have different opinions about

it. Some say that AI has not changed their role much, but others say that it has changed drastically. The results likely reflect differences in how much teachers have been exposed to AI or how easy it is for them to use AI tools in different teaching situations.

❖ **Item 16: How has AI influenced your classroom practices?**

- **Lesson planning and generating resources:** Many teachers agreed that AI tools save time and energy by providing resources that are very useful for planning lessons.
- **Personalization:** Others believed that AI can help adapt and tailor the content to meet the different needs of learners.
- **Student Engagement:** Some teachers said that AI improved student motivation and classroom dynamics.
- **No Influence:** A number of teachers said that there is no influence whatsoever, often due to limited use or familiarity with the tools.

❖ **Item 17: Do AI tools help you better meet individual student needs?**

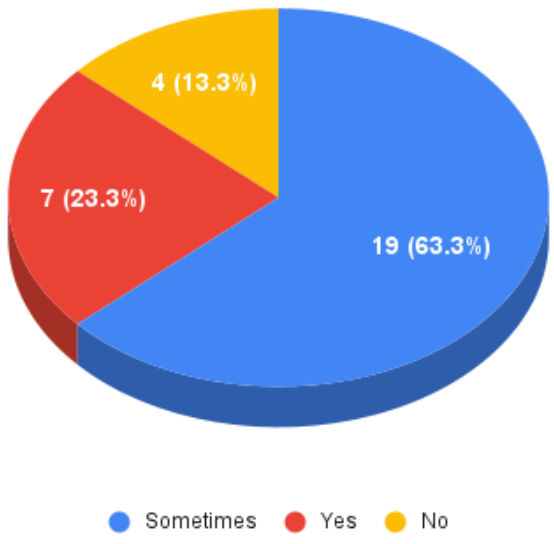

Fig19. Respondents' perceptions of AI tools in meeting individual student needs

Interpretation and Analysis: Figure 19 shows teachers' responses to whether AI tools help them better meet individual student needs. The majority (63.3%) responded *"Sometimes,"* followed by 23.3% who answered *"Yes,"* and 13.3% who selected *"No."* This suggests that while teachers see potential in AI, there is still some uncertainty or limited use in addressing individual differences. This highlights the need for more support and training to help teachers use AI tools more effectively.

❖ **Item 18: To what extent have AI tools influenced your interactions with students?**

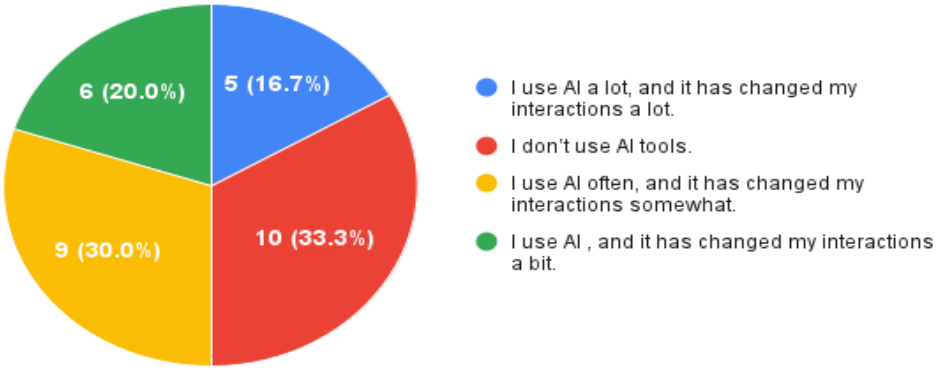

Fig.20 AI's influence on Teacher-Student Interactions

Interpretation and Analysis: Figure 20 presents teachers' responses regarding AI's influence on teacher-student interactions. The results show varied experiences. A significant number (33.3%) reported not using AI tools at all, while 30% said AI has influenced their interactions. Another 20% observed a small change, and 16.7% reported more noticeable changes. This suggests a growing trend in AI adoption with some teachers acknowledging its potential to enhance teacher-student interactions. However, the high number of teachers who are not using AI indicates that many of them may either lack access to AI tools or have not yet been introduced to them.

❖ **Item 19: Have you received any training on how to use AI or educational technology?**

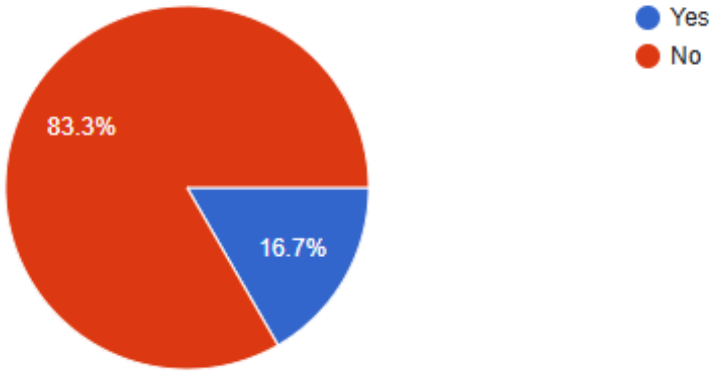

Fig21. Respondents' training on AI or educational technology

Interpretation and Analysis: Figure 21 illustrates teachers' responses to whether they have received any training on AI or not. The majority of participants (83.3%) reported not receiving any formal training, while only 5 respondents (16.7%) said they had received some form of training. This huge lack of training may be due to many factors, for example: inadequate school buildings, lack of funding, or delays in introducing technology into education.

❖ **Item 20: Do you think AI tools could replace teacher's roles in the classroom? Why or why not?**

Teachers were asked to give their points of view about AI replacing teachers in the classroom. The majority were against the idea, highlighting the importance of human qualities like emotional support and empathy in teaching, as many believe without any doubt that human interaction, which AI lacks, is irreplaceable. Others stated that AI is just a tool for support, not a substitute. Only 4 teachers expressed an openness to the idea, suggesting it might be possible. To sum up, most teachers are aware of the changes AI will bring to the field of teaching, however, AI is still viewed as a tool, partner, not as a threat or a replacement.

❖ **Item 21: Would you be interested in AI training programs?**

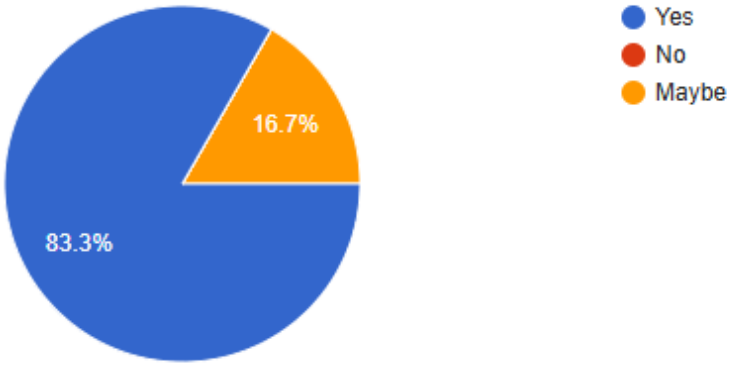

Fig22. Respondents' interest in future AI training programs

Interpretation and Analysis: Figure 22 illustrates whether teachers are interested in receiving future training on AI integration in education. Out of 30 respondents, a majority (83.3%) expressed interest, while the remaining (16.7%) responded with "maybe." Notably, no participants rejected the idea of training. It is evident from the findings that teachers, despite a lack of formal training as mentioned before, are interested in and willing to participate in future AI training, which reflects strong professionalism and a desire to adapt and evolve. Teachers are aware of the growing trend of AI, and they seem eager to gain the skills needed to effectively incorporate AI in their classrooms.

I.6.2. Teachers' Follow-up Interviews Analysis

The interviews were semi-structured. While a set of guiding questions was prepared in advance, follow-up questions were asked depending on participants' responses to explore certain ideas more deeply

- **Item 01:** What motivated you to start (or not start) using AI in your teaching practices?
- **Item 05:** What do you believe are the biggest misconceptions teachers have about using AI in the classroom?

- **Item 10:** Do you think AI can replace any teaching roles, or will it always remain a tool? What makes you think so?

Analysis: Items 1, 5, and 10 were analyzed together because they collectively reflect the perceptions and attitudes of teachers towards AI. EFL teachers who participated in this study had a positive attitude about AI. They acknowledged AI's role in saving time and that it is a tool that has many benefits, like enhancing creativity and students' engagement. Interviewees 01, 04, and 07—younger public-school teachers—agreed that AI motivates them to make their lessons more interesting and less boring. Older teachers with more experience in teaching described AI as a blessing, mentor, and time-saver; however, interviewee 10 described AI as a "double-edged sword," arguing that it is useful but must be used with caution. EFL private school teachers explained how AI is helpful; interviewee 05 in particular was influenced by international teachers to incorporate AI into her teaching practices. Despite these positive views, there are many misconceptions when it comes to AI. Interviewees 01, 04, and 06 mentioned that some of their colleague's fear that AI may replace human teachers. Interviewees 03 and 07 disagreed, arguing that AI can't replace humans' critical thinking and connection. Interviewee 05 noted that overreliance on AI can diminish creativity, especially when it comes to teachers who don't understand it well. The general attitudes varied between optimism and caution in which AI is perceived as a support tool.

- **Item 02:** Based on your experience, which AI tools have proven most effective or beneficial in your EFL classroom? Why?

Analysis: This question aimed to explore the practical use of AI tools in EFL teaching. Teachers' use of AI depends on their teaching experiences, context, and also their students'

needs. Younger interviewees mentioned Grammarly, QuillBot, Duolingo, Canva, Kahoot, Quizlet, MagicSchool, NaturalReader, DeepSeek, and Bard as tools they integrate into their teaching practices. ChatGPT, in particular, is the most used. These tools are used for general language support, as interviewee 2 mentioned that QuillBot and ChatGPT are tools that help pupils self-edit and brainstorm ideas. Interviewee 03 and 06 use ChatGPT to improve lesson content, provide grammar explanations, and generate teaching materials. Interviewee 05 uses Canva AI features (AI- generated images) to create flashcards and visual aids for 1MS pupils, as quoted, "AI is integrated nearly in every lesson." AI also supports teachers in listening generation of scripts and content generation in general. Among younger teachers aged between 22 and 25, AI is seen as a creativity booster, and they are highly enthusiastic about it. Most have already integrated AI into their lesson planning and classroom activities. Teachers aged 28 and more are more reserved and strategic in use. They view AI as a tool that supports teachers behind the scenes. They use it for content clarification, test preparation, and lesson planning. Participant 09, for example, uses AI when preparing his lessons; however, he finds it difficult to use AI directly in Algerian middle school classes. AI was described as a “blessing” and also” mind-blowing”; however, its actual classroom use remains limited.

- **Item 03:** How has your role as a teacher evolved since incorporating AI? Do you feel more like a facilitator, guide, or something else?

Analysis: This item focuses on the changes in the teachers’ roles due to the integration of AI, which aligns with the learner-centered approach that is being highly encouraged to be adopted in EFL middle school teaching, and the use of AI is supporting it. In an era where AI is taking over. Teachers described their role as more of a learning facilitator than a

knowledge provider. Most described themselves as facilitators and guides. As interviewee 03 stated, "Since I started using AI, my role has evolved from simply delivering knowledge to facilitating and supporting the learning process." Interviewees agreed that AI lacks aspects of human intelligence, inspiration, and human adaptability. Despite its usefulness, all participants agreed that AI can never replace their roles as teachers; however, some teachers believe that AI can take over some functions and replace some tasks. Interviewee 06 mentioned some examples: "AI can assist with tasks like grading, lesson planning, and providing personalized feedback." Interviewee 10, on the other hand, acknowledged that machines can't replace human efficiency, saying it's "nearly impossible.

- **Item 04:** What are some challenges that you regularly face with AI integration in your school environment? How do you overcome them?

Analysis: This item addresses the challenges and barriers to AI integration. One of the major challenges is the lack of technological resources. The three interviewees 1,4 and 6, mentioned they have poor internet access in their schools as well as limited to no technological devices available. Interviewees 06 and 07 talked about how some of their colleagues lack the essential skills to use AI tools. They also argued that there isn't any training available on how to integrate AI into their teaching practices; this lack of digital literacy contributed to resistance to AI use. Contrarily, interviewee 05 noted how overusing AI or misusing it can lead to some consequences: "It's the overuse that might result in it being tiresome for me as a teacher and for students to not have a normal session." Interviewees 08, 09, and 10 have fewer challenges as they use AI in the preparation more than in actual classroom activities. They acknowledge that AI integration is harder with young adults (middle school learners). Some interviewees also commented on how students

are overdependent on AI. Like interviewee 03 mentioned," Sometimes students rely too much on it or trust answers without checking." Some even report no challenges but rather benefits.

All in all, some teachers seemed to be experimenting openly with AI and suggested some coping strategies; others showed more awareness and some boundaries when integrating AI.

- **Item 06:** How do your students respond to AI tools? Are they enthusiastic, confused, resistant?

Analysis: This item examines students' reactions and outcomes. Teachers highlighted the importance of classroom atmosphere when teaching EFL, as interviewee 05 explained how passionate her pupils are about learning, Alhamdulillah. I've always seen them excited to start the lessons because they know I always bring something new. It has always been a matter of "treatment agreement": you give, and I give (good behavior and focus = fun learning and rewarding), so I am confident on how my students are to react every time I enter the class." Most teachers agreed that their students react to AI with enthusiasm and curiosity. Interactive and fun learning using AI stood as a motivator among younger teachers, as interviewee 06 stated, my students are generally enthusiastic about AI tools. They find them exciting and enjoy how they make learning more interactive and fun." Interviewee two believed her pupils were confused when introducing AI, while interviewee 07 preferred traditional methods because her pupils are not exposed to these tools. She preferred to adapt different teaching materials, including AI, to create balance. Interviewees 09 and 10 also didn't use AI tools directly with their learners. They saw a great potential in AI for improved outcomes, but they also recognized the limits. Overall, the success of AI

depends on how it's used inside of the classroom, the learner's age and exposure, and also the teacher's guidance.

- **Item 07:** Do you feel your in-service training or academic studies equipped you to use AI tools effectively? What's missing?

- **Item 09:** Would you support the inclusion of AI training modules in in-service teacher training? Why or why not?

Analysis: These items explore teachers' readiness and preparation for AI use, as well as their perspectives on the need for AI-focused training. All teachers agreed that their academic studies didn't provide any training on how to use AI. They explained how they elaborated most on traditional teaching methods missing hands-on training or real-life examples known as "application- focused learning." However, several teachers agreed that they put effort into learning new technologies and adapting them in their teaching practices. As interviewee 03 stated, "Most of what I know, I had to learn by exploring on my own." Teachers strongly supported the inclusion of a training. They believed AI improves personalization and needs to be seen as a necessity in this century. They suggest regular workshops and real classroom examples as well as training days. AI training would help teachers to adopt modern tools effectively. Interviewee 01 supported," I strongly support the inclusion of AI training modules in in-service teacher training because teachers need to be equipped with strategies to integrate them meaningfully." Interviewee 02 only was concerned, believing AI would hinder teachers' creativity.

- **Item 08:** How do you imagine the future of AI in Algerian EFL classrooms five years from now? What changes do you foresee?

Analysis: Item 08 addresses teachers' insights and recommendations on AI integration and the future of the Algerian EFL field. The viewpoints varied when asked about the change that might occur within 05 years in Algerian EFL classrooms. Interviewees 01 and 02 were pessimistic, accepting no change. In contrast, other teachers predicted AI integration into EFL teaching and learning. Interviewees 05 and 03 noted how AI will be used for feedback mechanisms and outside of the classroom by pupils to practice speaking and writing, supporting a broader range of learning styles. Another realistic viewpoint was explained by interviewees 06 and 07. They see a potential in AI, however, only in private schools. Unless infrastructure, training, and class size issues are addressed. AI cannot be fully adopted; accordingly, emphasize ministry support. Older teachers perceive AI as part of a larger reform. Interviewee 09 expressed deep frustration when it comes to EFL teaching in Algeria: "It's a dilemma, wallah. Teaching is still suffering, starting from the whole program first, then providing schools with the tools that can promote the use of AI in classrooms. Ideally speaking, everything is perfect. We just need to add AI. But in real life, teaching is bleeding". Interviewee 10 suggested some recommendations for these issues, for example, curriculum revision to align with AI, and providing necessary equipment for both teachers and learners.

- **Item 11:** Teachers who don't use AI

Analysis: Despite the growing interest in AI, many Algerian EFL teachers still don't integrate it into their teaching practices. Many teachers were asked why they do not use AI, and the reasons differ. Some teachers didn't understand what is meant by artificial intelligence, and they have less exposure to technological devices. They preferred traditional ways, and they are resistant to change. Others were open to change, especially with this

generation arguing how their ways of learning differ from the previous pupils they taught. This generation is more visual and kinesthetic, demanding new techniques and methods of teaching. These teachers emphasized the need for training, as they are unprepared on how to use AI effectively. Another reason was the limited infrastructure. It's impossible to use AI with an overcrowded classroom; equipment would be insufficient, which poses a significant barrier, especially in public schools. Moreover, there is a level of reservation and doubt among experienced teachers who view AI as a tool that might reduce their creativity. Until these challenges are addressed through targeted training, curriculum reform, and better school resources. AI use in Algerian EFL classrooms is likely to remain limited.

I.6.3. Classroom Observation Data Analysis

I.6.3.1. Classroom Observation Session 1

The first observed class took place on 05/01/2025 in Bakr Ben hammed middle school entitled I Listen and Do, with third year middle school pupils delivered by the teacher-researcher Meguenni Anfel. The lesson followed a pre-, during-, and post-listening instructional framework incorporating AI-generated materials (vocabulary visuals, an audio script about Prof. Belgacem Haba, and a lesson plan generated by AI and adapted by the teacher to suit her pupils' needs).

The teacher started the lesson by greeting her students and announcing the start of the new sequence. She pins AI-generated pictures on the board related to the theme of "science." She asked learners to describe what they were seeing and guided them to guess the theme of the new sequence "Sequence 03: Me and My Scientific World". In the pre-listening stage, the teacher introduced key vocabulary through a matching activity clearly explained by AI-generated content. The teacher then asked them about famous Algerian scientists they know

to share their ideas. Followed by the during-listening phase, learners listened to the first and the second part of an AI-generated audio script, which provided biographical details about the famous Algerian scientist Professor Belgacem Haba. They took notes and answered comprehension questions. In the post-listening stage, pupils completed Professor Haba's ID card in pairs to use it to write his biography. Teacher encouraged her pupils to finish their draft in class and then use a tool called Grammarly at home to revise and improve their writing. This step allowed learners to receive immediate feedback on grammar, spelling, and clarity, helping them notice errors and rephrase sentences.

The analysis revealed several important insights. AI supports lesson planning preparation and provides enriched materials and content. The use of AI-generated pictures in the warm-up phase attracted the pupils' attention and contextualized the topic. Pupils laughed and commented but also were engaged with the lesson, participating and sharing their ideas. The teacher's use of AI created a positive atmosphere. The listening script generated by AI used during the listening phase was engaging and level appropriate. At first, some pupils recognized that the content was generated by AI familiarized with AI tools. Then, they focused on getting the right answers to tasks such as true/false, matching, and gap-fill exercises. The students were able to extract and process relevant information effectively. However, the teacher showed caution when dealing with AI-generated content; she simplified some terms that didn't align with their pupils' linguistic level, highlighting the necessity of pedagogical expertise even when using AI tools Despite the success of the lesson, there were some technical limitations. Learners require focus, as the teacher relied on a single speaker, which posed some audibility challenges in such a large classroom. It would be better if the teacher used a projector to display the pictures so they would be visible to all pupils. The

teacher also should've explained what Grammarly is and how it's used; few pupils understood, while others showed confusion. The observation suggests that AI was helpful but can never replace the teacher. The teacher's speaking time in the classroom was limited, and her role was more of a monitor, giving more time to pupils to practice the language and engage more. In the Algerian EFL context, AI serves as a complementary tool.

I.6.3.2. Classroom Observation Session 2

The second observation session took place on January 15th, 2024, at Abou El Yakadane Middle School in KsarChellala, Tiaret, with third year middle school class consisting of 37 pupils, taught by Mr. Saibi Walid. The lesson was part of sequence 2 "Me and my lifestyles" from the official yearly plan (Ministry of National Education 6), entitled I listen and do, clearly a listening session. The students were supposed to interpret an oral message about Jenny, who is interviewing her grandmother about life in the past, specifically talking about clothes and school uniforms. The lesson followed a PDP framework (Appendix V), with a focus on both listening and speaking.

The teacher relied on three main AI tools throughout the lesson: Luzia, WellSaid Labs, and ChatGPT. During the pre-listening phase, he used Luzia which is an app that incorporates AI to do tasks such as solving problems, creating images, and summarizing. Luzia was used here to generate images of characters dressed in old- fashioned clothes. Thus, establishing the context of the listening situation. This app is a particularly advantageous option due to its availability on mobile devices and accessibility for everyone. However, it is evident that the teacher should have provided the name of the tool and instructed the pupils on its usage. Pupils were mostly motivated and interested in the topic, indicating the importance of modern teaching methods. In the pre-listening stage, Mr. Saibi used WellSaid which is a text-to-

speech AI tool, to generate an audio recording of a fictional interview between a British girl and her grandmother discussing childhood memories. The teacher presented the audio twice and asked his pupils to do the activities. During the post-listening phase, and after finishing the activities, the teacher asked some of his pupils to use ChatGPT to generate pictures of the grandmother's clothing descriptions from the audio. For this, the teacher brought a personal laptop and shared prompts to help students create images collectively and share them with the rest of the class using a projector. For example, "Generate an image of an old woman wearing a long dress with a white headscarf."

Many notes about the teaching practices and student interaction were observed and taken into consideration. First, the lesson was structured well, and it aligned with the objective of the lesson. Next, AI tools were used to generate content, and they were embedded in each stage of the lesson. Then, the teacher appeared familiar with AI tools, showing strong confidence, and most students appeared interested and excited, especially during the first and the last phases. While AI was used primarily with teacher guidance, some students interacted with the ChatGPT independently once introduced to the image-generation feature. It is worth noting that despite the effective use of technology, the teacher encountered major challenges due to infrastructural limitations. The classroom did not have any internet access, and the teacher relied on his personal mobile data. Moreover, there were no available power outlets besides the teacher's desk, forcing the teacher to move his laptop and projector during the session to one of his pupils' tables, causing both time and focus loss.

In conclusion, the incorporation of AI into this classroom without any doubt helped enrich the learning experience. However, the session also revealed a dire need for more explanations and better infrastructure. Although AI enhanced the lesson delivery in many

ways, the teacher himself remained paramount to the flow of the lesson, indicating that AI serves as an essential complementary aid, not as a substitute. It must be emphasized that future efforts should concentrate on the preparation of classrooms for digital integration and also training students to better understand and utilize AI tools for language learning.

I.7. Discussion

Three data collection tools (teachers' questionnaire, follow-up interviews, and classroom observations) were used to investigate and obtain findings regarding the evolving roles of Algerian middle school EFL teachers in the AI era.

Firstly, the questionnaire results showed that the majority of Algerian EFL teachers are familiar with AI tools, with ChatGPT being the most popular one, even if their actual use in classrooms remains limited. On one hand, many participants acknowledged AI's potential benefits, particularly in personalizing learning, saving time, and creating materials. On the other hand, a significant number of them highlighted infrastructural and pedagogical obstacles; examples include lack of training and limited access to technology. Overall, most teachers expressed a willingness to learn and adapt, with 83% reporting that they are interested in future training programs.

These findings were reinforced through the interviews, as data analysis of the teacher's follow-up interviews has shown that despite AI's many advantages and potential benefits, it is still viewed merely as a teaching aid, but not as a replacement for teachers, as it cannot replicate the human connection nor the emotional intelligence. Teachers did acknowledge the role of AI in enhancing both creativity and engagement, but they also raised questions about students' reliance on AI and the absence of formal training. It was also noted that private schools had better equipment, such as stronger internet connection,

the availability of laptops and data shows, and smaller class sizes. These factors allowed for more flexibility and a higher ability to integrate AI tools into teaching, compared to public schools where such resources were often lacking.

These insights were further validated and extended by classroom observations. In both of the observed sessions, AI was successfully integrated into lessons. This incorporation actually enabled the generation of audio and visual content, as well as the personalization of tasks and the engagement of learners. Several practical challenges were observed, including lack of infrastructure and time lost due to equipment problems and internet limitations. It was clear that while AI enriched the lessons, it did not substitute the teacher's role. Instead, teachers remained central for lesson delivery.

I.8. Conclusion

A complex but hopeful picture is revealed by the combined analysis of all three data sets. Overall, most Algerian middle school EFL teachers, particularly the younger generation, are showing a positive attitude and great willingness to incorporate AI. Data revealed that AI integration can be possible, and teachers are open to this change. They expressed that AI facilitates many teaching tasks, enriches lesson content, and helps in pupils' engagement. However, certain challenges are faced, including a lack of resources and proper training in real classroom settings and an absence of policies on AI use in education. The majority of teachers argued that AI is a valuable support tool rather than a threat to their profession. They emphasized that AI can never replace the human presence in education. Emotions, empathy, and ethical judgement are qualities technology cannot imitate. While AI may reshape certain aspects of teaching practices, it does not diminish the importance of the teacher's role. AI integration in Algerian EFL classrooms is not just a matter of technological readiness but also

of a systematic transformation. For it to be successful, there must be targeted training and policy reform as well as real investments in school infrastructure. In order for AI to truly transform teachers' roles, this support should align with the needs of teachers as well as Algerian pupils' needs.

General conclusion

General conclusion

Regarding the use of AI widely and its integration into the education field, this study set out to explore the evolving role of EFL middle school teachers in Algeria in the scope of this technological shift. Understanding how Algerian teachers perceive these tools is crucial to identifying the challenges they face and the adaptations they need and future recommendations so AI would be used effectively in EFL classrooms. The success of EFL education in Algeria depends on equipping teachers to embrace and lead a change rather than resisting it.

Chapter one laid the theoretical foundation of this thesis, focusing on the relationship between artificial intelligence and EFL teaching. It began with an overview of how AI technologies gradually developed to be used in educational contexts around the world. In EFL specifically, AI offered many benefits, mainly promoting personalized learning and facilitating assessments. Also, tools like writing assistants, chatbots, and adaptive learning platforms were proven to be effective in language learning. This chapter also highlighted how traditional EFL teachers' roles are changing with the integration of AI. Rather than being the only source of knowledge, teachers are now expected to support and guide their learners. Teachers also require new competencies and skills, such as digital literacy and the ability to evaluate AI tools before and during using them to avoid any bias or lack of contextual understanding. The final section of this chapter discussed the pedagogical implication of AI in EFL classrooms and how the relationship between the teacher and learner is changing. The first chapter revealed that AI is not only a tool but also a factor that is impacting the field of EFL teaching and learning. The second chapter, on the other hand,

focused on the research methodology. In this study, three main methods were used to collect and analyze data. Starting with the questionnaire, which offered a broad view on teachers' perspectives on AI and its use in EFL teaching, it revealed that teachers are familiar with these tools; however, most didn't use them inside the classroom and remained as a tool to support the teacher in the preparation phase. Follow-up interviews were conducted then to reflect deeper on teachers' experiences with AI. Participant teachers were open to training on how to use these tools. These interviews also allowed them to uncover the challenges they face when incorporating AI. Meanwhile, the classroom observations helped in getting a more realistic view on how AI tools can be implemented inside the classroom; it revealed that lack of infrastructure was a real issue to address. Combined, this research captured the conceptual and practical implementation of AI and its use inside Algerian schools.

The findings of this research bring attention to the benefits of AI and emphasize the fact that it holds a significant potential to improve the field of EFL education in Algeria. AI can adapt content to suit different students' needs; it gives instant feedback and helps track their progress. It also saves time and generates tools that are engaging for learners. However, there are also challenges to be faced when it comes to Algerian schools. Many schools lack access to digital infrastructure; most teachers haven't been trained on how to use AI, and there are many privacy and ethical concerns. Accordingly, this shift requires rethinking traditional roles of Algerian middle school EFL teachers. They will no longer be the knowledge provider; rather, they'll become facilitators. Teaching in the AI age needs a strong digital competence along with a change in teaching methodologies. Reflection and critical evaluation of AI tools are a necessity in order to effectively adopt them. A reform in classroom dynamics is expected with this fast-paced advancement. Despite the benefits of

AI, it can never replace human teachers.

This research aimed at answering key questions that gave a clear framework for investigating key themes: the effects of AI on Algerian middle school EFL teachers, the challenges they could face, and how training can better support its integration. The hypotheses suggested that AI could change teachers' roles, requiring them to develop new competencies in their teaching practices; that teachers would face certain challenges, such as limited training and resources; and that targeted training and policy support would enhance AI adoption. Through data collection and analysis, these hypotheses were confirmed, highlighting the need for comprehensive support systems. Overall, addressing these research questions is important to understand the evolving roles of EFL teachers with AI.

While this study has presented insightful information on the integration of AI in EFL teaching, certain limitations must be acknowledged. The sample size of participant teachers was limited because of their busy schedules. They also varied in terms of AI exposure and may not represent all Algerian middle school EFL teachers. When interpreting the results, it is important to consider this limited sample size, as it affects the generalizability of the findings. Additionally, classroom observations were conducted solely by the study researcher. This self-observation approach has the potential for bias and reduces objectivity. Limited observation opportunities and time constraints caused by managing teaching responsibilities alongside research tasks may have affected the depth of observation or interview data. Due to the rapid advancements of AI tools, some findings may change quickly. Therefore, readers are advised to interpret the results with caution, considering the study's scope and the evolving nature of technology. Another limitation of this study is its exclusive focus on teachers' perspectives without considering students' experiences and

attitudes. For future research, it would be beneficial to conduct larger-scale studies and explore the learners' perspective on AI. Despite the limitations, this study provides a meaningful foundation for future research and practical insights on the development of AI-assisted EFL education.

In light of what has been identified, this study also suggests several recommendations that can be made to support AI in Algerian schools. Ongoing training and encouraging reflective practice would help EFL teachers to use AI. For policymakers, there is a need for investing in infrastructure, along with promoting curriculum reforms that take into account new learning styles for the new generations that are highly exposed to screens.

The future of education requires preparedness, not resistance, as it continues to change. AI can be a powerful ally when used wisely, creatively, and ethically, and no matter how or when or in what form it is implemented, the role of human teachers remains significant.

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Appendices

Appendix I: Teachers' Questionnaire on AI Integration in EFL Teaching

Dear Teacher,

Thank you for participating in this research study: '*Redefining Algerian Middle School EFL Teachers' Roles in the AI Era: Adaptations, Practices, and Challenges.'* Your responses will help us gain a comprehensive understanding of how Artificial Intelligence (AI) is influencing your teaching roles, practices, and perceptions. The information you provide will remain confidential and used solely for academic research.

Thank you for your cooperation.

Part One: Teacher's background information

1. **What is your gender?**
   • Male
   • Female
2. **What is your age group?**
   • Under 25
   • 25–34
   • 35–44
   • 45–54
   • 55+
3. **How many years have you been teaching English at the middle school level?**
   • Less than 3 years
   • 3–5 years
   • 6–10 years
   • More than 10 years
4. **How would you describe your role in the classroom?**
   • Knowledge provider
   • Facilitator
   • Assistant
   • Collaborator
   • Controller
   • All of them
5. **How would you assess the overall level of your students in class?**
   • Good
   • Average
   • Bad
6. **Do you have access to digital tools in your classroom (e.g., internet, projectors, tablets)?**
   • Yes
   • Partially
   • No

Part Two: AI Use in Teaching Practices

7. **Are you familiar with AI tools (e.g., ChatGPT, Grammarly, Duolingo) for teaching English?**
   •Yes
   • No

8. **Do you currently use any AI tools in your English lessons?**
   • Yes
   • Maybe
   • No

9. **If you are not sure, please select any tools you have used, whether or not you consider them AI-based:**
   • Chatbots (e.g., ChatGPT)
   • Grammar checkers (e.g., Grammarly)
   • Language apps (e.g., Duolingo)
   • Translation tools (e.g., Google Translate)
   • Other: _____

10. **Do you feel that AI tools can support your teaching practices?**
    • Yes
    • No
    • Not sure

11. **To what extent do you agree with the following statement:**
    "AI tools support me in making lessons more personalized and engaging."
    • Strongly disagree
    • Disagree
    • Neutral
    • Agree
    • Strongly agree

14. **What challenges do you face when using AI tools in teaching?**
    • Lack of training
    • Limited access to technology
    • Time constraints
    • Internet issues
    • Lack of confidence using AI
    • Other: _____

15. **How confident are you in integrating AI tools into your classroom?**
    • Very confident
    • Somewhat confident
    • Not confident

Part Three: Attitudes, Reflections, and Needs

16. **Do you feel that AI tools are useful in assessing students' progress?**
    - Yes
    - No
    - Not sure

17. **To what extent do you think the use of AI has changed the teacher's role in the classroom? (Scale from 1 to 5)**
    - 1 (Not at all)
    - 2
    - 3
    - 4
    - 5 (Completely)

18. **In what ways has AI influenced your classroom practices?**
    (Open-ended)

18. **Do AI tools help you better meet individual student needs?**
    - Yes
    - Sometimes
    - No

19. **To what extent have AI tools influenced your interactions with students?**
    - I don't use AI tools
    - I use AI, and it has changed my interactions a bit
    - I use AI often, and it has changed my interactions somewhat
    - I use AI a lot, and it has changed my interactions a lot

20. **Do you think AI tools could eventually replace the teacher's role in the classroom? Why or why not?**
    (Open-ended)

21. **Have you received any training on how to use AI or educational technology?**
    - Yes
    - No

22. **Would you be interested in future training programs on AI integration in EFL teaching?**
    - Yes
    - No
    - Maybe

Appendix II: Follow-Up Interview with EFL Teachers on AI Integration

Teacher Name: _____

School: _____

Date: _____

Interviewer: _____

This interview seeks to explore in more depth your responses to the questionnaire regarding the use of Artificial Intelligence (AI) in EFL teaching. Your reflections will help us understand how AI impacts your practices and perceptions.

❖ **Interview Questions**

1. What motivated you to start (or not start) using AI in your teaching practices?
2. Based on your experience, which AI tools have proven most effective or beneficial in your EFL classroom? Why?
3. How has your role as a teacher evolved since incorporating AI? Do you feel more like a facilitator, guide, or something else?
4. What are some challenges that you regularly face with AI integration in your school environment? How do you overcome them?
5. What do you believe are the biggest misconceptions teachers have about using AI in the classroom?
6. How do your students respond to AI tools? Are they enthusiastic, confused, resistant?
7. Do you feel your in-service training or academic studies equipped you to use AI tools effectively? What's missing?
8. How do you imagine the future of AI in Algerian EFL classrooms five years from now? What changes do you foresee?
9. Would you support the inclusion of AI training modules in in-service teacher training? Why or why not?
10. Do you think AI can replace any teaching roles, or will it always remain a tool? What makes you think so?

Appendix III: Classroom Observation

Observer Name: _____
Teacher Observed: _____
School: _____
Date: _____
Grade Level: _____
Class Size: _____
Classroom Setting (Urban/Suburban/Rural): _____

Section A: General Classroom Information

1) Subject of the Lesson: _____
2) Duration of Lesson: _____
3) AI Tools Used (if any): _____

Section B: Teacher Practices

1. **How is the lesson structured and delivered?**
   ☐ Poor ☐ Fair ☐ Good ☐ Excellent
2. **Is the AI tool embedded in the teaching plan or used incidentally?**
   ☐ No ☐ Partially ☐ Yes
3. **Does the teacher demonstrate confidence and fluency in using the tool?**
   ☐ No ☐ To some extent ☐ Yes
4. **Is there evidence of lesson adaptation based on AI feedback or suggestions?**
   ☐ No ☐ Somewhat ☐ Yes

Section C: Student Interaction and Engagement

1. **Are students actively engaged during AI-based activities?**
   ☐ Disengaged ☐ Neutral ☐ Engaged ☐ Highly Engaged
2. **How are students responding to AI?**
   ☐ Mixed ☐ Confused ☐ Passive ☐ Motivated
3. **Are students using AI tools independently or with teacher guidance?**
   ☐ Not using ☐ With guidance ☐ Independently
4. **Are there collaborative activities that involve AI tools?**
   ☐ No ☐ Yes

Section D: AI Tool Use and Pedagogical Purpose

1. **What specific AI functions are being used?**
   ☐ Translation ☐ Feedback ☐ Content generation ☐ Grammar correction
2. **Is the use of AI aligned with lesson objectives?**
   ☐ Not Aligned ☐ Partially ☐ Fully
3. **Does the AI tool enhance or replace a traditional teaching task?**
   ☐ Not Applicable ☐ Replaces ☐ Enhances
4. **Are students assessed using or alongside AI tools?**
   ☐ Not Yet ☐ No ☐ Yes

Section E: Classroom Environment and Resources

1. **Is the physical classroom environment conducive to using digital tools?**
   ☐ Inadequate ☐ Somewhat Adequate ☐ Adequate
2. **Are internet and technological resources reliable?**
   ☐ Unreliable ☐ Occasionally unreliable ☐ Reliable
3. **Is the seating arrangement suitable for interactive AI-based tasks?**
   ☐ Partially ☐ No ☐ Yes

Section F: Teacher-Student Dynamics

1) **Does AI enhance or reduce interpersonal interaction?**
   ☐ No noticeable change ☐ Reduces ☐ Enhances
2) **How does the teacher monitor and support student learning during AI use?**
   ☐ Rarely ☐ Occasionally ☐ Actively
3) **Are there opportunities for students to give feedback on AI?**
   ☐ No ☐ Yes

Section G: Challenges Noted

1) **Technical difficulties observed (connectivity, device issues)?**
   ☐ None ☐ Minor issues ☐ Yes
2) **Pedagogical concerns (loss of focus, misuse)?**
   ☐ None ☐ Moderate ☐ Significant
3) **Teacher strategies to manage or mitigate these challenges?**
   ☐ Ineffective ☐ Somewhat effective ☐ Effective

Section H: Comments and Reflection

1) Summary of classroom atmosphere and effectiveness of AI use:
2) Suggestions or reflections on improving integration:

Appendix IV: Lesson Plan 1

Teacher: Mequenni **Anfel**	***Middle school:*** **Bakr ben Hammad**	***Level: 3rd MS***
Lesson: **I listen and do.**	***Lesson focus:*** language learning	***Framework: PDP***
Sequence03: Me and the scientific world.		
The learning objective : **by the end of the lesson SWBAT interpret an audio script about the famous scientist Prof Belgacem Haba and use his ID card to write his biography .**		
The target structure: biographical **vocabulary/ present simple.**	***Targetedcompetencies:*** ***interact****/*interpret/produce ***Domain:***written/oral both	
Materials: white board/speaker/ pictures.		

Cross-curricular competencies:
Intellectual comp: the **learner can interpret, understand and identify relevant biographical information.**
Methodological comp: he **can use listening strategies to interpret an oral discourse**
Communicative comp: he **can process digital data.**
Personal &social comp: he **can socialize through oral or written exchanges with the teacher and his classmates.**

Core values:
To be keen on communicating about outstanding Algerian figures.

TIME	***F.W***	***PROCEDURES***	***FOCUS***	***OBJS***	***Materials***	***VKAT***
15 min	Warmup	T greets her learners and welcomes them to the class. T clarifies that we ended sequence 02 and now we will be starting a new sequence T pins on the board some pictures related to the scientific world. T asks them to describe what do they see. T writes some of their answers on the board in a form of a mind map. T asks them: according to the pictures what do you think sequence three is going to be about? PPs answers. T and pps write the theme of sequence 3 together: Me ***and the scientific world.***	T	Introducing the sequence	PICTURES	A v

10min	Pre-listening	T explains some new vocabulary using pictures. **Scholarship**: A scholarship is an award or financial aid given to a student to help pay for their education **Achievement**: Achievement means something important that you have done successfully **Obstacles**: Obstacles are challenges or problems **Miniaturization**: Miniaturization is the process of making things smaller while keeping them useful and efficient. T asks Lrs: "Do you know any famous Algerian scientists or inventors?" PPS responds.	T/L	To brainstorm ideas+ learn new vocabulary	pictures	V/A
30 min	During listening	T gives the instructions: You are going to listen to a script talking about the famous scientist Professor Haba. Take some notes in your exercise copybooks. first *Part.* **Task 02:** oral. Listen and answer the following questions. □ Where was Professor Haba born? □ What degree did he earn at Stanford University? □ What company did he work for in New York? T and lrs correct together. Tak 02: write true or false. □ Professor Haba was born in a big city. (False) □ He studied physics at the University of Bab Ezzouar. (True) □ Professor Haba went to the United States on a scholarship. (True) □ He worked at a company in New York for 10 years **Task 03:** match the pairs □**Scholarship** □**PhD** □**University** □**Research** a. A higher level of study, usually after a master's degree. b. A place where students go to study for a degree. c. Money given to support a student's education. d. The detailed study of a particular subject.	T/L	To familiarize the lrs with the new vocabulary and learn about the Algerian scientist Professor Haba.	speaker/ wb	A/V

		Second part: listen to the second part of the script talking about professor Haba. Take some notes in your exercise copybook. **<u>Task 01: say true or false</u>** 1. Professor Haba stayed in Japan for five years. (False) 2. Tessera was working on making phones bigger. (False) 3. Miniaturization helped phones become more popular. (True) **<u>Task 03: fill in the gaps.</u>** Professor Haba worked in **Japan** with Nippon Electronics, focusing on **laser** technology. After Japan, he returned to the **United States** and joined a company called **Tessera**. At Tessera, the goal was to make phones **smaller**, which made them more **popular**. The company also worked on **miniaturization** for phones and cameras.				

15min	Post listening	Task 04: pair work according to what you have learnt about Professor Haba . complete his ID card **ID CARD:** • **Name:** Professor Belgacem Haba • **Birth Year:** 1957 • **Birthplace:** El-M'ghayer, Algeria • **Education:** o Degree in Physics (University of Bab Ezzouar, Algeria) o Master's and PhD in Applied Physics and Solar Energy (Stanford University, USA) • **Work:** o Worked in Japan at Nippon Electronics (Laser technology and microelectronics) o Worked at Tessera in the USA (Making phones and cameras smaller) • **Contributions:** o Helped make mobile phones smaller and more popular o Worked on memory chips for phones and cameras • **Values:** Never give up and always have a plan Lrs write in their copybooks.	,T/L L/L	To use the information given	W b	V A

Listening script:

Part 1: Early Life and Education

Professor Belgacem Haba is a famous Algerian scientistand inventor. He was born in 1957 in El-M'ghayer, a small town south of Biskra, Algeria. He studied at Amir Abdelkader High School in Touggourt and later graduated with a DES in Physics from the University of Bab Ezzouar in Algiers.

He received a scholarship to study in the United States, where he earned two master's degrees and a PhD in Solar Energy from Stanford University.

Part 2: Career and Achievements

After finishing his studies, Professor Haba worked in New York at IBM, a big technology company. He used laser technology to help make electronics better. Then, he moved to Japan, where he worked for six years on similar projects.

When he came back to the U.S., he helped a company make mobile phones and cameras smaller. This change made phones and cameras easier to use and more popular. Later, he worked on memory chips used in things like memory cards and video game consoles, such as PlayStation 2 and 3.

Professor Haba's inventions are used all over the world today. He advises students to have goals, work hard, and ask for help when needed.

- Known for innovations in mobile phone miniaturization and memory chips
- Developed technology used in memory sticks, smart cards, and video games

Visual aids:

Prompt 01: "A happy student holding a large certificate labeled 'Scholarship,' with money or coins in the background, standing in front of a university building."

Prompt 02: "A person standing on a podium with a gold trophy, smiling, with a finished project or medal, showing success and hard work."

Prompt 03: "A student trying to climb over large rocks or walls labeled 'difficulty' or 'challenge' , in a very long way, looking determined but tired."

Prompt 04: A scientist holding a large smartphone on one side and a tiny smartphone on the other, with machines shrinking objects in the background."

Appendix V: Lesson Plan

LESSON plan

Teacher: Mr. SAIBI | **Level: 3MS**

School: Abou El Yakadane

Sequence: Me and Lifestyles. | **Lesson:** I listen and do 3. | **Lesson Focus:** L-S **Framework: PDP**

learning objective/s: LWBT about their childhood clothes and school uniforms.

Targeted competencies: Interact-Interpret-Produce | **Domain:** Oral and Written with focus on Oral | **Materials: WB-Pictures-Audio.**

Cross Curricular Comptencies:
Intel: The learner can use critical thinking skills when gatherisng information for learning.
Meth: The learner can use information and commuincation technology such blogs to interact with learners of other cultures.
Com: The learner can use a role play to communicate appropriately.
Per and Soc: The learner can assert his personal identity and behave with confidence.

Core Values:
The learner can assert his personal identity and behave with self-confidence.
Sharing national cultural Valuing the past in order to build a better future for one's community.
Valuing time and being positive.

Time	Framework	Procedure	Focus	Objectives	Aids	VAKT
03M	**WARM UP**	-Teacher greets his learners and welcomes them. -Teacher interacts with his learners to set a suitable and positive climate for learning.	T/L L/T	To make learners speak English in the classroom		
05M	**LEAD IN**	T- Lrs. review the interview between Jenny and her her grandma.	T/L L/T	To elicit information from learner	W board	A
10M	**PRE-LISTENING**	T. presents the listening situation through 2 pictures. T.asks questions: Who is in the picture?/Where are they? (city or countryside)/What are they wearing?/Can you wear these clothes today? 	T/L L/T	To arouse learners' interest to what they are going to learn about	Pictures W board	A + V
20M	**During LISTENING**	Lrs. listen to the interview and do some comprehension tasks. Task 01: **(11/p50)** I match each item of clothing mentioned in the interview "Part 3" with its corresponding picture. Task 02: **(9/p50)** I listen to "Part 3" of the interview and tick the boxes next to the items of clothing that correspond to each person. Task 03: **(20/p53)** I match each item of clothing mentioned in the interview "Part 5" with its corresponding picture. Task 04: **(18/p53)** I listen to "Part 5" of the interview and tick the boxes next to the school wear items: **GRANDMA'S SCHOOL WEAR** A nice black gymslip and a white blouse with a nice big collar. **JENNY'S SCHOOL WEAR** A "blazer-and-tie" uniform style : a black blazer and skirt. A white blouse and socks, and a red tie. Plus, in winter, a V-neck jumper, black coat and trousers. Task 05: I classify the following words according to the pronunciation of their 'final ed' **ended - helped remembered - reminded - loved- dressed.**	T/L L/T L/L	to develop Learner's listening skills Enriching learners vocabs To pronounce final ed of regular verbs correctly	Audio	A + V + K

15M	POST-Listening	Task 05: I answer my partner's questions about boys' and girls' wear). **My partner:** What do boys wear to school in our country? **Me:** They usually wear trouser jeans, shirts and a blue school apron. **My partner:** What do girls wear to school in our country? **Me:** Girls wear trouser jeans, blouses and a pink school apron. **My partner:** What do you usually wear at weekends? **Me:** I sometimes put on a white Abaya or sportswear.	T/L L/T L/L	To reinvest what they have learnt to talk about their past grandparent s ' life15:58	W board	A V K
05M	Feedb-ack		T/L L/T			A
02M	HM					

TEACHER'S COMMENTS:

What Worked	What hindered	Action points

Appendix VI: List of AI tools useful for EFL teachers

Grammarly
Used for improving writing, correcting grammar mistakes, and providing feedback on students' work.
https://www.grammarly.com

ChatGPT
Used for generating lesson content, creating writing prompts, explaining grammar points, and saving time during planning.
https://chat.openai.com

DeepL Translator
Used for translating and simplifying texts with higher accuracy than traditional translators.
https://www.deepl.com/translator

WellSaid Labs
Used to convert written text into natural-sounding speech for listening tasks and audio materials.
https://www.wellsaidlabs.com

Luzia
Used for generating audio scripts, practicing vocabulary, and offering quick interactions with learners.
https://www.luzia.com/en

QuillBot
Used for paraphrasing and simplifying texts, checking grammar, and supporting writing activities.
https://quillbot.com

Duolingo
Used for personalized grammar, vocabulary, and listening practice through gamified, AI-driven language learning.
https://www.duolingo.com

Mage.Space
Used to create AI-generated visuals for storytelling, vocabulary activities, and classroom material design.
https://www.mage.space

Canva (with Magic Write & Text-to-Image)
Used for designing lesson materials such as visuals, worksheets, posters, and creative writing

prompts using integrated AI features.

https://www.canva.com

ملخص

تستكشف هذه الدراسة تتطور أدوار أساتذة اللغة الإنجليزية كلغة أجنبية في الطور المتوسط استجابةً لدمج الذكاء الاصطناعي في التعليم. يوظف البحث منهجًا مختلطًا يجمع بين الاستبيانات والمقابلات والملاحظات الصفية لتقييم الممارسات ،التصورات ،والتحديات التي يواجهها الأساتذة في تطبيق الذكاء الاصطناعي. تسلط الدراسة الضوء على أنه على الرغم من أن الذكاء الاصطناعي يقدم مزايا مثل توفير الوقت ،التخطيط المحسّن للدروس، والملاحظات المدونة آليا، إلا أنه يطرح أيضًا تحديات تشمل أحجام الفصول الدراسية الكبيرة وعدم كفاية البنية التحتية ونقص التدريب. تُظهر النتائج أن معظم الأساتذة منفتحون على تكييف أدوارهم، خاصةً إذا ما حصلوا على الدعم المؤسسي والتربوي المناسب. يؤكد البحث على أن نجاح تبني الذكاء الاصطناعي يعتمد على الإصلاحات المنهجية والتدريب المستمر والولوج الرقمي. وتكتسب هذه الدراسة أهميتها من كونها تسلط الضوء على الأثر التحويلي للذكاء الاصطناعي على تدريس اللغة الإنجليزية كلغة أجنبية في الجزائر، وتقدم توصيات قيّمة لصانعي القرار والمؤسسات التعليمية التي تهدف إلى إعداد الأساتذة للعصر الرقمي

Résumé

Cette étude explore l'évolution des rôles des enseignants de l’anglais comme langue étrangère au cycle moyen en réponse à l'intégration de l'intelligence artificielle (IA) dans l'éducation. La recherche utilise une approche mixte, combinant des questionnaires, des entretiens et des observations en classe pour évaluer les pratiques, les perceptions et les défis auxquels les enseignants sont confrontés lors de la mise en œuvre de l'IA. L'étude souligne que si l'IA offre des avantages tels que le gain de temps, l'amélioration de la planification des cours et le feedback automatique, elle pose également des problèmes, notamment la taille importante des classes, l'insuffisance de l'infrastructure et le manque de formation. Les résultats montrent que la plupart des enseignants sont prêts à adapter leur rôle, surtout s'ils bénéficient d'un soutien institutionnel et pédagogique adéquat. L'étude souligne que l'adoption réussie de l'IA dépend de réformes systémiques, d'une formation continue et de l'accès au numérique. Cette étude est importante car elle met en lumière l'impact transformateur de l'IA sur l'enseignement de l'anglais langue étrangère en Algérie et fournit des recommandations précieuses pour les décideurs politiques et les établissements d'enseignement visant à préparer les enseignants à l'ère numérique.

Summary

This study explores how Algerian middle school EFL teachers’ roles are evolving in response to the integration of artificial intelligence (AI) in education. The research employs a mixed-methods approach, combining questionnaires, interviews, and classroom observations to assess the practices, perceptions, and challenges teachers face with AI implementation. The study highlights that while AI offers benefits such as time-saving, enhanced lesson planning, and automated feedback, it also poses challenges including large class sizes, insufficient infrastructure, and lack of training. Findings show that most teachers are open to adapting their roles, especially if given the proper institutional and pedagogical support. The research emphasizes that successful AI adoption depends on systemic reforms, ongoing training, and digital access. This study is significant as it sheds light on the transformative impact of AI on EFL teaching in Algeria and provides valuable recommendations for policymakers and educational institutions aiming to prepare teachers for the digital era.

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