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The Impact of Artificial Intelligence on Students' Learning Habits: The Case of EFL Master Students at the University of Ain Temouchent

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Dedication

To my family.

To my beloved grandparents.

To my friends.

To everyone who supported me.

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Abstract

The incorporation of Artificial Intelligence (AI) technology in the field of English as a Foreign Language (EFL) teaching and learning is gaining significant importance because of increased students' use of AI tools and teachers' struggles to adjust to modern technological innovations. This study focuses on the effect of AI competence among teachers on the teaching and learning processes and on the learning habits of students in EFL. Moreover, this study attempts to determine whether self-learning can assist teachers in bridging the gap between themselves and AI in the field of education. This study employed the case study method at the University of Ain Temouchent. For data collection, semi-structured interview was conducted with six EFL teachers, while questionnaires were administered to 161 EFL Master students in order to investigate their perceptions towards use of AI technologies in EFL education, their dependence on these technologies, as well as impact on critical thinking skills and learning practices. The results showed that the majority of teachers had inadequate knowledge about the implementation of AI within EFL education and insufficient experience in this area, whereas students used various AI applications intensively while conducting their academic work. Moreover, excessive reliance on AI was shown to have negative implications for students' critical thinking skills and learning behaviour. However, the self-training process proved successful in terms of teachers' increased competency and self-confidence in the utilization of AI technology. In conclusion, the results of the current study emphasized the need for promoting the development of AI competence among teachers and institutional support in its effective implementation.

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List of Acronyms

- **AI**: Artificial Intelligence.
- **EFL**: English as a Foreign Language.
- **ESL**: English as a Second Language.
- **Q**: Question.

General Introduction

English language education has become increasingly vital in Algeria, driven by globalization, rapid technological advancement, and the necessity for communication within international academic and professional spheres. In higher education, English as a Foreign Language (EFL) instruction is central to developing students' linguistic competence and academic performance. As educational practices evolve, Algerian universities are expected to adapt to modern pedagogical approaches and digital innovations that enhance both teaching quality and the overall learning experience.

In recent years, the integration of Artificial Intelligence (AI) has transformed the landscape of EFL teaching and learning. AI-powered applications such as ChatGPT, Grammarly, QuillBot, and DeepL are increasingly utilized by students to assist with writing, grammar correction, and academic tasks. While these technologies provide immediate support and accessibility, their rapid spread has raised significant concerns regarding student dependence on AI-generated content and the potential decline of critical thinking. Consequently, AI integration presents both a transformative opportunity and a complex challenge for the modern classroom.

Within the Algerian context, a significant gap has emerged: while university students have rapidly expanded their use of AI, many EFL teachers lack the formal training and professional preparedness required to supervise these technological practices. Formal institutional training remains limited, which may negatively impact teaching effectiveness and student learning habits. Furthermore, there is a distinct lack of local research examining the relationship between teacher competence, student AI usage, and the potential of self-training as a practical solution to bridge these knowledge gaps.

The present study investigates the impact of teachers' AI-related competence on the EFL teaching-learning process at the University of Ain Temouchent. It specifically seeks to evaluate how self-training can help teachers integrate AI tools ethically and productively. To achieve these objectives, the following research questions are raised:

1. Research Question 1: Is there a relationship between teachers' lack of AI competence and teaching-learning effectiveness?
2. Research Question 2: To what extent can self-training reduce teachers' AI knowledge gaps?

Based on these questions, the study proposes the following research hypotheses:

- Hypothesis 1: A lack of AI competence among teachers negatively affects teaching effectiveness and encourages detrimental student learning habits.
- Hypothesis 2: Targeted self-training on AI applications can significantly reduce teachers' knowledge gaps and improve the quality of instructional practices.

This dissertation is organized into three main chapters. The first chapter establishes the theoretical framework, reviewing literature on AI in education, teacher competence, and learner autonomy. The second chapter details the mixed-method research methodology, describing the questionnaires administered to 161 EFL students and semi-structured interviews conducted with six teachers. The third chapter is devoted to the analysis and discussion of the findings, interpreting the results in relation to the established hypotheses.

Ultimately, this study contributes to a deeper understanding of the influence of AI on Algerian EFL education. By highlighting the role of self-training as an accessible solution for professional development, the research offers practical recommendations for teachers, universities, and policymakers to ensure the ethical and effective integration of AI in the digital age.

Chapter one: Literature Review and Theoretical Framework.

1.1 Introduction

This chapter provides a comprehensive review of the literature on English as a Foreign Language (EFL) learning, students' learning habits, and the evolving role of technology—particularly Artificial Intelligence (AI)—in education. The primary purpose is to establish a solid theoretical foundation for the study by examining key concepts that explain how students learn English and how their habits are shaped in contemporary educational settings.

The chapter begins by discussing the nature of EFL learning, its defining characteristics, and the common challenges learners face, while also underscoring the importance of English as a global language in academic and professional contexts. It then turns to learning habits in EFL settings, exploring their definition, significance, and the influencing factors such as motivation, environment, and learner autonomy. Following this, the development of both receptive and productive language skills is addressed, along with the role of practice and essential components like vocabulary and grammar.

The chapter further examines how technology has transformed traditional language education, with a focused discussion on AI as an emerging tool—its definition, types, and specific applications in language learning. The impact of AI on students' learning habits is analysed, highlighting both its advantages and potential drawbacks. By synthesizing these key areas, the chapter offers a clear theoretical framework that not only supports deeper investigation of the topic but also provides a logical transition to the research methodology detailed in the following chapter.

1.2 English as a Foreign Language (EFL) Learning

English as a foreign (EFL) is generally understood as the process of learning English in context where it is not the native language and is not widely used in everyday communication. In such settings, learners are mainly exposed to English within formal instructional environments, such as schools and universities, rather than through natural

interaction in their daily lives. As a result, EFL learners often rely heavily on classroom instruction, guided practice, and educational materials to develop their language proficiency.

From a theoretical perspective, EFL is not only defined by the geographical or linguistic context, but also by the nature of exposure to the language. Unlike learners in English as a Second Language (ESL) environments, EFL learners do not usually encounter English in authentic social situations, which makes the learning process more structured and, in many cases, more challenging. According to Richards and Schmidt (2010), EFL refers to situations where English is learned "in a country where it is not the primary language of communication", highlighting the limited natural exposure that characterizes this context.

In this sense, EFL learning can be seen as a guided and often effortful process that requires learners to actively engage with the language beyond the classroom. Harmer (2007) explains that students "in EFL contexts often have little opportunity to use English outside the classroom", which places greater responsibility on both teachers and learners to create meaningful opportunities for practice. This situation makes factors such as motivation, learning strategies, and study habits particularly important for successful language acquisition.

Moreover, EFL learning involves the development of the four core language skills listening, speaking, reading and writing as well as key language components such as grammar, vocabulary, and pronunciation. However, due to the limited exposure to real-life communication, learners may face difficulties in achieving fluency and confidence, especially in productive skills like speaking and writing. For this reason, EFL instruction often emphasizes repetition, practice, and the use of supportive tools and techniques to simulate authentic communication.

From the perspective of this research, EFL is understood not only a context in learning English, but also as a learning experience that is strongly influenced by students' habits, strategies, and access to resources. Because learners do not naturally interact with English in their environment, they tend to depend on external tools such as textbooks, digital platforms, and more recently, Artificial Intelligence applications to support their learning. This makes EFL an especially relevant context for examining how modern

technologies, including AI can shape and transform students' learning habits, either by enhancing their autonomy and efficiency or by creating new forms of dependency.

In other words, this study considers EFL learning as a dynamic process where success depends not only on formal instruction, but also on how learners manage their own learning practices in response to the resources available to them. This perspective is essential for understanding the growing role of AI in influencing how students learn, revise, and engage with the English language in contemporary educational settings.

1.2.1 Characteristics of EFL learners

Learners of English as a Foreign Language (EFL) present a set of characteristics that distinguish them from learners in other language context. One of the most defining features of EFL learners in their limited exposure to English outside the classroom. In most cases, they interact with the language primarily through formal instruction which makes the learning process more dependent on teaching methods and materials. As noted by Harmer (2007), "students in EFL context often have little opportunity to use English outside the classroom", highlighting the restricted nature of their linguistic environment.

In addition, EFL learners often rely heavily on teachers as the main source of input guidance and feedback. This can sometimes reduce learner's autonomy, especially in traditional educational settings where teacher-cantered approaches are dominant. However, with the increasing availability of digital tools, learners are gradually becoming more independent and capable of managing their own learning.

Another important characteristic is the diversity in learner's motivation and proficiency levels. Some learners study English for academic success while others are motivated by career opportunities of personal interests. According to Lightbown and Spada (2013) individual differences such as motivation, aptitude, and learning strategies play a significant role in second and foreign language acquisition, which also applies to EFL learners. Therefore, understanding these characteristics is essential for designing effective teaching approaches that meet learner's needs.

1.2.2 Challenges in EFL contexts

EFL learners face several challenges that can affect their progress and overall language development. One of the main difficulties is the lack of authentic exposure to English in daily life. Since English is not commonly used in their surrounding environment, learners may struggle to develop fluency particularly in speaking and listening skills. This limited exposure often results in a gap between theoretical knowledge and practical use of the language.

Another major challenge is related to linguistic differences between English and the learner's first language. These differences can lead to errors in grammar, pronunciation, and vocabulary usage. Swan (2005) explains that "learner's errors are often influenced by the structure of their first language" which can interfere with the acquisition of the target language. This phenomenon, known as language transfer, can either facilitate or hinder learning depending on the similarities between the two languages.

Moreover, EFL learners may experience psychological barriers such as anxiety, lack of confidence, and fear of making mistakes. These factors can reduce their willingness to participate in classroom activities, especially in speaking tasks. In addition, traditional teaching methods that focus heavily on memorization and grammar rules may limit student's ability to use the language communicatively. From a broader perspective, access to resources also represents a challenge in some EFL contexts. Not all learners have equal access to quality materials, technology, or opportunities for practice, which can create disparities in learning outcomes. This highlights the need for more inclusive and flexible approaches to language teaching.

1.2.3 Importance of English in Academic and Professional Context

English has become a global language that plays a crucial role in both academic and professional domains. In the academic context, English is widely used as the primary language of instruction, research, and publication in many fields. Students who have a good command of English are more likely to access international resources, participate in academic exchanges, and succeed in higher education. Crystal (2003) states that

"English has become the dominant language of international communication", emphasizing its central role in global knowledge exchange.

In professional contexts, proficiency in English is often considered a key skill that enhances employability and career advancement. Many multinational companies use English as a working language, and employees are expected to communicate effectively with colleagues, clients, and partners from different cultural backgrounds. As a result, individuals with strong English skills have a competitive advantage in the global job market. Furthermore, English facilitates access to technology, innovation, and global networks. Much of the content available on the internet, including educational platforms and professional training resources, is produced in English. This makes it an essential tool for lifelong learning and professional development.

From the perspective of this research, the importance of English goes beyond communication. It is closely linked to student's learning habits and their use of modern tools such as Artificial Intelligence. As learners recognize the value of English in their academic and professional lives, they are more likely to adopt new strategies and technologies to improve their skills. Therefore, understanding the importance of English helps explain why students are increasingly integrating AI tools into their learning practices.

1.3 Learning Habits in EFL Contexts

Learning habits are considered an essential aspect of successful language learning, especially in EFL contexts where learners often depend on personal effort and regular practice outside the classroom. Understanding the concept of learning habits is therefore necessary in order to examine how students organize their learning process and how these habits may be influenced by modern educational tools such as artificial intelligence.

1.3.1 Definition of Learning Habits

Learning habits refer to the regular behaviours and strategies learners use to improve learning and academic performance (Zimmerman, 2000; Azikiwe, 1998). In the context of English as a Foreign Language (EFL), learning habits include activities such as revising lessons, practicing language skills, memorizing vocabulary, and engaging

with learning materials both inside and outside the classroom. These habits are not fixed; rather, they evolve depending on the learner's needs, goals, and learning environment.

From an academic perspective, learning habits are closely related to the concept of self-regulated learning where learners actively plan, monitor, and evaluate their own learning process. As Zimmerman (2002) explains, "self-regulated learners are proactive in their efforts to learn," the importance of developing consistent and effective study routines. In this sense, learning habits can be understood as the practical expression of learners' ability to manage their own learning. In EFL contexts where exposure to English is often limited, learning habits play a crucial role in compensating for the lack of natural interaction with the language. Therefore, students who develop strong and organized learning habits are generally more successful in improving their language proficiency.

1.3.2 Importance of Effective Learning Habits in Language Learning

Effective learning habits are essential for successful language acquisition particularly in EFL settings. Since learners do not usually use English in their daily lives, they must rely on deliberate practice and consistent effort to develop their skills. Good learning habits such as regular revision, active participation, and independent practice, help learners retain information and apply it in meaningful ways.

Research in language learning emphasizes that repetition and practice are key elements in acquiring a new language. According to Nation (2001), "language learning requires deliberate attention and repeated exposure," which underlines the importance of consistent study habits. Without regular practice, learners may forget what they have learned or fail to develop fluency.

Moreover, effective learning habits contribute to the development of learner autonomy. Students who take responsibility for their own learning are more likely to explore additional resources, practice outside the classroom, and use different strategies to overcome difficulties. This is particularly important in modern educational contexts, where learners have access to a wide range of digital tools, including artificial intelligence applications.

Through the lens of this research, learning habits are not only important for language acquisition but also for understanding how students interact with new technologies. The way students organize their study routines can influence how they use AI tools either as supportive learning aids or as shortcuts that may reduce critical thinking.

1.3.3 Factors Influencing Students' Learning Habits

Students' learning habits are shaped by a variety of factors that can either support or hinder their learning process. One of the most important factors is motivation. Learners who are highly motivated are more likely to engage in regular practice, set clear goals, and persist despite difficulties. Motivation can be intrinsic, such as personal interest in the language, or extrinsic, such as the desire to achieve academic or professional success. As Dörnyei (2001) states, "motivation provides the primary impetus to initiate learning and later the driving force to sustain it," which highlights its central role in shaping learning behaviours. This drive is often further categorized into integrative motivation, where a learner desires to identify with the target language community, and instrumental motivation, which focuses on practical gains. Without this internal or external engine, even the most effective study habits are likely to wither over time.

Another key factor is the learning environment. This includes both the physical environment, such as access to resources and technology, and the social environment, including teachers, peers, and family support. A positive and supportive environment can encourage learners to adopt effective study habits, while a lack of resources or guidance may limit their progress. In the modern educational landscape, this environment increasingly extends into digital spaces. The availability of high-speed internet and language-learning software can facilitate immersive habits, yet a poorly managed digital environment may introduce distractions that fragment a student's attention. Therefore, the quality of the environment is defined not just by what is present, but by how well those elements are organized to minimize cognitive load.

Autonomy is also a crucial factor influencing learning habits. Autonomous learners are able to take control of their learning by selecting appropriate strategies,

managing their time, and evaluating their progress. Holec (1981) defines autonomy as "the ability to take charge of one's own learning," which is particularly important in EFL contexts where independent learning is necessary. This sense of agency allows students to move beyond passive reception and become active architects of their own education. When students feel they have a choice in their learning path, they are more likely to develop resilient habits that persist outside the classroom, turning everyday experiences into opportunities for linguistic growth.

Furthermore, these habits are deeply influenced by metacognition, or the ability to reflect on one's own cognitive processes. While motivation provides the initial spark and the environment provides the tools, metacognitive awareness allows the learner to monitor which habits are yielding results and which are inefficient. A student who realizes that rote memorization is not helping their conversational fluency can autonomously shift toward more communicative habits. This synergy between motivation, a supportive environment, and the autonomous application of metacognitive strategies creates a comprehensive framework for academic success. Together, these elements transform learning from a series of isolated tasks into a sustainable, self-reinforcing lifestyle. In addition to these factors, modern technological developments have introduced new influences on learning habits. Digital tools and AI applications provide learners with instant access to information and personalized feedback which can significantly reshape how they study and practice English.

1.3.4 Traditional vs. Modern Learning Habits

Learning habits in EFL contexts have evolved significantly over time especially with the integration of technology into education. Traditional learning habits were often characterized by teacher-cantered approaches where students relied heavily on textbooks, memorization, and repetition. In this model, learners tended to follow fixed routines, such as copying notes, learning grammar rules, and preparing for exams through rote learning. While these traditional methods can be effective for certain aspects of language learning, they may not always promote communicative competence or critical thinking. Students in such environments may become passive learners, depending mainly on the teacher for knowledge and guidance.

In contrast, modern learning habits are more learner-cantered and flexible. With the advancement of technology, students now have access to a wide range of digital resources including online courses, language learning applications, and artificial intelligence tools. These resources allow learners to practice at their own pace, receive immediate feedback, and engage in interactive learning experiences. According to Benson (2011), “the development of technology has played a significant role in promoting learner autonomy,” as it enables students to rase greater control of their learning process. However, while modern tools offer many advantages, they also raise concerns about over-reliance and reduced effort in learning.

From the standpoint of this study, the shift from traditional to modern learning habits is particularly important, as it provides the context for understanding how AI tools are influencing students’ habits. While some learners use these tools to enhance their skills and improve efficiency, others may depend on them excessively, which can negatively affect their learning habits.

1.4. Language Skills Development in EFL Learning

The development of language skills is a central goal in English as a Foreign Language (EFL) learning. These skills are generally divided into two main categories: receptive skills and productive skills. Mastering these skills requires continuous practice, exposure, and the use of effective learning strategies. In EFL contexts, where learners have limited natural interaction with English, the development of these skills depends largely on classroom instruction as well as learners’ individual efforts.

1.4.1 Receptive Skills

Receptive skills, which encompass listening and reading, play a fundamental role in language acquisition, as they provide learners with the input necessary for understanding and communication. Listening, for instance, is a complex process that involves recognizing sounds, interpreting meaning, and responding appropriately to spoken language. It can be particularly challenging for EFL learners due to differences in accents, speed of speech, and unfamiliar vocabulary. As Rost (2011) explains, "listening is a complex process that enables learners to understand spoken language and to

participate in communication," which highlights its essential role in developing overall language competence.

In addition, reading enables learners to access information, expand their vocabulary, and strengthen their understanding of grammatical structures. It is often considered a strategic and active process where learners engage cognitively with texts to construct meaning. Grabe (2009) states that “reading is a strategic process that requires the integration of various cognitive skills,” emphasizing the learners' involvement in comprehension. Together, listening and reading form the foundation upon which other language skills are built. By internalizing these receptive inputs, learners gradually develop the necessary linguistic resources to transition into productive skills, such as speaking and writing.

1.4.2 Productive Skills

Productive skills, which include speaking and writing, require learners to actively produce language, which makes them more demanding in terms of cognitive effort and confidence. Speaking involves expressing ideas, opinions, and information orally, often in real-time situations. Many EFL learners experience difficulties in this area due to anxiety, lack of confidence, and limited vocabulary. Brown (2001) notes that “speaking is an interactive process of constructing meaning that involves producing, receiving, and processing information,” which demonstrates its complexity and importance. This spontaneity requires learners to not only retrieve vocabulary and grammar rapidly but also to manage the phonological aspects of the language, such as intonation and stress, to ensure clarity.

Writing, allows learners to communicate in a more structured and organized manner. It requires the effective use of grammar, vocabulary, and coherence to produce meaningful texts. Hyland (2003) describes writing as “a social and cognitive process that requires the development of linguistic and rhetorical skills,” the multiple competencies involved. Unlike speaking, writing offers the advantage of time for reflection and revision, yet it demands a higher level of accuracy and an understanding of specific genre conventions. Despite its challenges, writing plays a crucial role in academic contexts, where learners are expected to present ideas clearly and accurately.

Ultimately, both speaking and writing serve as the primary means through which learners demonstrate their communicative competence and interact with the world around them.

1.4.3 The Role of Practice in Skill Development

The development of both receptive and productive skills is strongly influenced by practice. In EFL contexts where exposure to English is limited, repetition becomes essential for reinforcing knowledge and ensuring long-term retention. Nation (2001) emphasizes that "learning a language requires repeated exposure to language items," that consistent practice is necessary for mastering vocabulary, grammar, and pronunciation. In addition, exposure to authentic materials such as texts, audio recordings, and videos helps learners become familiar with real-life language use, thereby improving both comprehension and fluency.

Alongside repetition and exposure, independent learning plays a crucial role in skill development. EFL learners often need to take responsibility for their own learning outside the classroom by setting goals, selecting appropriate resources, and practicing regularly. Benson (2011) states that "autonomy in language learning involves learners taking control of their own learning process," which underlines the importance of self-directed learning. Independent learners are more likely to engage with additional resources including digital platforms and artificial intelligence tools, to enhance their skills. From the perspective of this research, this aspect is particularly important, as it connects directly to how students use AI technologies in shaping their learning habits.

While practice plays a crucial role in developing language skills such as listening, speaking, reading, and writing, effective language learning also depends on mastering essential language components. Among the most important of these components are vocabulary and grammar, which form the foundation of accurate and meaningful communication.

1.5 Language Components in EFL Learning

Language learning in EFL contexts does not only involve mastering the four main skills but also requires a solid understanding of essential language components

particularly vocabulary and grammar. These components form the foundation of effective communication as they enable learners to understand and produce meaningful language. Without sufficient vocabulary and grammatical knowledge, learners may struggle to express their ideas clearly or comprehend written and spoken texts. Therefore, the development of these components is considered a central aspect of language acquisition.

1.5.1 Vocabulary Acquisition

Vocabulary acquisition plays a crucial role in language learning as it directly affects learners' ability to understand and communicate effectively. It involves not only learning the meanings of words but also understanding their usage, pronunciation, and context. In EFL settings, vocabulary learning is particularly important because learners often rely on limited exposure to the language. Nation (2001), "knowing a word involves knowing its form, meaning, and use," shows that vocabulary learning is a complex and multidimensional process. Learners need repeated exposure to words in different contexts in order to fully understand and retain them. This highlights the importance of practice and meaningful engagement with language.

Moreover, vocabulary acquisition is closely linked to other language skills. A strong vocabulary improves reading comprehension, supports writing development, and enhances speaking fluency. However, many EFL learners face challenges such as memorizing large numbers of words and retaining them over time. To overcome these difficulties, learners often use strategies such as repetition, note-taking, and, more recently, digital tools and AI applications.

In the context of this research, vocabulary learning is not only a linguistic process but also a reflection of students' learning habits. The strategies learners choose and the tools they use can significantly influence how effectively they acquire and retain new vocabulary.

In addition to vocabulary, grammar represents another fundamental component of language learning. While vocabulary provides learners with the words needed for communication, grammar helps organize these words into meaningful and accurate structures.

1.5.2 Grammar Learning

Grammar is another fundamental component of language learning as it provides the rules that govern how words are combined to form meaningful sentences. In EFL contexts, grammar is essential for achieving accuracy and clarity in communication. Without a solid understanding of grammatical structures, learners may find it difficult to express their ideas correctly. Grammar learning can take different forms, including deductive approaches, where rules are explicitly explained, and inductive approaches, where learners discover patterns through examples. Swan (2005) states that "grammar is the system of rules that enables us to structure language," emphasizing its importance in both written and spoken communication.

Despite its importance, grammar is often perceived as challenging by EFL learners. Difficulties may arise due to differences between the learners' first language and English which can lead to errors and confusion. Additionally, traditional teaching methods that focus heavily on memorization may not always help learners use grammar effectively in real communication. In recent years, new approaches have emphasized the integration of grammar with communication and the use of technology to support learning. Tools such as grammar checkers and AI-based applications provide immediate feedback, helping learners identify and correct their mistakes. Through the lens of this study, grammar learning is closely related to students' use of such tools and how they incorporate them into their learning habits.

Although acquiring grammatical knowledge is important, maintaining and improving language proficiency requires continuous revision and effective study habits. Learners need to regularly review and practice what they have learned in order to strengthen retention and develop long-term language competence.

1.6 Revision and Study Skills in Language Learning

Revision and study skills are essential elements in the process of language learning especially in EFL contexts where learners must rely on continuous practice to maintain and improve their proficiency. Revision refers to the process of reviewing previously learned material in order to reinforce knowledge and ensure long-term

retention. Study skills, include the strategies and techniques that learners use to organize their learning, manage their time, and improve their understanding.

Effective revision requires consistency and the use of appropriate techniques such as summarizing, note-taking, and repetition. These strategies help learners consolidate their knowledge and identify areas that need improvement. As Zimmerman (2002) explains, "self-regulated learners actively control their learning process," importance of planning, monitoring, and evaluating one's own learning.

In addition, good study skills enable learners to become more independent and efficient in their learning. Skills such as time management, goal setting, and organization are particularly important in helping students balance different academic tasks and maintain regular study routines.

With the advancement of technology, revision and study practices have also evolved. Many learners now use digital tools and AI applications to review lessons, generate summaries, and receive instant feedback. While these tools can enhance learning efficiency, their effectiveness depends on how they are used. Over-reliance on such tools may reduce active engagement whereas balanced use can support deeper learning.

From the perspective of this research, revision and study skills are closely connected to students' learning habits and their use of AI technologies. Understanding how students revise and study provides valuable insight into how their habits are being shaped in modern educational environments.

1.7 Technology in Language Learning

Technology has played a transformative role in the field of education particularly in language learning. Over the years, educational practices have evolved from traditional classroom-based instruction to more flexible and technology-enhanced environments. The integration of digital tools has significantly changed how learners access information, interact with content, and develop their language skills. According to Warschauer (1996), "technology plays a crucial role in reshaping the ways in which language is taught and learned".

In the context of English as a Foreign Language (EFL), digital tools such as online platforms, mobile applications, and multimedia resources provide learners with opportunities to practice the language beyond the classroom. These tools support different learning styles and allow students to engage with authentic materials which can improve their comprehension and communication skills. Furthermore, technology facilitates independent learning by giving learners access to a wide range of resources anytime and anywhere.

However, despite its advantages, the use of technology in language learning also presents certain limitations. While it enhances accessibility and interaction, it may also lead to distractions, over-reliance, and reduced face-to-face communication. As Bax (2003) suggests, the integration of technology should be balanced and purposeful in order to support effective learning outcomes. Therefore, technology should be seen as a supportive tool rather than a replacement for traditional teaching methods.

1.8 Artificial Intelligence in Education

Artificial Intelligence (AI) is one of the most recent and influential technological developments in education. It refers to the ability of machines and computer systems to perform tasks that typically require human intelligence such as problem-solving, language processing, and decision-making. In educational contexts, AI is used to create intelligent systems that can support teaching and learning processes. AI tools used in education come in various forms including chatbots, writing assistants, and translation tools. These tools are designed to provide instant feedback, personalized learning experiences, and interactive support for learners. For example, AI-powered chatbots can simulate conversations while writing assistants help students improve grammar, coherence, and style in their writing.

Students increasingly rely on AI tools in their academic work especially in language learning. Holmes et al. (2019) note that “AI has the potential to transform education by providing personalized and adaptive learning experiences” popularity among learners. From the standpoint of, AI is not only a technological innovation but also a factor that directly influences how students approach learning and organize their study habits.

1.9 The Impact of AI on Students' Learning Habits

The integration of artificial intelligence into education has led to noticeable changes in students' learning habits. One of the most significant changes is the shift in study routines where learners increasingly depend on digital tools to complete tasks, revise lessons, and access information easily. This shift has not only made learning more flexible but has also raised questions about the depth of understanding and engagement. AI plays an important role in promoting learner autonomy. With access to AI tools, students can independently seek explanations, correct their mistakes, and practice language skills without constant teacher supervision. As Luckin et al. (2016) explain, "AI can support learners in becoming more autonomous by providing immediate feedback and guidance," which can enhance self-directed learning.

On the positive side, AI offers several advantages, including efficiency, accessibility, and personalization. Learners can receive instant answers, tailored feedback, and customized learning paths that suit their individual needs. This can improve both performance and motivation. However, there are also negative aspects that need to be considered. Over-reliance on AI tools may reduce students' critical thinking and problem-solving abilities, as they may depend on ready-made answers instead of engaging deeply with the learning process. In addition, issues such as plagiarism and academic dishonesty may arise when students misuse AI tools.

Furthermore, the prevalence of AI can lead to a decrease in cognitive persistence and social interaction. When students rely on automated systems to solve every minor challenge, they may lose the "desirable difficulty" that is essential for long-term memory retention. This can result in a superficial grasp of the subject matter, where the learner knows how to find the answer but does not truly understand the underlying logic. Additionally, an over-emphasis on digital interaction can isolate learners, depriving them of the collaborative social habits and peer-to-peer debates that are vital for developing communicative competence and emotional intelligence.

From an analytical standpoint, the influence of AI on educational behaviours is intricate and diverse. While it has the potential to enhance learning, it also requires careful and responsible use to avoid negative consequences. Balancing the convenience

of automation with the necessity of rigorous mental effort remains a primary challenge for modern educators and students alike.

1.10 AI and Language Skills Development

Artificial intelligence has a significant impact on the development of language skills particularly in EFL contexts. AI tools can support writing skills by providing instant feedback on grammar, vocabulary, and structure, helping learners improve the quality of their texts. These tools also assist students in organizing their ideas and producing more coherent and accurate writing.

In addition, AI contributes to vocabulary development by offering definitions, synonyms, and contextual examples which help learners expand their lexical knowledge. Grammar correction is another important function of AI tools as they can identify errors and suggest appropriate corrections, allowing learners to learn from their mistakes.

Moreover, AI technologies are increasingly used to support speaking and listening practice. Through speech recognition and interactive applications, learners can practice pronunciation and engage in simulated conversations. According to Godwin-Jones (2018), "AI-driven tools are expanding opportunities for language practice especially in speaking and listening," which are often difficult to develop in EFL contexts.

Finally, AI plays a dual role in language skills development. While it provides valuable support and enhances learning efficiency, its effectiveness depends on how learners use these tools within their study routines.

1.11 Previous Studies on AI in EFL Learning

Several studies have explored the role of artificial intelligence in EFL learning focusing on its impact on student performance and learning experiences. These studies generally highlight the positive effects of AI tools in improving language skills, increasing motivation, and facilitating independent learning. For instance, research has shown that AI-based applications can enhance writing quality by providing immediate feedback and suggestions. Other studies indicate that learners who use AI tools regularly tend to develop better vocabulary and grammar skills compared to those who rely solely on traditional methods.

However, despite these positive findings, there are still gaps in the existing literature. Many studies focus primarily on the benefits of AI, while fewer examine its potential negative effects on learning habits, such as dependency or reduced critical thinking. Zawacki-Richter et al. (2019) point out that "there is still limited research on the pedagogical implications of AI in education," Which demonstrates the need for further investigation.

This research aims to contribute to this gap by examining not only the advantages of AI but also its impact on students' learning habits in a specific EFL context.

1.12 Conclusion

This chapter has provided an overview of the key concepts related to EFL learning, learning habits, language skills development, and the role of technology and artificial intelligence in education. It has highlighted the importance of effective learning habits and the ways in which modern tools, particularly AI, are influencing how students learn and interact with the English language. Based on this review, it is clear that there is a need for further research on how AI affects students' learning habits, especially in EFL contexts. Therefore, the next chapter will focus on the research methodology and fieldwork used to investigate this topic in depth.

Chapter two: Research Design and Methodology.

2.1 Introduction

This chapter establishes the methodological framework designed to examine the impact of Artificial Intelligence on student behaviours and learning habits within higher education. By targeting EFL Master students and faculty at Ain Temouchent University, the research adopts a dual-perspective approach to capture a comprehensive view of how AI tools influence academic conduct and classroom practices. To ensure the findings were robust and credible, the research instruments underwent rigorous pilot-testing to verify their clarity, validity, and reliability before the final implementation.

The study utilizes a mixed-methods approach, employing student questionnaires to gather quantitative data on usage patterns and attitudes, alongside qualitative teacher interviews focused on perceived behavioural shifts and educational challenges. While the survey data was processed through quantitative analysis, the interview responses were interpreted using a thematic approach to uncover deeper insights. Ultimately, this structured methodology provides the necessary foundation for analysing the complex relationship between AI integration and the evolving landscape of academic performance.

2.2 Research objectives

The main objective of this study is to investigate the impact of artificial intelligence tools on student habit in higher education. This research aims to explore how student interact with AI tools in their academic journey and how these tools influence their learning habits, attitudes, and academics activities, and the shift that faced the teachers and how they manage to deal with it.

The research also seeks to identify the positive and negative habit changes associated with the use of AI in academic contexts. In addition, it attempts to understand teacher's perceptions regarding student's reliance on AI tools and the implications of these technologies for the learning and teaching process.

2.3 Research method

This study utilizes a mixed-method approach, specifically designed as a case study cantered on Ain Temouchent University. This framework was selected to achieve

a comprehensive understanding of the research problem by integrating different forms of data collection and analysis, ensuring that the findings are grounded in both statistical trends and detailed personal insights.

The first phase of the study relies on a structured questionnaire distributed to EFL Master students at The University of Ain Temouchent. This instrument is designed to gather data regarding student experiences with various artificial intelligence tools, identifying the specific technologies used and measuring how these advancements influence academic behaviour and overall achievements. By focusing on a specific student body, the case study provides a focused look at how emerging technologies are integrated into a particular academic environment.

Complementing this, the second phase involves conducting interviews with teachers at the same institution. These sessions explore the professional experiences of educators regarding the recent shift toward Artificial Intelligence, with a specific focus on its impact on student behaviour, academic integrity, and classroom participation. By combining these two distinct modes of inquiry, the researcher can examine the phenomenon from multiple perspectives, providing a more profound and nuanced understanding of the evolving educational landscape.

According to Johnson and Onwuegbuzie (2004), “Mixed methods research is the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts, or language into a single study” (p. 17).

2.4 Sampling

This research was conducted at Ain Temouchent University, and the population of this research is Master student of English language Literature & Civilization, Didactics & Applied Linguistics.

Creswell, 2014 “A sample is a subset of individuals selected from a larger population for the purpose of drawing conclusions about that population.” (p. 142). Essentially, it is often impossible or impractical to study every single person in a large group (the population). Instead, researchers select a smaller, manageable group (the sample) to study in detail. The goal is to ensure this smaller group accurately represents

the larger one so that the findings can be generalized, or applied, to the whole population with confidence.

2.4.1 Sampling techniques

The sampling method aligns with the type of research. In the case of this work, it is a mixed-method sampling aiming to identify the participants from whom to seek information. According to Saunders *et al.* (2007: p.208), sampling techniques split into two main streams: probability and non-probability sampling. According to Taherdoost (2016: p. 19), while probability sampling refers to the selection procedure in which all units randomly selected from the sampling frame have an equal probability or chance to be chosen, non-probability sampling refers to selection procedures in which elements are not randomly selected but by using specific methods of selection.

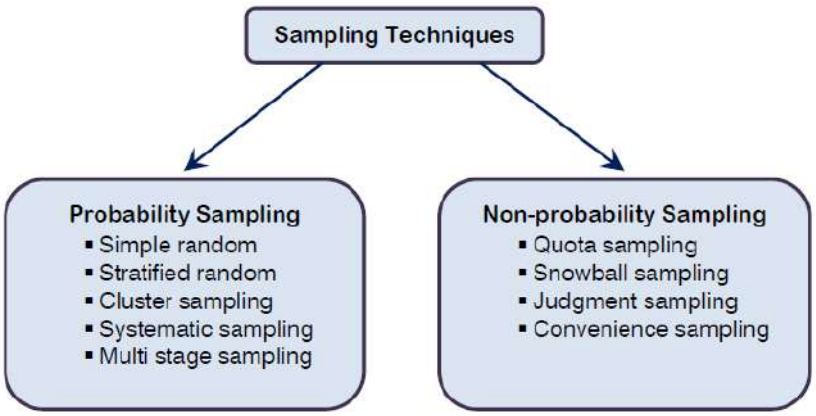

Figure 2-1:Sampling techniques (Taherdoost, 2016: p. 20)

In this study, a convenience sampling technique (a form of non-probability sampling) is used, which involves selecting participants who are easily accessible and willing to take part in the research. This method is commonly used in educational research, particularly when the target population is a specific academic institution. The choice of this sampling technique was limited by time and accessibility of participants.

Students who were available and interested in contributing to the research were invited to complete the questionnaire. Similarly, teachers who were willing to share their

experiences and opinions regarding the use of AI in education participated in the interview process.

Although convenience sampling may not represent the whole student population, it provides useful preliminary insights into how Artificial Intelligence is influencing student behaviour in the academic context.

2.4.2 Sample population

To organize the sample data effectively, the following table provides a detailed breakdown of the participants involved in the study at Belhadj Bouchaib University for the 2025/2026 academic year. This structured overview highlights the distribution of students and teachers across the two primary specializations: Didactics and Applied Linguistics, and Literature and Civilization.

Research Sample Distribution

Table 2.1 Research Sample Distribution For Students

Participant category	Level/year	specialization	Number of participants
Students	First Year	Didactics & Applied Linguistics	59
	First year	Literature & Civilization	35
	Second Year	Didactics & Applied Linguistics	42
	Second Year	Literature & Civilization	25
Total Sample			161

Table 2.2 Research Sample Distribution for Teachers

Participant category	specialization	Number of participants
	Didactics & Applied Linguistics	02
	Literature & Civilization	02
Total Sample		04

2.5 Research Instruments

In order to collect data for any research, the researcher needs instruments. In this study, two main research instruments were used: a questionnaire and interviews. These instruments were selected because they allow the researcher to gather both quantitative and qualitative data, which contributes to a deeper understanding of the impact of Artificial Intelligence on student behaviour in higher education.

According to Creswell (2014), research instruments are tools used by researchers to collect data from participants in order to address the research questions and objectives of a study (p. 155).

2.5.1 Questionnaire

Before constructing the actual questionnaire, the researcher followed a structured sequence of steps to ensure clarity, validity, and alignment with the study's objectives. These steps are summarised in Figure 2.2.

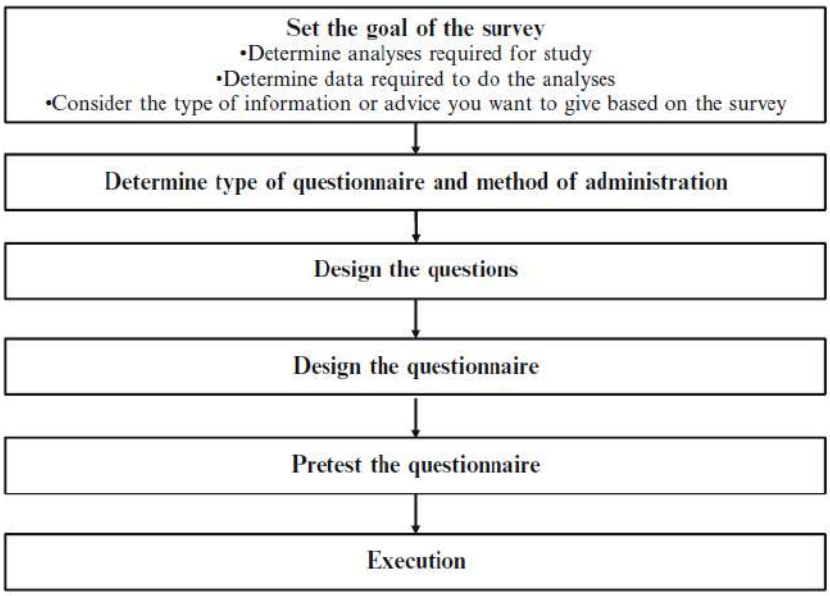

Figure 2.2 Steps in designing a questionnaire (Mooi and Sarstedt, 2011: p.53)

Table 2.3 the objectives of questionnaire's questions

Component / Theme	Questions	Objective
Demographic Information	Q1, Q2, Q3	To identify the demographic and academic profile of the participants, including gender, age, and academic level.
Use and Frequency of AI Tools	Q4, Q5, Q6	To investigate students' experience with AI tools, the frequency of their use, and the most commonly used AI applications in EFL learning.

Purposes and Integration of AI in Learning	Q7, Q8	To explore the main academic purposes for using AI tools and the extent to which these tools are integrated into students' daily learning routines.
AI and Academic Understanding	Q9, Q10	To examine students' perceptions of the role of AI tools in facilitating comprehension and understanding of course materials.
AI and Motivation / Engagement	Q11	To investigate the impact of AI tools on students' motivation and engagement in learning.
AI and Language Skills Development	Q12, Q13, Q14	To examine the contribution of AI tools to the development of language skills, particularly writing, vocabulary acquisition, grammar learning, and academic task performance.
Dependence and Autonomous Learning	Q15, Q17	To explore the extent of students' dependence on AI tools and their influence on learner autonomy.

Negative Effects and Challenges of AI	Q16, Q18, Q19	To investigate students' perceptions of the potential negative effects, limitations, and challenges associated with the use of AI tools in learning.
Teachers' Role and Responsible AI Use	Q20	To examine students' views regarding the role of teachers in guiding the responsible use of AI technologies in education.
Students' Attitudes Toward AI in Education	Q21, Q22, Q23	To assess students' overall perceptions and attitudes toward the usefulness, integration, and future role of AI in higher education and language learning.
Recommendations and Additional Feedback	Q24, Q25	To collect students' recommendations, opinions, and additional experiences regarding the use of AI tools in academic learning.

In addition to the questionnaire administered to students, a semi structured interview was conducted with university teachers in order to gain deeper insights into the impact of Artificial Intelligence tools on student's habits.

2.5.2 Semi Structured Interview

The interview included a series of questions divided into several sections, focusing on student's learning behaviour, and the challenges associated with its use in academic settings.

A number of teachers from the Department of English at the University of Belhadj Bouchaib in Ain Temouchent participated in the interview. Their responses provided qualitative data that helped the researcher better understand how Ai tools affect student's motivation, autonomy, academic performance, and study practices from the teacher's perspectives.

Table 2.4 the objective of semi structured interview's questions

Component / Theme	**Questions**	**Objective**
Background Information about the Participants	Q1, Q2	To identify the professional background of the participants, including their teaching experience and the general academic level of the students they teach.
Teachers' Awareness and Knowledge of AI	Q3	To determine teachers' level of awareness and familiarity with Artificial Intelligence tools in education.
Students' Use of AI Tools	Q4, Q5	To examine students' use of AI tools in academic learning and identify the most frequently used AI applications from the teachers' perspective.
Teachers' Attitudes Toward AI in Education	Q6	To explore teachers' general attitudes and perceptions regarding the use of AI in students' learning.

AI and Changes in Students' Learning Habits	Q7, Q11, Q12	To investigate teachers' observations regarding the influence of AI on students' learning behaviors, independent learning abilities, and possible overreliance on AI technologies.
AI and Academic Performance	Q8, Q9, Q10	To evaluate teachers' perceptions of the role of AI in improving students' comprehension, motivation, engagement, and academic performance.
Negative Effects and Challenges of AI Use	Q13, Q14, Q15, Q16	To explore the potential negative effects, ethical concerns, and challenges associated with the use and management of AI technologies in education.
Recommendations and Responsible AI Use	Q17, Q18	To gather teachers' suggestions and advice regarding the effective, ethical, and responsible use of AI tools in education.
Future of AI in Education	Q19	To explore teachers' perspectives on the future impact of AI in education.

2.6 Data analysis

In order to collect reliable data and answer the research questions, appropriate research instruments are required. The collected data were carefully analysed and interpreted. The analysis focuses on understanding the impact of Artificial Intelligence tools on student's learning habits in the context of English as a Foreign Language (EFL). The data were obtained through two research instruments: a student's questionnaire and a teacher interview. Both quantitative and qualitative approaches were used in the analysis to provide a comprehensive understanding of the research topic.

2.6.1 Analysis of the student's Questionnaire

The analysis of the student's questionnaire focuses on examining the responses provided by the participants regarding their use of Artificial Intelligence tools in their learning process. The data collected from the questionnaire were analysed quantitively, especially for the closed-ended questions, by calculating frequencies and percentages. The results are presented through The column chart, tables and pie charts to illustrate the distribution of student's responses. In addition, the open-ended questions were analysed qualitatively by identifying common ideas and recurring themes in student's answers in order to better understand their perceptions and experiences with AI tools.

Table 2.4 the answers of Q1,Q2,Q3 from the questionnaire

Variable	Category	Frequency	Percentage
Gender	Female	38	88%
	Male	4	12%
Age	20-23 years old	40	91%
	24-27 years old	2	4%
	28 years and above	2	5%
Academic Level	Master one	34	77%
	Master two	10	23%

Description of the Table

The table above presents the demographic profile of the participants involved in the study. Regarding gender distribution, the majority of the participants were female

students, representing 88% of the sample, while male students accounted for only 12%. In terms of age, most participants (91%) were between 20 and 23 years old, whereas only a small percentage belonged to the age groups of 24–27 years and 28 years and above. Concerning academic level, the majority of the respondents were Master One students, representing 77% of the sample, while Master Two students constituted 23%. These results indicate that the study mainly targeted young EFL Master students with varying levels of academic experience.

Question 4: Students' Familiarity with AI Tools in Academic Tasks.

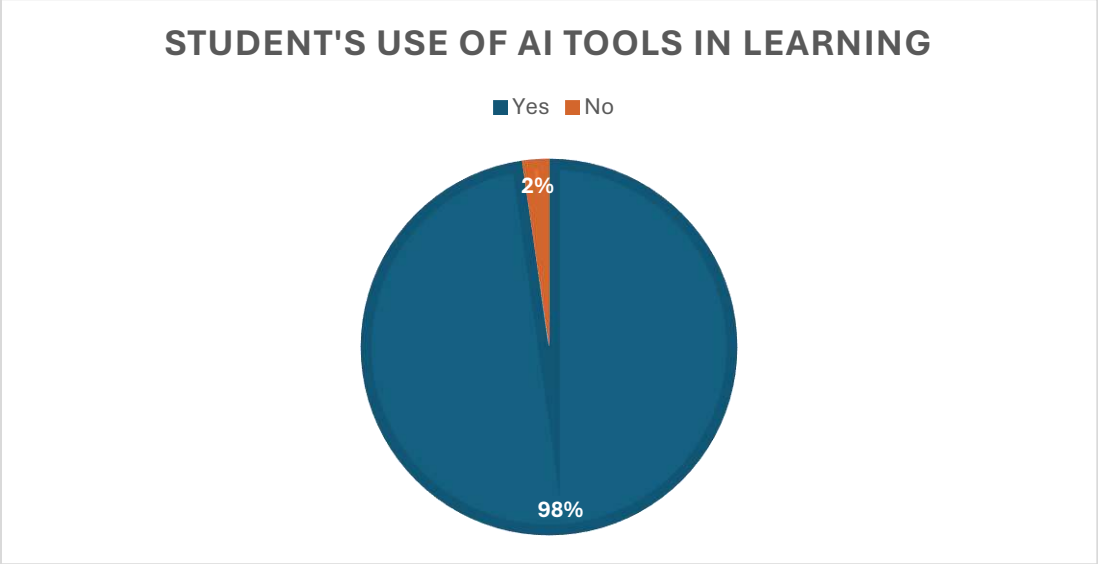

Figure 2.3 student's use of AI tools in learning

The pie chart illustrates whether students use AI tools regularly in their learning routine. The results show that 98% of respondents answered "Yes", indicating that the vast majority of students integrate AI tools into their academic activities.
In contrast, only 2% of the students reported that they do not use AI tools regularly.

Question 5: Students' Interest in Using AI-Based Tools in Their Studies.

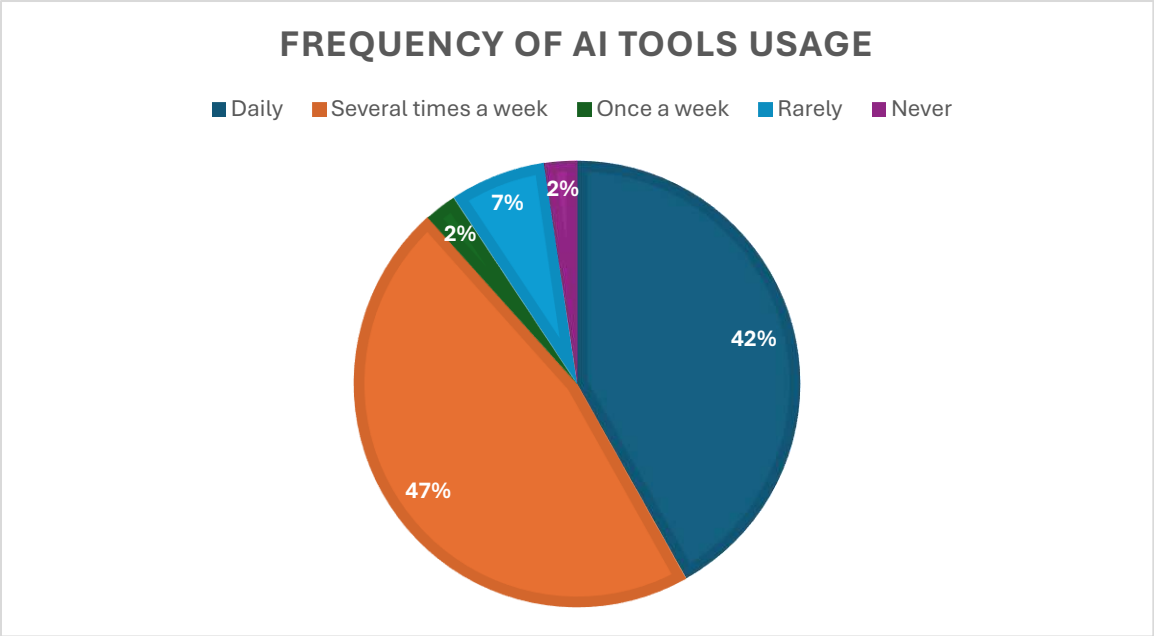

Figure 2.4 frequency of AI tools usage

The pie chart illustrates the frequency with which students use Artificial Intelligence tools for academic learning. The results indicate that a large number of students rely on Ai tools regularly in their studies.

According to the chart, 47% of respondents reported using AI tools several times a week, which represents to the highest percentage.

In addition, 42% of the students declare that they use AI tools on daily basis. On the same pie chart, 7% reported using AI rarely, while only 2% indicate that the use it once a week and the other 2% never used AI tools for academic learning

Question 6: Perceived Impact of AI Tools on Students' Learning Experience.

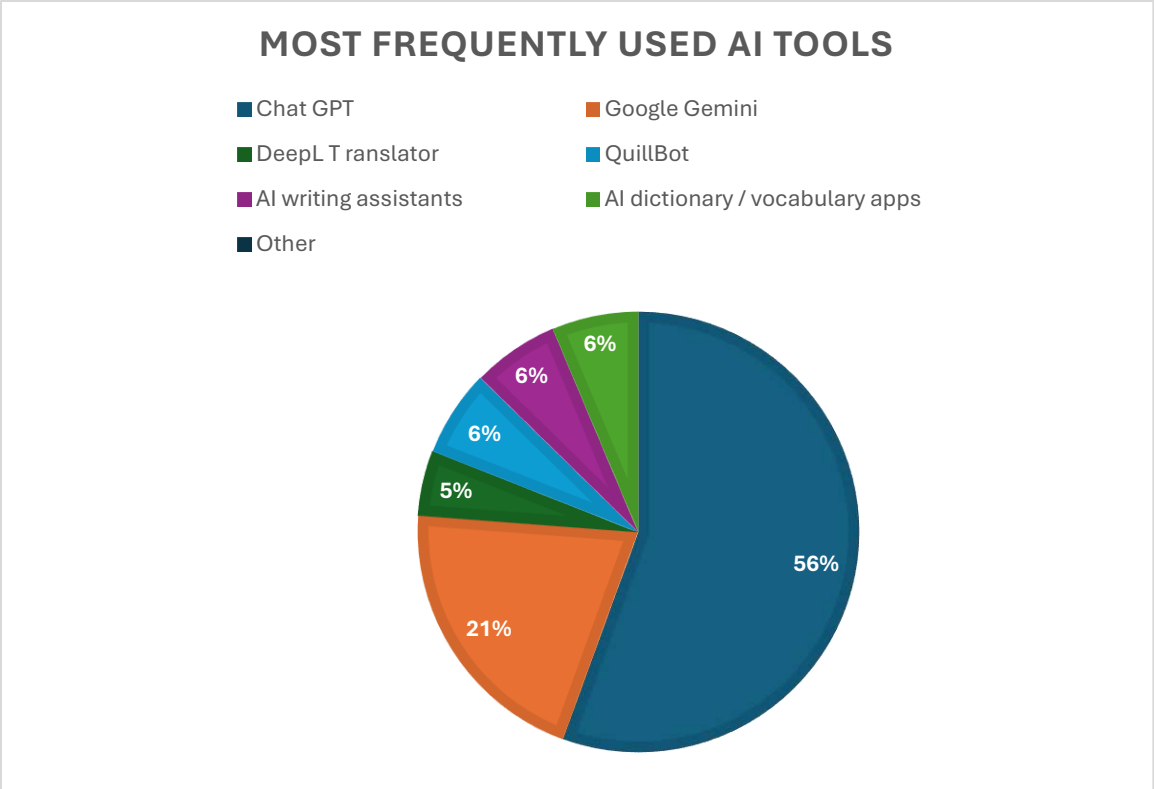

Figure 2.5 Most frequently used in AI tools

The Figure illustrates the AI tools most frequently used by students in their academic work. The results show that 56% of students use ChatGPT, making it the most used AI tool.

In addition, 21% of students reports using Google Gemini. Other tools are used less: 5% use Deeply Translator, while 6% use Quill Bot, 6% use AI writing assistants, and 6% use Ai dictionary / vocabulary applications.

Overall, the results indicate that conversational AI tolls such as ChatGPT dominate student's usage, while other AI tools are used less frequently for specific academic tasks.

Question 7: Purposes for Using AI Tools in Academic Studies.

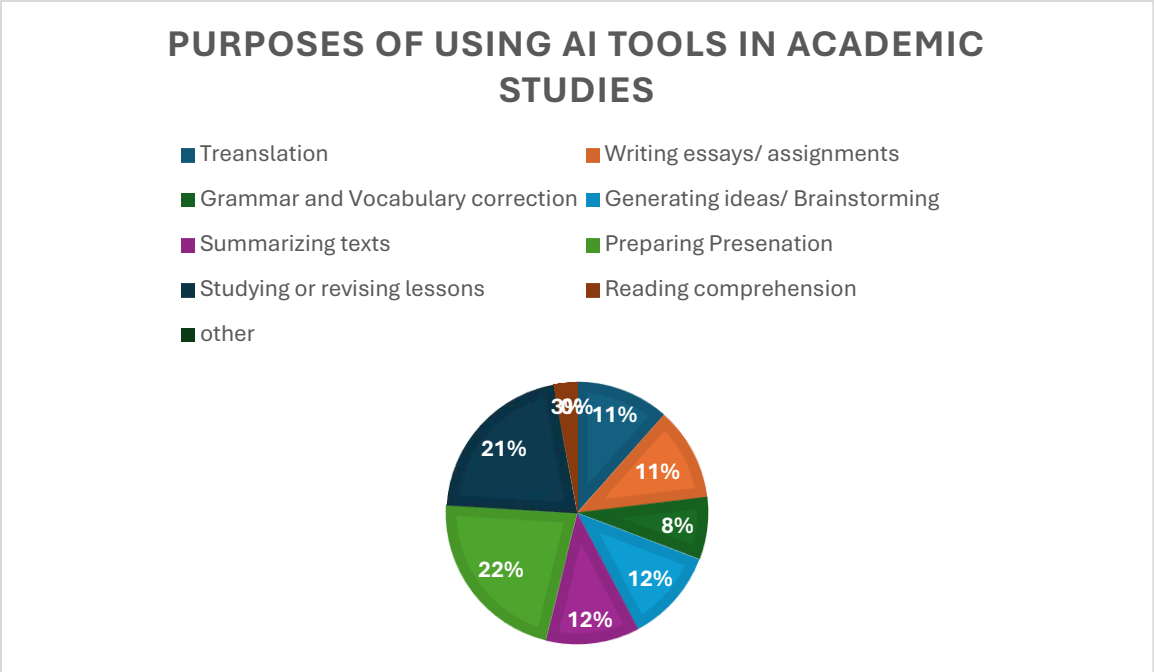

Figure 2.6 Purposes of using AI tools in academic studies

The column used presents main academic purposes for which students use AI tools. The results show that the most common use is preparing presentations 22%, followed by studying or revising lessons 21%.

Several other purposes were reported with similar frequencies. Translation, writing essays or assignments, generating ideas or brainstorming, and summarizing texts were each selected by 11% students. In contrast, grammar and vocabulary correction was chosen by 8% of students, while reading comprehension was the least selected purpose with 3% of responses.

Question 8: Regular Use of AI Tools in Students' Learning Routine.

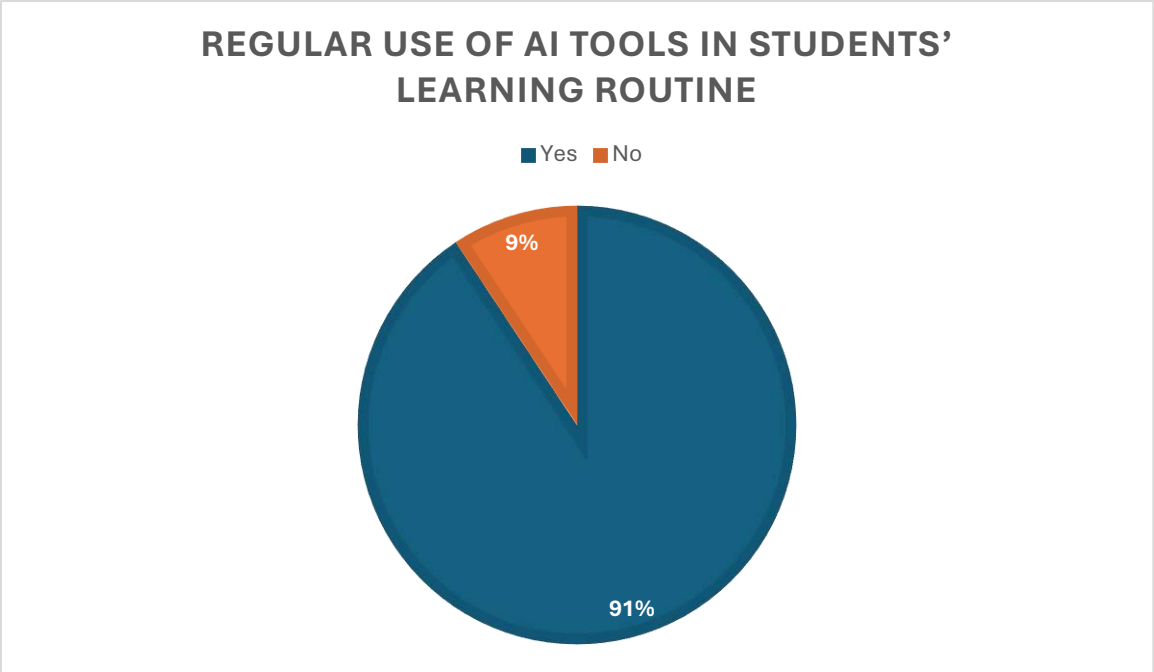

Figure 2.7 Regular use of AI tools in students' learning routine

The pie chart shows the use of AI tools when they learn. The results show that 91% of students said "Yes" indicating that the majority of students use AI tools when they do academic work and 9% said "No".

On the other hand, the students who answered "No" 9% explained that they do not consider AI tools part of their regular routine.

Question 9: Influence of AI Tools on Students' Understanding of Lessons.

According to the survey results, students indicated that AI tools assist their comprehension by breaking down complex lesson content into more manageable segments. Their feedback highlighted specific uses, such as using AI to summarize lengthy lectures, identify core concepts, and generate illustrative examples. These responses suggest that students primarily utilize these tools to streamline their study process and clarify difficult information, generally viewing AI as a practical aid for improving their grasp of academic material.

Question 10: The Role of AI Tools in Facilitating Students' Understanding of Lessons.

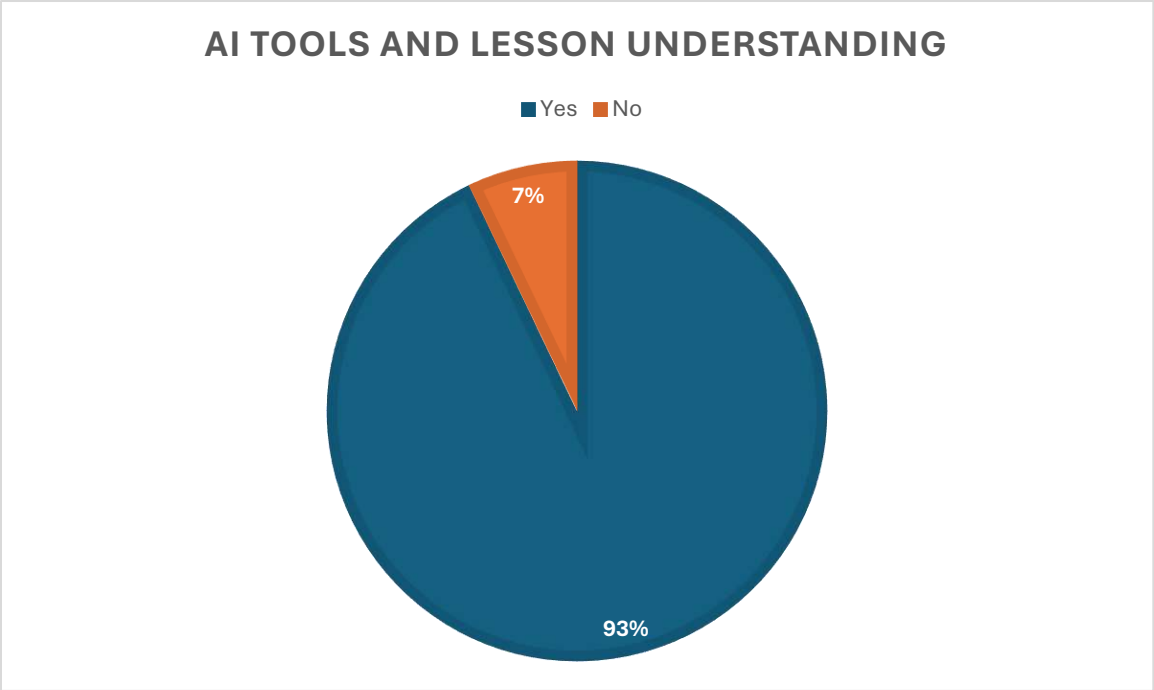

Figure 2.8 AI tools and lesson understanding

The results show that 93% of the participants answered "Yes", while 7% responded "No". This indicates that the majority of students believe that AI tools help them understand more easily.

Question 11: Influence of AI Tools on Students' Motivation to Study.

Participant responses regarding the impact of AI on motivation varied, though the majority reported a positive influence. Many students stated that the ability to complete tasks more quickly and easily serves as a significant motivator. Furthermore, respondents noted that when AI-generated explanations clarify difficult lesson content, they feel a greater desire to continue their studies and explore new academic topics.

The data also showed that the time-saving and organizational capabilities of AI encourage more efficient study habits. Some students highlighted that using these tools for brainstorming and conceptual clarification makes the learning process more engaging. Conversely, a small number of participants expressed concerns that over-reliance on AI could decrease their intrinsic drive or lead to a level of dependency that hinders their ability to function independently. Ultimately, the feedback indicates that while AI is largely seen as a booster for motivation through clarity and efficiency, there is a recognized risk regarding the loss of self-reliance.

Question 12: Impact of AI Tools on the Quality of Students' English Writing.

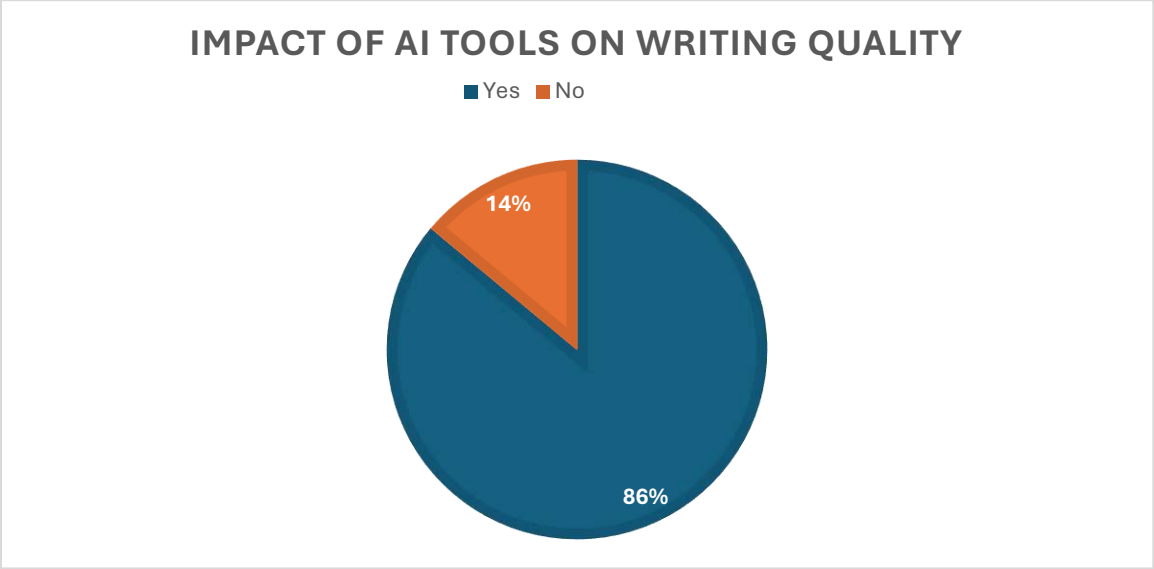

Figure 2.9 Impact of AI tools on the quality of students English writing

The results indicate that 86% of the participants answered "Yes", while 14% responded "No". This suggests that most students believe that AI tools contribute positively to improving their English writing skills.

Question 13: Learning Tasks That AI Tools Help Students Complete More Quickly.

Students reported using AI tools to assist with a variety of specific academic requirements. A significant number of participants identified text and lesson summarization as a primary use, allowing them to extract core concepts from lengthy or complex lectures. Additionally, respondents noted that these tools are frequently employed for essay drafting, grammatical correction, and the clarification of challenging theoretical concepts.

Further feedback indicated that students utilize AI for preparatory tasks, such as designing presentations, brainstorming initial ideas, and generating structured study notes. Other mentioned activities included searching for specific academic information, revising for examinations, and accelerating the process of answering extensive question sets. Collectively, the responses categorize AI as a multifunctional resource primarily used to manage time-intensive tasks related to writing, synthesis, and information retrieval.

Question 14: AI influence in learning new grammar and vocabulary.

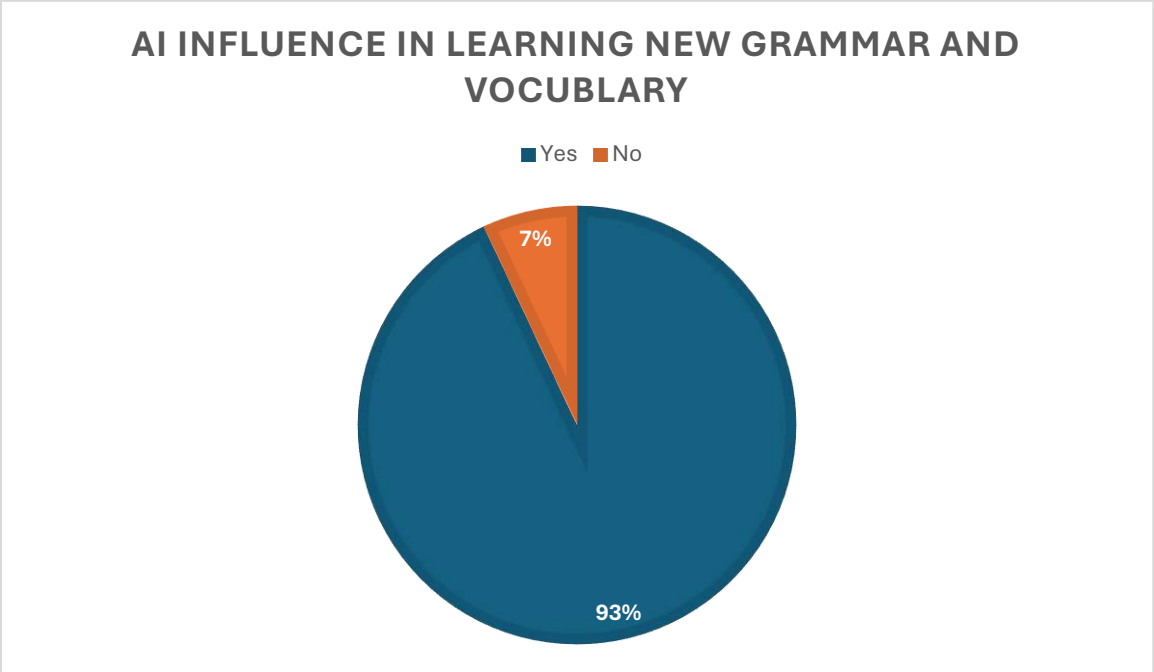

Figure 2.10 AI influence in learning new grammar and vocabulary

The data from this chart reveals that a significant majority of participants, 93%, believe AI tools assist in enhancing their vocabulary and grammatical knowledge. According to student feedback, these tools serve as a primary resource for discovering new terminology, identifying synonyms, and exploring various ways to paraphrase ideas. Many respondents noted that they actively use AI to proofread their writing, specifically requesting grammatical corrections or the reformulation of sentences to better understand accurate linguistic structures.

Further responses indicated that the repetitive exposure to AI-generated corrections and explanations aids in the retention of new vocabulary. Students also highlighted the utility of these tools in selecting contextually appropriate language and clarifying complex grammar rules. Collectively, the participants' input describes a process where linguistic competence is reinforced through the immediate feedback, examples, and stylistic adjustments provided by artificial intelligence.

Question 15:Student’s level of dependence on AI tools.

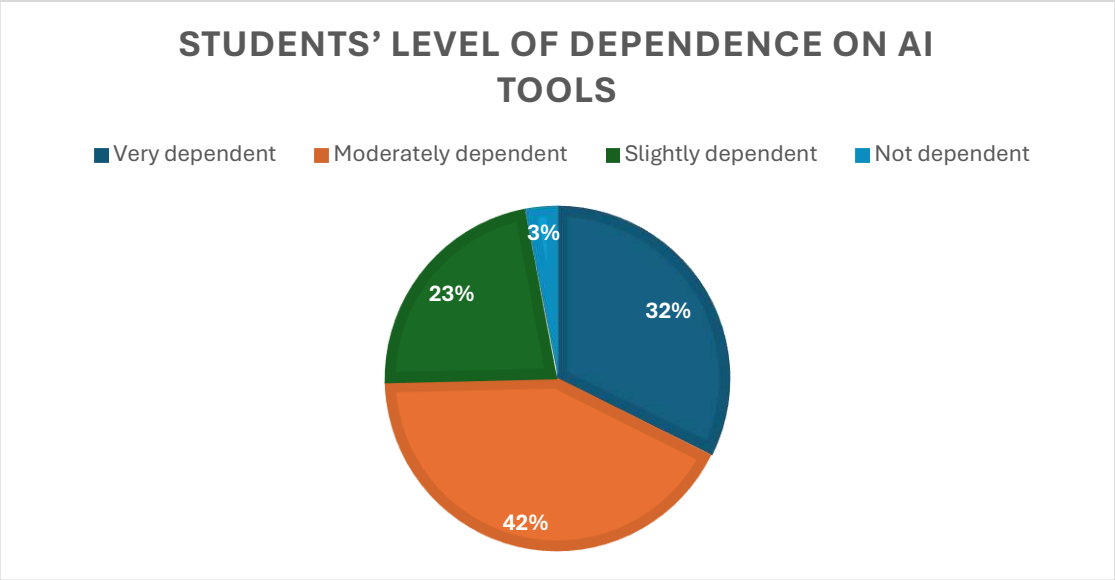

Figure 2.11 Student's level of dependence on AI tools

The pie chart illustrates student's level of dependence on AI tools when completing assignments. The results show that 42% of the respondents reported being moderately dependent on AI tools, representing the largest proportion of participants. In addition, 32% stated that they are very dependent on AI tools.

On the other hand, 23%of the students indicated that they are only slightly dependent, while 3% reported that they are not dependent at all.

Question 16: Perceptions of the Impact of AI Tools on Critical Thinking.

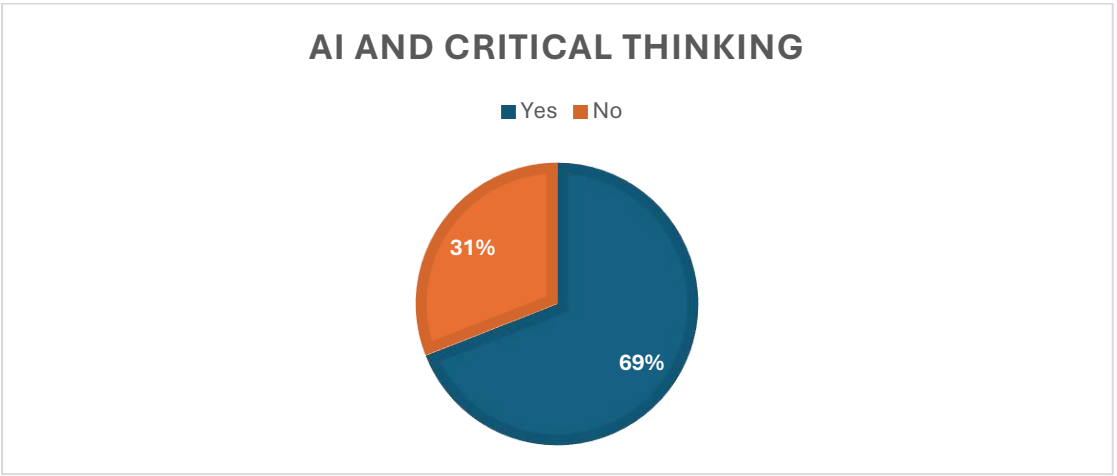

Figure 2.12 AI and critical thinking

According to the survey data, 69% of participants indicated that AI usage could negatively impact critical thinking, while 31% did not share this concern. Students in the majority group reported that an over-reliance on the technology often leads to a dependence on pre-generated answers. Their feedback suggested that because AI provides immediate solutions and interpretations, there is a risk that learners may bypass the deep analysis and personal reflection required to form independent conclusions.

Conversely, the minority of respondents argued that AI does not inherently diminish critical thought. These students noted that the technology can be used to stimulate new ideas, generate discussion questions, and provide a framework for developing personal opinions. This group emphasized that the outcome is determined by the user's approach, maintaining that AI can serve as a supportive resource as long as the student remains the primary evaluator of the information. Taken together, the responses highlight a tension between the risk of cognitive dependency and the potential for responsible augmentation of the learning process.

Question 17: Influence of AI Tools on Students' Ability to Study Independently.

Students reported that AI tools facilitate independent learning by providing on-demand explanations and supplementary information. Participants noted that these tools allow them to resolve difficulties with complex topics without immediate assistance from instructors or peers. Additionally, some respondents use AI to organize their study schedules and explore personal ideas, though a small group of students clarified that they maintain their independence by using AI only as a secondary reference.

Question 18: Challenges of using AI tools.

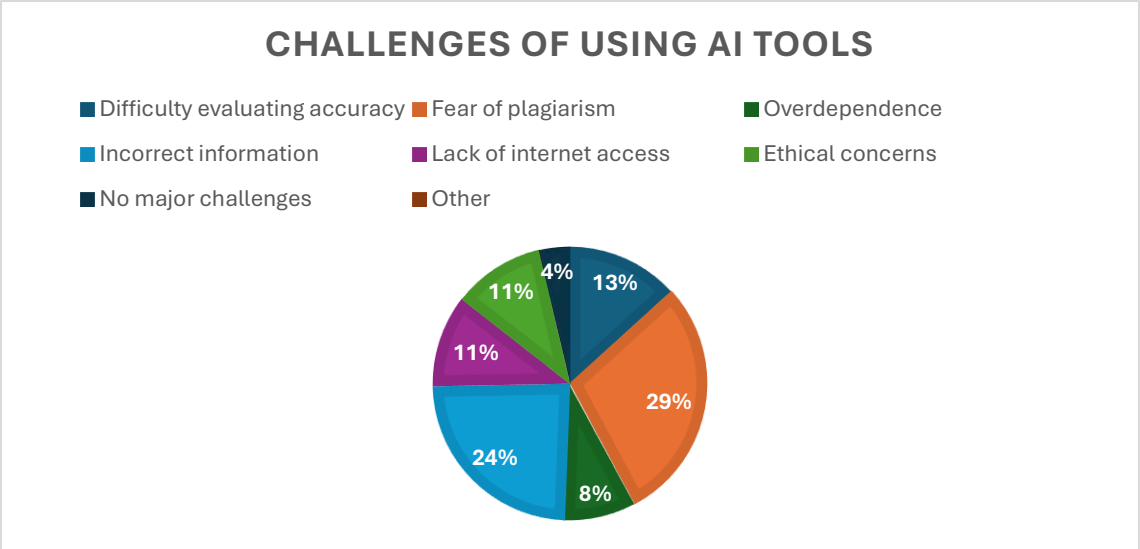

Figure 2.13 Challenges of using AI tools

The survey identified several obstacles encountered by students, with the fear of plagiarism (29%) and the reception of incorrect information (24%) cited as the most prominent concerns. Other identified challenges included difficulties in verifying the accuracy of AI outputs (13%), technical issues such as lack of internet access (11%), and broader ethical concerns (11%). A smaller portion of the sample highlighted a growing overdependence on technology (8%), while 4% reported facing no significant challenges.

Question 19: Confusion Caused by AI Tools Due to Unclear or Complex Answers.

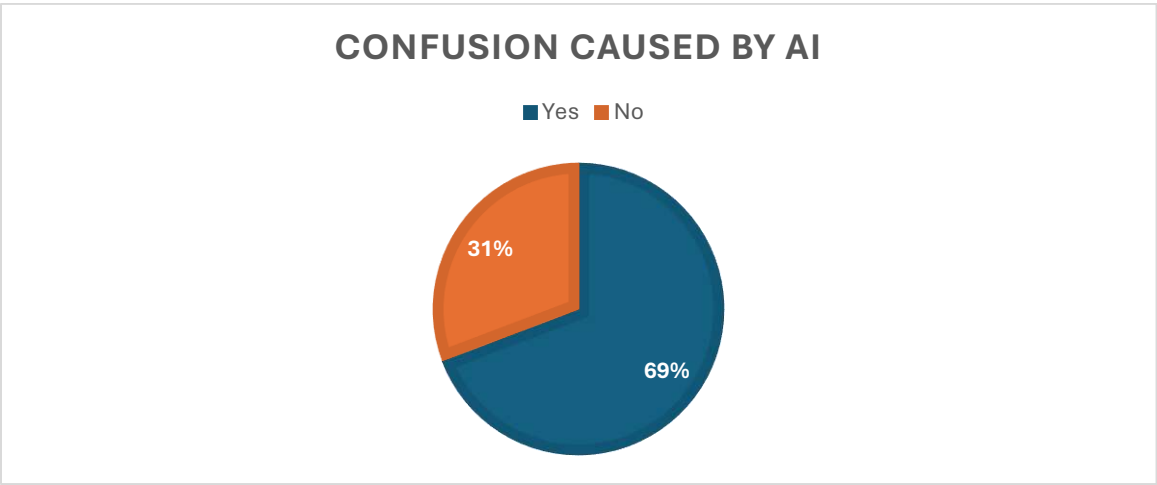

Figure 2.14 confusion caused by AI

Data shows that 69% of students have experienced confusion due to unclear or overly long explanations provided by AI. Participants mentioned that receiving contradictory answers to the same inquiry or general responses that lack specific relevance creates uncertainty. While a minority of 31% did not report this issue, those who did noted that inaccuracies are particularly prevalent in subjects requiring deep critical analysis, such as history or science.

Question 20: Need for teacher guidance in the AI use.

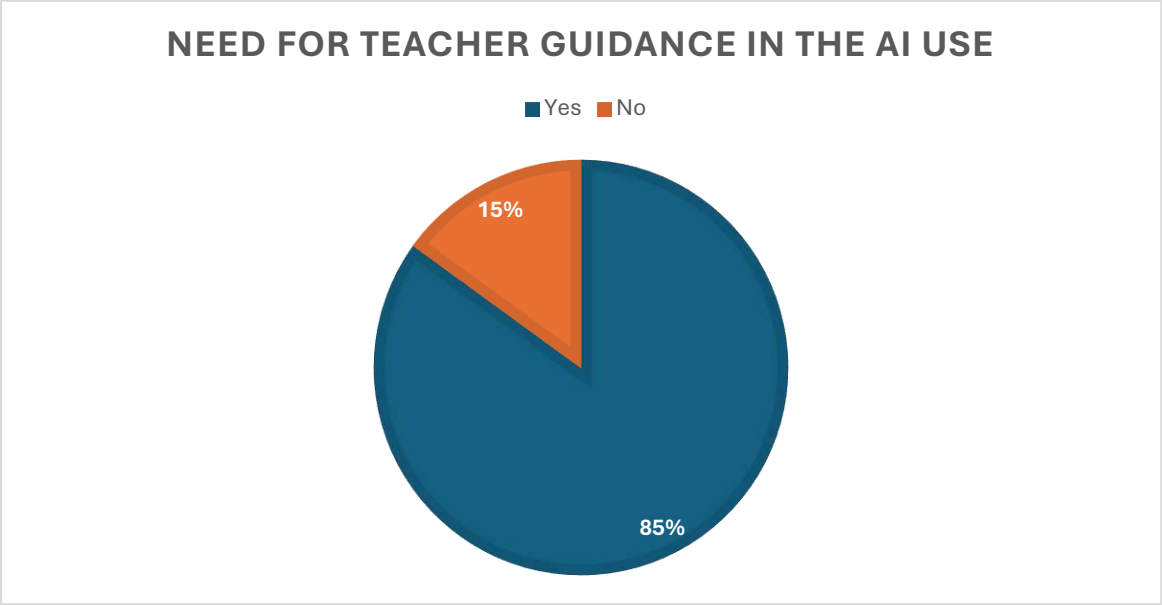

Figure 2.15 Need for teacher guidance in the AI use

The vast majority of respondents (85%) indicated a need for pedagogical guidance regarding AI usage. Students suggested that instructors should teach them how to use these tools effectively and responsibly to avoid ethical pitfalls like plagiarism and cognitive overdependence. The feedback emphasizes a desire for clear academic instructions on how to treat AI as a supportive learning resource rather than a primary source of information.

Question 21: Perceived usefulness of AI tools in EFL learning.

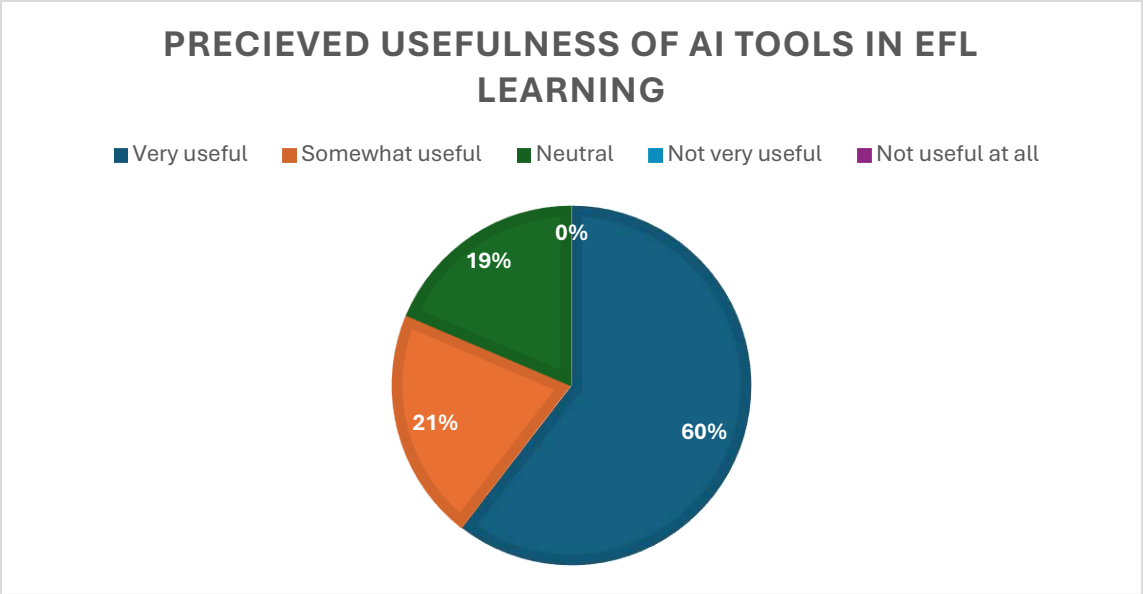

Figure 2.16 Precieved usefulness of AI tools in EFL learning

Regarding language acquisition, 60% of participants categorized AI tools as very useful, while 21% found them somewhat useful. Only 19% remained neutral. These results describe a general consensus among students that AI serves as a valuable asset for understanding lessons, improving specific language skills, and facilitating the overall EFL learning process.

Question 22: Integration of AI tools in higher education.

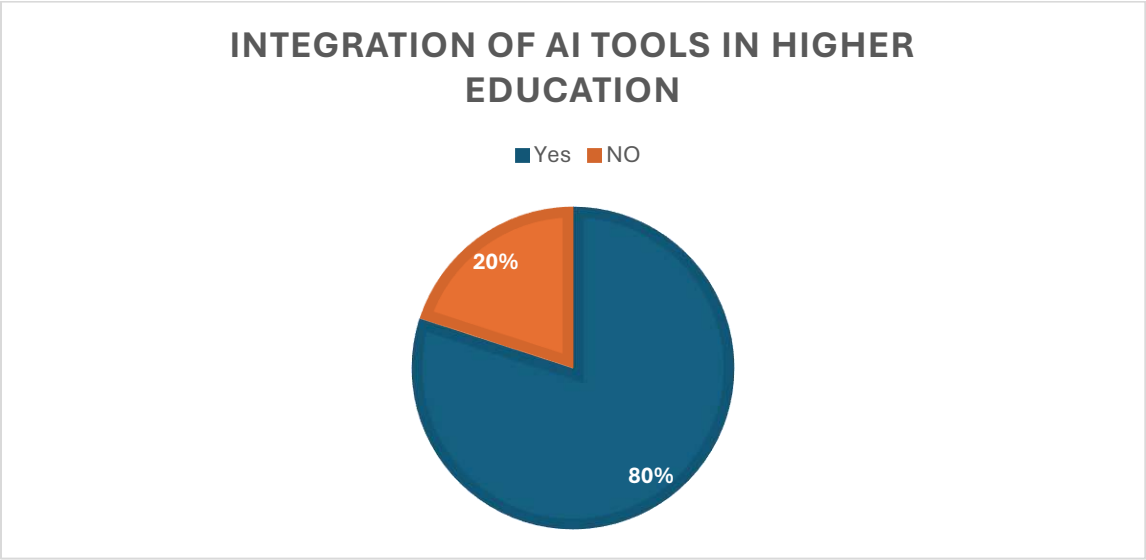

Figure 2.17 Integration of AI tools in higher education

A significant 80% of students support the formal integration of AI tools into university settings, arguing that they make learning more efficient and provide personalized explanations that clarify traditional lecture material. Those in Favor also noted the importance of staying current with global technological trends. Conversely, 20% of respondents expressed reservations, advocating for strict limits to ensure that technology does not lead to excessive student reliance.

Question 23: Perceptions of the Future Role of AI in Education.

Students anticipate that AI will become a permanent and necessary fixture in education, acting as an automated academic assistant. While many expect it to enhance the quality of learning and information access, some participants voiced concerns that future developments might stifle human creativity or eventually displace traditional teaching roles.

Question 24: Suggestions for Improving the Use of AI in Learning.

Participants proposed several strategies for optimization, focusing primarily on the ethical and responsible use of technology to prevent plagiarism. Specific suggestions included incorporating AI literacy into university curricula, developing specialized platforms for distinct academic fields, and using AI to customize lessons according to individual learning styles and scientific research needs.

Question 25: Additional Comments on Their Experience with AI Tools.

Final remarks from students highlighted a duality in their experience; while they value AI for its ability to summarize content, correct grammar, and save time, they are wary of its impact on critical thinking. Many participants concluded that while the tools are beneficial for organizing and facilitating academic work, they must be used with caution to preserve independent reflection and prevent the misuse of technology for academic dishonesty.

2.6.2 Analysis of the Teacher Interview

The teacher interview data were analysed qualitatively in order to gain deeper insights into teacher's perspectives on the use of Artificial Intelligence.

Teaching Experience and Student Proficiency (Q1 & Q2)

Teaching experience: The responses show that most teachers have more than six years of experience, while a smaller number have between 1 and 3 years. This indicates that the majority of participants are experienced teachers, which adds credibility to their insights. At the same time, the presence of less experienced teachers introduces some diversity in perspectives.

Student's proficiency level: All teachers agree that their students are at an intermediate level, with only one mentioning upper-intermediate in addition. This shows a high level of consistency across different universities, suggesting that the student population has a similar English proficiency level, which makes the data more comparable and reliable.

Teacher Familiarity with AI (Q3)

Familiarity with AI tools: The responses show a variation in teacher's familiarity with AI tools, ranging from not familiar and slightly familiar to somewhat familiar and very familiar. However, most answers tend to fall in the lower range (slightly/somewhat familiar), with only one teacher reporting being very familiar. This indicates that, overall, teachers do not have a strong or consistent level of knowledge about AI tools. Such variation suggests that teacher's perceptions and attitudes toward AI may be influenced by their level of exposure and understanding.

Student AI Usage and Tools (Q4 & Q5)

Student's use of AI tools: The responses clearly indicate that AI tools are widely used by students. The majority of teachers answered "yes, frequently," showing that AI has become a common part of student's academic practices. Only one teacher mentioned "sometimes" and another "rarely," with the latter associating AI mainly with cheating or full reliance on it for assignments.

Most commonly used AI tools: The results show that ChatGPT is by far the most commonly used tool, as it was mentioned in almost all responses. Other tools such as Grammarly, AI translators, and AI writing assistants were also cited, but less frequently.

A few teachers mentioned additional tools like Gemini and DeepSeek, indicating some diversity in usage.

General Perception of AI in Learning (Q6)

Overall perception of AI tools in student's learning: The responses reveal diverse but mostly cautious attitudes toward AI. While a few teachers express a positive view, highlighting benefits such as personalized learning and instant feedback, the majority adopt a critical or balanced perspective. Many teachers describe AI as a double-edged tool, emphasizing that its value depends on how it is used. A recurring concern is that students tend to over-rely on AI, using it as a shortcut rather than a support tool.

Study Habits, Autonomy, and Dependency (Q7, Q11 & Q12)

Teachers generally observe that AI has negatively impacted study habits by increasing procrastination and reducing both critical thinking and peer collaboration. Most participants view student independence as an "illusion" of autonomy that masks a deep, often unguided dependency, where students act as passive users rather than engaged learners.

However, the interpretation of this shift varies. While many describe the current reliance on AI as a "parasitic relationship" caused by a lack of oversight, a minority of perspectives suggest that AI could foster genuine self-paced learning. From this view, dependency is seen as a natural stage of adopting new technology that can become productive if managed with proper guidance.

Understanding, Motivation, and Performance (Q8, Q9 & Q10)

Teachers hold mixed views on the effectiveness of AI, acknowledging its ability to provide personalized explanations while maintaining that it cannot replace the deep understanding gained through human interaction and individual effort. While AI can reduce the fear of making mistakes and offer helpful instant feedback, there is a strong concern that it shifts student motivation toward convenience and time-saving, ultimately undermining the desire for genuine learning.

Regarding outcomes, the impact on academic performance appears divided. Although some teachers note visible improvements in the quality and organization of student work, many argue these gains are superficial. The consensus suggests that while AI may boost

short-term results, it often fails to reflect a student's actual abilities or the development of long-term academic skills.

Critical Thinking, Ethics, and Teacher Challenges (Q13, Q14, Q15 & Q16)

AI and critical thinking skills: Most teachers believe AI tools reduce students' critical thinking skills. They argue that students tend to accept AI-generated answers without questioning, which limits their ability to analysed and think independently.

Challenges students face: The main challenges identified are overreliance on AI, lack of effort, and difficulty engaging in deep learning. Other challenges include difficulty in asking effective questions and verifying information.

Plagiarism and academic dishonesty: Most teachers express serious concerns about plagiarism and cheating. AI is seen as making it easier for students to submit work that is not their own, which creates problems of fairness and trust in assessment.

Difficulties faced by teachers: Teachers report challenges related to lack of control and adaptation. Some feel unprepared as AI evolves quickly, while others highlight difficulties in designing fair assessments and ensuring academic honesty.

Management Strategies and Recommendations (Q17 & Q18)

Strategies for managing AI: The responses show two opposing approaches. Some teachers suggest integrating AI into teaching through clear guidelines and adapted assessments. In contrast, other teachers take a rejecting position, believing AI should be banned or avoided entirely.

Recommendations for students: Most teachers agree that AI should be used as a support tool, not a replacement. Students are encouraged to think independently, question AI outputs, and maintain intellectual effort rather than simply copying answers.

Future Outlook of AI in Education (Q19)

Future of AI in education: The responses reveal contrasting visions. Some teachers are pessimistic, fearing that AI will replace traditional teaching and human interaction. Others are more optimistic, viewing AI as a tool that can transform education positively through personalized learning. A third perspective suggests the future impact depends entirely on how AI is regulated and used.

2.7 Conclusion

In conclusion, this chapter establishes a robust mixed-methods framework to investigate the impact of AI on EFL learning habits in Algeria. By combining quantitative data from 161 students with qualitative insights from teacher interviews, the study outlines a clear path to test whether a lack of teacher AI competence hinders instruction and if self-training can effectively bridge this gap. Despite limitations like time constraints and limited access to other departments, the methodology provides a replicable model for examining how AI reshapes student autonomy and academic integrity.

Building on this methodological foundation, the focus shifts from research design to the actual examination of evidence. The following chapter presents the analysis and interpretation of data collected from student and teacher questionnaires, alongside interviews conducted before and after a self-training intervention. This analysis aims to validate the research hypotheses regarding the negative impact of teacher AI-deficiency and the corrective power of self-training. The findings are presented chronologically—from initial questionnaires to post-training results—concluding with practical recommendations for the future of EFL education.

Chapter three : Discussion and Interpretation of main results, Suggestions and Recommendations.

3.1 Introduction

The previous chapters of this research provided both theoretical and practical insights into the impact of Artificial Intelligence on students' learning habits in the EFL context. The first chapter reviewed the main concepts related to AI in education, learner autonomy, critical thinking, self-training, and teacher competence. The second chapter presented the methodological framework of the study, including the research design, participants, data collection instruments, and data analysis procedures used with teachers and students at the University of Ain Temouchent.

Based on the findings obtained from the teachers' interviews and students' questionnaires, it became evident that Artificial Intelligence represented a double-edged tool in EFL learning. While AI offered support and flexibility in learning, it also raised challenges related to critical thinking, learner autonomy, academic integrity, and motivation. Therefore, this chapter was divided into two main sections. The first section discussed and interpreted the main findings in relation to the research hypotheses, while the second section presented recommendations and suggestions for a responsible and effective integration of AI in the EFL learning context.

3.2 Discussion and interpretation

The findings of this study reveals that the impact of AI tools on students' learning habits is complex and multidimensional, combining both positive and negative effects. Both the students' questionnaire and teachers' interviews shows that AI has become an integral part of academic practices, especially in tasks such as writing, summarizing, and understanding lessons. On the one hand, the results indicates that AI tools contribute positively to learning by simplifying complex content, providing explanations, and offering personalized support. Many students reported that AI helps them better understand lessons, while some teachers also confirmed that AI can enhance comprehension through examples and step-by-step explanations. This reflects a shift toward more student-cantered and flexible learning, where learners can study at their own pace.

On the other hand, both students' and teachers' responses highlighted serious concerns. The most significant issue was overreliance on AI, which led to reduced effort,

passive learning, and limited engagement with the learning process. Teachers particularly emphasized that students tended to depend on ready-made answers instead of developing their own ideas, which negatively affected critical thinking and deep understanding. This confirmed that AI might create an illusion of learning, where students completed tasks successfully without actually acquiring knowledge. Another important finding was the paradox of learning autonomy. While some students believed that AI helped them become more independent, teachers argued that this independence remained superficial, as students relied heavily on AI instead of conducting research or thinking critically. This contradiction showed that autonomy in the presence of AI was not always genuine, but rather technology-dependent.

In terms of motivation, the results were also mixed. Some students felt more motivated due to the ease and speed of completing tasks, while teachers argued that this type of motivation was mainly extrinsic and short-term, focusing more on saving time than on meaningful learning. This reduced the value of curiosity and intellectual exploration. Furthermore, the issue of academic dishonesty emerged as a major challenge. Teachers expressed strong concerns about plagiarism and the difficulty of assessing students' real abilities. The availability of AI-generated content blurred the line between assistance and cheating, making evaluation more complicated and sometimes unreliable. Finally, the findings highlighted a gap between teachers' familiarity with AI and students' actual use of it. While students actively used AI tools, many teachers felt unprepared or uncertain about how to manage them. This created inconsistency in teaching practices and demonstrated the need for clear guidelines and professional training.

The effectiveness and success of the EFL teaching-learning process were determined by factors related to teachers, learners, and the educational setting. This study extended the importance of teacher content knowledge to include AI-related competence. The data suggested that the lack of AI-related competence among EFL practitioners in the Algerian context directly affected the quality of the teaching-learning process. Therefore, the findings confirmed the first research hypothesis, which stated that there was a negative relationship between EFL teachers' lack of AI competence and the effectiveness of the teaching-learning process. The greater the deficiency in AI

knowledge among teachers, the lower the effectiveness of instruction and the weaker the learning outcomes in terms of student engagement, skill development, critical thinking, and learner autonomy. If teachers did not possess the necessary AI-related skills to integrate these tools effectively, the teaching-learning process became less effective.

The second perspective presented in this work was that self-training represented a practical solution for reducing these deficiencies. Given the emphasis on learner autonomy and self-regulated learning, this principle also applied to EFL practitioners themselves. The findings also confirmed the second research hypothesis, which stated that self-training on AI applications for language teaching, such as chatbots, writing assistants, and grammar checkers, significantly reduced teachers' knowledge gaps. EFL practitioners who actively engaged in self-directed learning about AI became more capable of integrating these tools effectively into their teaching practices, resulting in improved teaching quality and reduced discomfort when facing AI-related pedagogical challenges. Overall, the findings suggested that AI tools were neither entirely beneficial nor entirely harmful; rather, their impact depended mainly on how they were used, the quality of guidance provided, and teachers' willingness to bridge their knowledge gaps through continuous self-training.

3.3 Suggestions and Recommendations

3.3.1 Strengthening Institutional Support and Educational Policies for AI Integration

From the results gathered in this research, it's concluded that the implementation of Artificial Intelligence in the field of English as a Foreign Language education remains hindered due to the following factors: The lack of institutional and academic guidelines on the implementation of AI technologies guidelines, and the poor preparation of teachers for using AI tools. Many teachers remained doubtful about how to implement artificial intelligence tools ethically and pedagogically in their classes to differentiate between acceptable academic assistance and academic misconduct.

One of the most important recommendations is the establishment of clear institutional policies concerning the use of AI tools in academic settings. Universities

should develop official guidelines that clearly explain the acceptable and unacceptable uses of AI applications in students' academic work. Such policies would help reduce confusion among teachers and students while ensuring fairness, academic integrity, and transparency in the teaching-learning process. Clear regulations would also support teachers in managing assignments and evaluations without uncertainty or inconsistency.

Universities should put more effort into ongoing training programs for teachers focused on AI and digital skills overall. Many instructors still do not know enough about how these tools actually work in practice. Workshops and seminars need to organised on a regular basis so teachers can build up their skills and feel more at ease using them.

It feels like the training has to cover more than just the basic functions Chatbots like ChatGPT, Grammarly, QuillBot and DeepL. There should be much focus on how these fit into lessons in a thoughtful way while keeping ethical concerns in mind. Teachers might need help figuring out how to spot AI written work from students. Activities that push for original thinking could be part of it too. Some people might see this as extra work on the top of everything else already expected.

Another important recommendation concerns the modernization of assessment methods in higher education. Traditional forms of homework and written assignments can easily be completed using AI-generated responses, which may reduce authentic student engagement and independent thinking. For this reason, universities are encouraged to adopt more interactive and authentic assessment approaches, such as in-class writing tasks, oral presentations, viva voce examinations, project-based learning, and collaborative activities. These methods can help educators evaluate students' actual language competence, communication skills, and critical thinking abilities more effectively.

Furthermore, policymakers should ensure equal access to technological resources and digital learning opportunities for both teachers and students. The integration of AI in education should not create inequalities between learners with different levels of access to technology. Therefore, institutions should provide adequate digital infrastructure, reliable internet access, and educational resources that support responsible and inclusive AI integration within the Algerian university context.

3.3.2 Redefining the Role of Teaching in an AI-Supported Learning Environment

It should be noted that teachers comprise one of the key factors which will enable the successful implementation of AI technologies in EFL. As AI tools are gradually entering the students' academic routines, teachers need to take on a new role. Namely, they must stop functioning simply as the information providers and start facilitating the process of using these tools and encouraging students to make critical use of them.

Instead of banning the use of AI in teaching, it is reasonable for teachers to adopt the right pedagogical approach aimed at encouraging students to use AI tools as a supportive instrument but not a substitute of their intellectual abilities. The former could be applied to generating ideas, checking the grammar, enriching vocabulary, and organizing writing, while students' own reasoning, critical thinking, and creativity should remain central to the learning process. Teachers should also promote what can be described as "human-in-the-loop" learning, where students actively interact with AI-generated content instead of passively accepting it. Learners should be trained to question the accuracy, reliability, and quality of AI responses, compare information from different sources, and identify possible errors or biases in AI-generated outputs. Such practices can contribute to strengthening students' critical thinking, problem-solving abilities, and learner autonomy.

Another important recommendation is the promotion of collaborative and interactive learning environments. Since excessive reliance on AI may reduce communication and peer interaction, teachers should design classroom activities that encourage teamwork, discussion, debate, and collective problem-solving. Group projects, peer-review tasks, oral discussions, and classroom presentations can help students maintain meaningful human interaction while developing language and social skills that AI technologies cannot fully replace.

In addition, teachers should engage in continuous self-training and professional development related to AI technologies and digital education. Free online resources, webinars, tutorials, and educational communities can provide valuable opportunities for teachers to improve their AI literacy and remain updated with recent technological developments. Continuous learning will enable educators to integrate AI more effectively and confidently into their instructional practices.

3.3.3 Recommendations for Students

Students also have an important responsibility in ensuring the responsible and beneficial use of Artificial Intelligence in education. Although AI technologies can facilitate learning and provide quick academic assistance, excessive dependence on these tools may negatively affect students' critical thinking, creativity, and independent learning abilities. Therefore, students should learn how to use AI in a balanced and productive manner.

One of the main recommendations for students is to prioritize genuine skill development rather than relying entirely on AI-generated content. AI tools should be used as supplementary resources for improving vocabulary, correcting grammar mistakes, organizing ideas, or exploring new concepts. However, the initial stages of research, writing, analysis, and problem-solving should be completed independently in order to strengthen long-term learning and academic competence.

Students are also encouraged to practice ethical transparency when using AI technologies in academic work. Being honest about the use of AI applications in assignments and projects helps maintain academic integrity and promotes trust between students and teachers. Understanding the difference between acceptable assistance and academic dishonesty is essential for ensuring responsible AI use within educational settings.

Moreover, students should develop the habit of critically evaluating AI-generated information instead of accepting ready-made answers without reflection. AI tools may sometimes provide inaccurate, incomplete, or misleading responses. For this reason, learners should verify information through reliable academic sources, compare different perspectives, and engage actively with the content they receive from AI applications. Treating AI as a tool for discussion and exploration rather than a final authority can significantly improve critical engagement and deeper understanding.

In addition to promoting responsible AI use, students should also be encouraged to maintain intrinsic motivation and active engagement in the learning process. Excessive dependence on AI-generated answers may gradually reduce students' willingness to think independently, participate actively, and make personal efforts in

language learning tasks. For this reason, learners should view AI technologies as supportive tools that enhance learning motivation rather than replace personal achievement and intellectual effort. Teachers can further strengthen students' motivation by encouraging creativity, rewarding original work, and designing meaningful learning activities that allow students to express their own ideas, opinions, and language abilities. Such practices can help students develop greater learner autonomy, self-confidence, responsibility, and long-term engagement in EFL learning.

Finally, students should maintain a balance between digital learning and human interaction. Participating in classroom discussions, collaborative projects, and peer learning activities remains essential for developing communication skills, teamwork, and social interaction, which are important components of successful language learning.

3.3.4 Developing AI-Oriented Curricula and Expanding Future Research Perspectives

The growing presence of Artificial Intelligence in education highlights the urgent need for curriculum designers to reconsider the content and objectives of EFL programs. AI literacy should become an essential component of modern language education in order to prepare both teachers and students for the changing educational environment.

Curriculum designers are encouraged to integrate AI literacy modules into EFL methodology and teacher-training courses. These modules should focus on developing students' and teachers' understanding of AI technologies, their educational applications, their limitations, and the ethical challenges associated with their use. In addition, learning outcomes related to critical thinking, digital literacy, creativity, and responsible technology use should be incorporated into EFL curricula.

Teaching materials and classroom activities should also be adapted to encourage reflective learning and authentic language production rather than memorization or dependence on ready-made responses. Curriculum developers should promote assignments that require analysis, interpretation, discussion, and critical evaluation of AI-generated content in order to strengthen higher-order thinking skills.

Regarding future research, further studies are needed to explore the long-term impact of AI integration and teacher self-training on students' learning habits and

academic performance. Longitudinal studies could provide deeper insights into how AI technologies influence learners and educators over extended periods of time. Researchers are also encouraged to investigate the effects of AI on other language skills such as speaking, listening, pronunciation, and communication competence, which were not fully explored in the present study.

In addition, future research could employ larger and more diverse samples from different universities and educational contexts in Algeria in order to produce broader and more generalizable findings. Qualitative approaches such as focus groups, classroom observations, and student diary studies may also provide a deeper understanding of students' experiences, attitudes, and challenges regarding AI use in language learning. Finally, future studies should continue exploring the development of clear pedagogical and ethical frameworks that can support the effective and responsible integration of Artificial Intelligence into EFL education.

3.3.5 Conclusion

The third chapter provided a set of recommendations to promote to promote a balanced and productive use of Artificial Intelligence in Algerian EFL education. The findings shows that AI has both positive and negative effects on students' learning habits. While it supports understanding, simplifies tasks, and enhances access to information, excessive reliance on it may reduce critical thinking, motivation, and genuine learner autonomy. The study also highlights a gap in teachers' AI competence, which affects their ability to effectively guide students in using these tools.

Therefore, effective integration of AI requires cooperation between institutions, teachers, and students. Universities should provide clear policies and training, teachers should guide students toward critical and ethical use of AI, and students should use it as a supportive tool rather than a replacement for their own effort. Overall, AI should be seen as a complementary resource that enhances learning when used responsibly and with proper guidance.

General conclusion

Introducing artificial intelligence (AI) to English as a Foreign Language (EFL) education is considered one of the most recent breakthroughs in contemporary higher education. The increased use of AI technologies by Algerian students, on the one hand, has brought numerous possibilities and, posed many challenges for both students and their teachers. Although the use of AI technologies has grown tremendously in educational contexts, most EFL teachers have not acquired the adequate knowledge or professional skills to assist students in the teaching-learning process. Thus, there are growing fears regarding students' learning strategies, critical thinking skills, learner autonomy, and the ethical application of AI in education. As such, the present study sought to explore the link between AI competence of teachers and the effectiveness of the teaching-learning process, taking into consideration the possible role of self-training as a feasible approach to fill the knowledge gap of teachers.

Theoretical and practical issues concerning the integration of AI in EFL education have been addressed throughout this research process. Key concepts such as Artificial Intelligence in education, teacher competence, learner autonomy, self-training, and students' learning styles were studied. Furthermore, the case study method with a combination of quantitative and qualitative approaches were employed for gathering relevant data among EFL teachers and students at the University of Ain Temouchent. Various tools were utilized for examining experiences, perceptions, and practices of the participants in terms of employing artificial intelligence technology in EFL learning and teaching. The effect of a short self-training session on teachers' confidence and practice in integrating artificial intelligence technology into their instruction was also investigated.

As the results of this study showed us there are an association between the lack of proficiencies among EFL educators regarding AI capabilities and how this negatively influence both the teaching-learning process, and how students experience learning. Furthermore, students at the beginning to incorporate AI technology into their practice regularly, this might hinder the development of critical thinking and autonomous learning skills. In contrast, however; self-training options for teachers could be beneficial in improving their ability to incorporate AI into their classroom. With this in mind, this study has reported that successfully balancing the potentially positive aspects

of AI technology as well as considering ethical issues related to its use; is of utmost importance.

The study encountered several limitations when attempting to meet its research goals. The research was conducted in a single university setting, with a relatively small sample of teachers that may limit the generalizability of the results. Additionally, the duration of the self-training intervention appeared to be too short to explore how AI training impacts the long-term practices of teachers and their students' learning habits. The study also gathered a number of self-reported responses that reflects subjective perceptions rather than true practices. Furthermore, the study mainly focused on general AI tools, and did not examine specific AI applications for particular disciplines, or any other language-related elements such as speaking or listening. Lastly, the researchers faced both institutional limitations and practical realities. That limited the possibility of extending the research to a broader educational context.

The results of the present study can serve as a basis for suggesting several recommendations for future research in this field. Future studies can focus on the long-term implications of the introduction of AI and the self-training of teachers in various contexts and universities. Moreover, it is recommended to consider the influence of artificial intelligence technologies on other language skills such as speaking, listening, and pronunciation. What is also worth mentioning is that further research can use larger samples and adopt a comparative methodology in order to achieve more generalized results. Besides, it is also important to conduct in-depth interviews and other qualitative analysis of the perspectives of the students and identify frameworks of AI literacy and responsible integration of Artificial Intelligence into English as Foreign Language education.

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Appendices

Appendix A

Questionnaire

Introduction:

This questionnaire is part of a research study that explores the impact of Artificial Intelligence (AI) tools on students' learning habits, especially in EFL learning. It aims to understand how students use AI, for what purposes, and how it influences their learning, motivation, and academic performance.

Your responses are anonymous, confidential, and will be used only for academic purposes. Please answer honestly based on your personal experience.

Thank you for your participation.

Section 1: Personal Information

1. **Gender:**
   ☐ Male
   ☐ Female
2. **Age:**
   ☐ 20–23
   ☐ 24–27
   ☐ 28 or above
3. **Master level:**
   ☐ M1
   ☐ M2
4. **Have you ever used AI tools in your learning?**
   ☐ Yes
   ☐ No
   (If no, the questionnaire ends here.)

Section 2: Frequency and Types of AI Use

5. How often do you use AI tools for academic learning? *(Multiple choice)*
☐ Daily
☐ Several times a week
☐ Once a week
☐ Rarely
☐ Never

6. Which AI tools do you use most frequently? *(Select all that apply)*

☐ ChatGPT

☐ Google Gemini

☐ Grammarly

☐ DeepL Translator

☐ QuillBot

☐ AI writing assistants

☐ AI dictionary / vocabulary apps

☐ Others (please specify): _____

7. For what purposes do you mainly use AI tools in your studies? *(Select all that apply)*

☐ Translation

☐ Writing essays / assignments

☐ Grammar and vocabulary correction

☐ Generating ideas / brainstorming

☐ Summarizing texts

☐ Preparing presentations

☐ Studying or revising lessons

☐ Reading comprehension

☐ Other: _____

8. Do you use AI tools regularly as part of your learning routine? *(Yes/No)*

☐ Yes

☐ No

If yes, how do you integrate them into your study routine?

If no, why not?

Section 3: Perceived Impact on Learning Habits

9. How do AI tools affect your understanding of lessons? *(Short answer)*

10. Do AI tools help you understand lessons more easily? *(Yes/No)*

☐ Yes

☐ No

Please justify your answer:

11. In what ways do AI tools influence your motivation to study?

12. Have AI tools improved the quality of your English writing? *(Yes/No)*

☐ Yes

☐ No

If yes, how? If no, why not?

13. What learning tasks do AI tools help you complete faster?

14. Do AI tools help you learn new vocabulary and grammar structures? *(Yes/No)*

☐ Yes

☐ No

Please explain:

15. To what extent do you feel dependent on AI tools when doing assignments? *(Multiple choice)*

☐ Very dependent

☐ Moderately dependent
☐ Slightly dependent
☐ Not dependent

16. Do you think AI reduces your critical thinking when studying? *(Yes/No)*
☐ Yes
☐ No

Please justify your opinion:

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17. How do AI tools influence your ability to study independently?

Section 4: Challenges and Limitations

18. What challenges do you face when using AI tools? *(Select all that apply)*
☐ Difficulty evaluating accuracy
☐ Fear of plagiarism
☐ Overdependence
☐ Incorrect information
☐ Lack of internet access
☐ Ethical concerns
☐ No major challenges
☐ Other: _____

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19. Do AI tools sometimes confuse you because the answers are unclear or complex? *(Yes/No)*
☐ Yes
☐ No

If yes, in what situations?

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20. Do you think teachers should guide students on how to use AI tools appropriately? *(Yes/No)*

☐ Yes

☐ No

Why?

Section 5: Students' Attitudes and Perceptions

21. How useful do you consider AI tools for EFL learning? *(Multiple choice)*

☐ Very useful

☐ Somewhat useful

☐ Neutral

☐ Not very useful

☐ Not useful at all

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22. Do you think AI tools should be integrated into university learning? *(Yes/No)*

☐ Yes

☐ No

Please justify your answer:

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23. What role do you think AI will play in the future of education?

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24. What suggestions would you give for improving the use of AI in learning?

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25. Any additional comments about your experience with AI tools?

Appendix B

Teacher Interview

Dear Teachers,

This interview is designed for a Master's level research study that aims to investigate **the impact of Artificial Intelligence (AI) tools on students' learning habits**, particularly in the context of English as a Foreign Language (EFL) learning.

Your responses will help provide valuable insights into how AI influences students' study practices, motivation, autonomy, and academic performance. All responses will remain confidential and will be used strictly for academic purposes.

Thank you for your cooperation.

Section One: Background Information

1. How long have you been teaching English as a Foreign Language (EFL) at the university level?

• Less than 1 year

• 1–3 years

• 4–6 years

• More than 6 years

2. What is the general English proficiency level of your students?

• Beginner

• Elementary

• Intermediate

• Upper-intermediate

• Advanced

3. How familiar are you with AI tools used in education (e.g., ChatGPT, Grammarly, AI translators)?

• Very familiar

• Somewhat familiar

• Slightly familiar

• Not familiar

4. Do your students use AI tools for academic purposes?

• Yes, frequently

• Sometimes

• Rarely

• Never

5. If yes, which AI tools are most commonly used by your students?

• ChatGPT

• Grammarly

• AI translators

• AI writing assistants

• Others (please specify): _____

Section Two: Impact of AI on Students' Learning Habits

1. What is your overall perception of AI tools in students' learning?

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2. How have AI tools changed students' study habits?

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3. Do you think AI tools help students understand lessons more effectively?

• Yes

• No

Please explain:

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4. In what ways do AI tools influence students' motivation to learn?

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5. Do AI tools improve students' academic performance (e.g., writing quality, task completion)?

• Yes

• No

Why?

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6. How do AI tools affect students' learning autonomy (self-learning ability)?

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7. Do you think students have become dependent on AI tools?

• Yes

• No

Please justify your answer:

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8. In your opinion, do AI tools reduce students' critical thinking skills?

• Yes

• No

• Not sure

Please explain:

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Section Three: Challenges and Limitations

1. What challenges do students face when using AI tools in learning?

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2. Do you have concerns about plagiarism or academic dishonesty related to AI use?

• Yes

• No

Please explain:

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3. What difficulties do teachers face when dealing with students' use of AI?

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Section Four: Suggestions and Future Perspectives

1. What strategies can teachers use to manage AI use effectively in classrooms?

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2. What recommendations would you give students for using AI responsibly in learning?

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3. In your opinion, what role will AI play in the future of education?

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Summary

This extended essay explores the dual impact of Artificial Intelligence (AI) tools on EFL students' academic performance and creativity in Algerian higher education. The study investigates how students and teachers perceive the use of AI in learning, particularly at Ain Temouchent University Using questionnaires and teacher interviews, the research reveals that AI tools help students save time, improve language skills, access information quickly, and complete academic tasks more efficiently. However, the findings also show that excessive dependence on AI may reduce students' creativity, critical thinking, and personal effort. The study concludes that AI should be used as a supportive educational tool under proper guidance and ethical regulations in order to maintain a balance between technological assistance and independent learning.

Résumé

Ce mémoire de recherche examine le double impact des outils d'intelligence artificielle (IA) sur les performances académiques et la créativité des étudiants EFL dans l'enseignement supérieur algérien. L'étude analyse les perceptions des étudiants et des enseignants concernant l'utilisation de l'IA dans l'apprentissage, notamment à Université d'Ain Temouchent. À travers des questionnaires et des entretiens avec des enseignants, les résultats montrent que les outils d'IA aident les étudiants à gagner du temps, améliorer leurs compétences linguistiques, accéder rapidement aux informations et réaliser leurs tâches académiques plus efficacement. Cependant, l'étude révèle également qu'une dépendance excessive à l'IA peut réduire la créativité, la pensée critique et l'effort personnel des étudiants. Cette recherche conclut que l'IA doit être utilisée comme un outil pédagogique complémentaire, encadré par des règles éthiques et une orientation appropriée afin de préserver l'équilibre entre l'assistance technologique et l'apprentissage autonome.

الملخص

تتناول هذه المذكرة البحثية التأثير المزدوج لأدوات الذكاء الاصطناعي على الأداء الأكاديمي والإبداع لدى طلبة اللغة الإنجليزية كلغة أجنبية في التعليم العالي الجزائري. وتهدف الدراسة إلى معرفة آراء الطلبة والأساتذة حول ومن خلال الاستبيانات والمقابلات مع الأساتذة، في استخدام الذكاء الاصطناعي في عملية التعلم، خاصة في جامعة عين تموشنت حيث أظهرت النتائج أن أدوات الذكاء الاصطناعي تساعد الطلبة على توفير الوقت، وتحسين المهارات اللغوية، والوصول السريع إلى المعلومات، وإنجاز المهام الأكاديمية بفعالية أكبر. ومع ذلك، بينت الدراسة أن الاعتماد المفرط على هذه الأدوات قد يؤثر سلباً على الإبداع والتفكير النقدي والمجهود الشخصي للطلبة. وتخلص الدراسة إلى ضرورة استخدام الذكاء الاصطناعي كأداة تعليمية مساعدة ضمن ضوابط أخلاقية وتوجيه تربوي مناسب للحفاظ على التوازن بين المساعدة التكنولوجية والتعلم المستقل.