

PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA
MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH
Abdelhafid Boussouf University Centre - Mila



*Institute of Letters and Languages
Department of Foreign Languages
Branch: English*

The Effectiveness of Using Artificial Intelligence as a Tool to Promote EFL Learners' Autonomous Learning

A Case Study of Master 1 and Master 2 EFL Students in the Department of Foreign Languages at
Abdelhafid Boussouf University Centre of Mila

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

Presented by:

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Academic Year:2024/2025

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Dedication

In the Name of Allah, the Most Merciful, the Most Gracious. All praise is to Allah and prayers and peace be upon Mohamed, His servant and messenger.

We have the honour to dedicate this research paper to
our dear parents for their unconditional love, support, and prayers
our beloved siblings who have never left our sides, surrounding us with love and care
our dear friends who have constantly pushed us forward, encouraging us to keep up chasing our goals

Hanene and Manel

Acknowledgement

We would like to express our sincere thanks and appreciations to all those who helped us make this humble piece of work possible.

The first and foremost thanks go to Almighty Allah for giving us strength, determination and patience to achieve this work

We would like to express our deepest gratitude to our supervisor Dr. Fouad BOULKROUN for devoting his valuable time to supervise us. We are grateful for his serious guidance, constructive criticism and valuable pieces of advice.

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Abstract

The unprecedented technological advancements in the field of Artificial Intelligence have led to its integration into various sectors including language learning. The role of Artificial Intelligence tools in language education and, particularly, in enhancing EFL learners' autonomy is still vague. Therefore, this research aims to investigate the effectiveness of AI tools in fostering autonomous language learning. The current research seeks to answer the following questions: (1) What are the specific features of AI tools that promote autonomous language learning? (2) What are the main advantages and challenges of using AI tools to enhance EFL learners' autonomy? (3) How can learners use AI tools effectively, taking into account its potential shortcomings like dependency? The data is collected through a questionnaire that was administered online to 52 Master 1 and Master 2 students of didactics of foreign languages at Mila University Centre, and an interview which was conducted with 5 teachers. The results of the study show that the majority of participants believe that using AI tools enhances their autonomous learning by increasing their confidence and reducing their dependency on teachers. The specific features through which AI tools boost learner autonomy are constant availability, self-paced learning and immediate feedback. The most common challenges EFL learners face when using AI tools to increase their autonomy are lack of reliable resources, difficulty in choosing the right AI tools, lack of guidance on how to effectively use them and over-reliance. Besides, most teachers believe that AI tools contribute to enhancing EFL learners' autonomy, but they expressed the necessity of guiding students to use AI tools moderately to avoid over-reliance on them.

Key Words: Artificial Intelligence, AI Advantages and Challenges, Language Learning, AI tools, Learner Autonomy.

List of Acronyms and Symbols

AES: Automated Essay Scoring

AI: Artificial Intelligence

AL: Autonomous Learning

CRAPEL : Centre de Recherches et d'Applications en Langues

EFL: English as a Foreign Language

ELSA: English Language Speech Assistant

ESL: English as a Second Language

NLP: natural language processing

Q: Question

%: Percent

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General Introduction

1. Background of the Study

With the aim of enhancing the teaching-learning process outcomes, several teaching approaches emphasise the importance of developing autonomy in learning. As a result, autonomous learning (AL) has become a point of interest for most education specialists for they believe that a learner's ability to take charge of his own learning is a key factor to achieve success. Taking charge of one's learning means being responsible for all the decisions concerning the aspects of learning. This can include determining the objectives of learning, defining the contents and progressions, selecting the methods and the techniques to be used, monitoring the procedure of acquisition and evaluating what has been acquired. An autonomous learner is, therefore, a reflective learner who is actively involved in reflective learning. Autonomous learners take responsibility for their learning not only at the level of learning management, but also in a cognitive sense. This means they are willing to make a conscious effort to understand what, why and how they are learning.

As technology continues to advance, many fields have been noticeably impacted as a result, and education is not an exception. One of the well-known, spread notions and aspects of technological advancement that has revolutionised the teaching-learning process is Artificial Intelligence (AI). The term is traced back to John McCarthy's conference in 1956, and it has recently gained a significant concern. In fact, AI refers to computer systems that are capable of performing complex tasks that, historically, only a human could do, such as reasoning, making decisions, or solving problems. Therefore, due to its remarkable implementation in the learning process, it is crucial to highlight the essential skills educators must acquire to navigate the transformative effects of AI in the classroom, emphasising its potential to reshape traditional teaching methods across various subjects including English as a Foreign Language (EFL).

The growing interest in AI and its application in EFL classrooms prompts the need to explore its effectiveness in enhancing learner autonomy. While various studies have highlighted the positive impacts of AI in language learning like allowing the learners to study at their own pace, access resources and receive instant guidance, there is still a lack of empirical research on how AI tools can be used to promote autonomy among EFL learners. Besides, so many ambiguities remain with regard to students' ability to develop self-regulation skills, critical thinking and intrinsic motivation without human intervention. This study, therefore, aims to explore the effectiveness of using AI as a tool to enhance EFL learners' autonomy and provide insights into the potential of AI in transforming the way language learners interact with the learning process.

2. Statement of the Problem

AL is developed by learners in a continuous process and as a result of an ultimate goal of the learning process. Hence, it is worth mentioning that, in addition to learners' significant contribution, teachers' guidance and peer collaboration are crucial factors for the development of learners' autonomy. If the truth be told, though AI-powered tools have increasingly made advances in developing AL, their misuse and limitations are not to be denied. For this, to demonstrate the effectiveness of AI in fostering autonomy in learning, many research works have been conducted, yet only few have shed light on the AI features responsible for boosting learner autonomy and the way learners should manage its utilisation to be autonomous rather than just overly rely on it. Consequently, this study seeks to examine the effectiveness of AI in promoting AL in the context of EFL, focusing on how AI should be processed with a rational mindset.

3. Aims of the Study

The present study aims to investigate the effectiveness of AI in promoting EFL learners' AL. Specifically, it examines how AI-driven tools can support EFL learners in taking control of their learning process. Besides, it seeks to put a finger on the benefits and challenges of using AI as a tool to promote autonomy. This study, also, seeks to propose some strategies for optimising the use of AI tools, maximising their benefits while minimising their potential drawbacks like over-reliance on them in order to ensure learners' control over their learning journey.

4. Research Questions

Three questions serve as the foundation for this study; they are as follows:

- 1- What are the specific features of AI tools that make AL possible?
- 2- What are the key challenges and benefits of using AI tools in promoting AL in EFL classrooms?
- 3- How can learners be more aware when using AI, taking into account its drawback of dependency?

5. Research Methodology

This research investigates the effectiveness of using AI in promoting AL among both Master 1 and Master 2 students engaged in studying didactics of foreign languages at the Department of Foreign

Languages at Mila University Centre. A mixed-methods, quantitative and qualitative, research design has been adopted to conduct this study and a survey method was used to collect data. On the one hand, the participating students are asked to respond to a questionnaire that consists of 17 multiple-choice and open-ended questions to report on their thoughts, assumptions, perceptions, and decisions with regard to the use of AI to promote their autonomy in learning. On the other hand, teachers are given an interview to share their thoughts on students' utilisation of AI tools and how this relates to their autonomy. In order to analyse the gathered data and answer our research questions, we used a descriptive analytical method as we deemed it appropriate.

6. Structure of the Dissertation

This research is divided into two chapters: the first comprises the theoretical part, whereas the second chapter is allocated to the practical part. The two variables of the current study are addressed in chapter one which is divided into two sections. The first section explores the concept and history of autonomy, its importance, and associated theories. Additionally, it covers the traits of autonomous learners and the strategies that may help in promoting learner autonomy. The second section deals with AI and its use in the field of foreign language learning. The section defines AI, traces its development, and identifies the most prominent AI-driven tools. The section also examines the benefits of AI in language learning and concludes by explaining its role in boosting learner autonomy. The second chapter is dedicated to the field investigation; it includes the students' questionnaire and the teachers' interview, their description, the analysis of the collected data, and the discussion of the main findings.

Chapter One: Learner Autonomy and the Use of Artificial Intelligence

Introduction

In recent years, developments in educational approaches, particularly the shift from a teacher-centred approach to a learner-centred approach has resulted in significant changes in terms of the objectives of education and the skills that students need to develop. In traditional teaching methods, like the teacher-centred approaches, the teacher is regarded as the authority figure who is responsible for imparting knowledge while students are viewed as passive recipients of information. Learner-centred approaches, on the other hand, focus on students and view them as active participants in the learning process. This change has fostered the idea of promoting learners' independence and empowering them to continue their learning journey beyond the classroom, rendering autonomy a central goal in modern education (Benson, 2001). Boudouaia et al. (2022) argued that many contemporary education systems have increasingly focused on learner autonomy and recognise it as an indispensable element of implementing learner-centred strategies which are essential to foster personal growth for students. In the field of language teaching, learner autonomy has become a focus of interest, and language specialists are more than ever willing to enhance this skill in learners. Baume (1992) stated that one of the most important goals in higher education is to help students, particularly those studying foreign languages, to engage in AL and take responsibility for their academic development.

Today, the rise of the digital age and the emergence of AI has fuelled the urge for enhancing EFL learners' autonomy even more. This is mainly due to the fact that AI has the potential of making learning more equal, effective, and pleasurable for all students (Sotomayor Cantos et al., 2023); EFL students can now benefit from immersive and engaging learning experiences, personalised instruction, and instant feedback. This chapter aims to provide a comprehensive understanding of both learner autonomy and AI. It is divided into two main sections. The first section which is entitled Learner Autonomy starts by examining the different definitions of learner autonomy put forth by prominent scholars and exploring its historical development. Then, it highlights the importance of learner autonomy and sheds light on its theories. The chapter will also discuss the characteristics of autonomous learners. Finally, it proposes some strategies to encourage AL. The second section, which is entitled the Use of Artificial Intelligence in EFL context, delves into the concept of AI by examining its definition, historical evolution, types of AI, and its integration into education. Lastly, the section provides a groundwork for understanding how AI applications might be used to enhance the autonomy of EFL learners.

1.1. Learner Autonomy

1.1.1. Definition of Learner Autonomy

Lately, the concept of learner autonomy has become a focal point in educational research and has been widely discussed due to its complexity and multifacetedness. Numerous scholars have contributed to the understanding of this concept and offered various definitions. The most widely cited definition is the one developed by Holec (1981, p.3) who defined it as “the ability to take charge of one’s own learning”. This entails assuming responsibility for all the aspects of learning, including what, when, and how to learn, taking into account personal needs, interests, and abilities. Little (1991) argued that autonomy can be understood as the ability to learn without the assistance of teachers. Also, he stipulates that since teachers cannot permanently accompany students in their learning process, developing autonomy is essential to guarantee lifelong learning and success, and emphasises that psychological skills such as critical reflection, decision-making, and independent actions are embedded in AL. Little (2000) combined Holec’s definition, which focuses on learners’ ability to take responsibility for the purpose, content, and methods of their learning, with his own idea that refers to autonomy as the ability to reflect on one’s own learning, detach from external influences, make decisions and act independently. Thus, according to Little, autonomy is about learners’ ability to gain control over both the psychological and practical aspects of their learning; for example, learners must think critically about their learning strategies, understand their progress and make adjustments where necessary.

According to Benson (1997), autonomy in language learning can be understood in three fundamental ways:

1. Autonomy as the act of learning on one’s own and the technical ability to do so.
2. Autonomy as the internal psychological capacity to self-direct one’s own learning.
3. Autonomy as control over the content and processes of one’s own learning.

The technical ability involves all the skills as well as the cognitive, metacognitive, and social strategies; one could think of this skill as a methodical aspect of learning. A psychological capacity focuses on more general attitudes and cognitive skills that empower students to assume responsibility for their own education. Control over the curriculum and learning procedures is related to a political viewpoint that prioritises student empowerment (Palfreyman, 2003).

Dam (1990) defines AL as the capacity to take responsibility for one's own learning both independently and in collaboration with others. Based on this definition, AL is often confused with independent learning, yet, in fact, they are totally different according to Najeeb (2013). Independent learning refers to learning without the help of a teacher or peers, often through using technology such as language learning applications or computer programmes. In contrast, AL, emphasises collaboration, where learners work with their teachers and peers (Kumaravadivelu, 2003). Collaboration not only enables learners to manage their learning with minimal teacher support but also leads them to reflect on the gained knowledge and participate in peer and self-assessment. Therefore AL blends individual work with social interaction, making it a more dynamic and interactive process than independent learning.

Some scholars tackle learner autonomy in relation to motivation. For example, Gardner (1985) defined motivation as a combination of effort plus desire to achieve, and favourable attitudes towards language acquisition, suggesting that autonomy plays a critical role in boosting motivation. According to Gardner, when students take charge of their own learning, their intrinsic motivation is more likely to increase as they are given the chance to learn in a way that aligns with their personal interests and goals. Similarly, Dickinson (1995) claimed that autonomy and motivation are closely related, asserting that the more autonomous a learner is, the more motivated he is.

By synthesising the previous definitions, learner autonomy would be defined as learners' ability to take charge of their own learning. This includes the psychological readiness to learn as well as the capability to make well-informed decisions about what, how, and when to learn. This understanding is based on Holec's (1981) definition which has expanded to encompass other elements like independence from the teacher (Little, 1991), self-direction, reflective thinking, and the capacity to control one's own learning processes (Little, 2000; Benson, 1997) as well as the ability to learn both individually and collaboratively (Dam, 1990; Kumaravadivelu, 2003). Furthermore, learners who feel independent and responsible are more likely to be interested and devoted, demonstrating the close link between autonomy and motivation (Gardner, 1985; Dickinson, 1995).

1.1.2. History of Learner Autonomy

Etymologically, the word "autonomy" is derived from the Greek words "auto" and "nomos", which mean "self" and "law", respectively. Therefore, the word autonomy in its earliest usage used to mean self-rule or self-governance, which refers to the Greek city-states that were able to govern themselves without external interference (Swaine, 2016). The concept has evolved significantly over time and

gradually got integrated into other fields, including education. The idea of AL can be traced back to Greek philosophers like Socrates, who labelled himself a lover of knowledge (philosopher) and believed that seeking knowledge must be the ultimate goal of life (Demirci, 2012). For Socrates, the only thing truly worth studying in life is the soul, which represents the essence of a person, and to know oneself is to recognise this true essence. However, every person must do this task independently, understand what is right and make judgements based on that knowledge because a complete human must be autonomous and take full control of his life. According to Socrates, questioning is the best method to gain knowledge; therefore, he pioneered the Socratic Method, which is a teaching and assessment technique that relies on student-led questions and discussions (Paul & Elder, 2008). Socrates is renowned for his support for encouraging critical thinking and self-directed learning because, according to him, knowledge cannot be simply transferred passively to learners but rather must be self-discovered. Nottingham (2022) cited him arguing that: “[n]o one can teach if by teaching we mean the transmission of knowledge, in any mechanical fashion, from one person to another. The most that can be done is that one person who is more knowledgeable than another can, by asking a series of questions, stimulate the other to think and so cause him to learn for himself” (p.104).

During the Middle Ages, education was controlled by religious institutions and relied mainly on memorisation and passive learning; however, there was a renewed interest in AL throughout the Enlightenment. John Locke asserts that some people are naturally endowed with strong bodies and minds which enable them to reach excellence and achieve remarkable things without much support from others (Lock & Milton, 1830). In other words, Locke acknowledged that some individuals require less external guidance or intervention to excel due to their inborn traits and talents. While this passage does not directly discuss learner autonomy in the way subsequent scholars do, it implies that certain individuals are capable of self-directed learning and development because of their innate abilities. Additionally, the French philosopher Jean-Jacques Rousseau suggests that children should learn through their own experiences, not through imposed instruction. In his famous book “Emile” (1762), he asserted: “Let him not be taught science; let him discover it” (Rousseau, 1889, p.124).

According to Smith (2015), the concept of autonomy in the field of language learning can be traced to the Council of Europe’s Modern Language Project in 1971. One of the results of this project was the creation of the Centre de Recherches et d’Applications en Langues (CRAPEL). Yves Chalon, the founder of CRAPEL, is regarded as the pioneer of autonomy in language learning; following his death, Henri Holec took over the leadership of CRAPEL and continues to be a key figure in the field of autonomy (Holec, 1981).

In the 1970s and 1980s, autonomy struggled with its identity because it was closely linked to “individualisation” (Smith, 2015), which means that learners were expected to work independently through materials prepared by the teacher, which made autonomy seem to isolate and detach learners from their peers. However, things began to change when teachers started experimenting with autonomy in real classroom situations. Such teachers became influenced by new ideas about classrooms as places for interaction and communication, not just individual work, and that autonomy could grow by changing how power and control were distributed between the teacher and students. As a result of these changes, autonomy evolved to emphasise “interdependence”, meaning that learning became seen as a collaborative process, where both teachers and students have to work together to shape the learning experience. Today, autonomy focuses on the learner as the main driver of his learning, which has led to reconsidering the teacher’s role and changing it from being the sole authority to a facilitator or guide in the process.

When talking about the historical background of the concept of autonomy, it is necessary to identify the various events and circumstances that led to its emergence and spread in modern education. Gremmo and Riley (1995) explored the factors and circumstances that led to the development of autonomy in both education and language learning and compiled a list of the most important reasons behind its rise. They are as follows:

- The development of adult education
- The increased demands for learning foreign languages
- The technological advancements
- The growing interest and respect for minority rights
- New perspectives on language teaching and learning in response to outdated learning theories like behaviourism
- The significant increase in the number of schools and universities around the world and the wider access to educational materials
- People’s views of language learning

1.1.3. The Importance of Autonomous Language Learning

The significance of autonomy has been widely examined not only within educational contexts but also across various other domains. In the field of education, autonomy provides learners with numerous advantages. It shifts the emphasis from traditional teaching methods to a more learner-centred approach, enabling individuals to tailor their learning experiences and reduce dependence on institutional structures. Furthermore, autonomy is considered an essential educational objective as it fosters a sense of responsibility and promotes lifelong learning. Dörnyei mentioned that “[a]utonomy is currently a buzzword in educational psychology” (Dörnyei, 2001, p. 102). Benson also stated that “[t]o its advocates, autonomy is a precondition for effective learning; when learners succeed in developing autonomy, they not only become better language learners but they also develop into more responsible and critical members of the communities in which they live” (Benson, 2001, p. 1).

The active support of a learner’s existing autonomy is regarded as a fundamental basis for its sustained development and long-term success. As Baume (1992) claimed, autonomy is one of the most crucial targets in higher education. Students majoring in learning foreign languages ought to be involved in AL and take responsibility for their academic progress. When implementing autonomy in their studies, students are expected to be able to connect their acquired knowledge to real-world applications. In this way, learning transforms into a way of life rather than merely a process of memorisation. Autonomous learners have a clear understanding of the objectives of their educational journey, assume full responsibility for their learning, actively engage in planning and executing learning activities, and regularly engage in critical self-assessment to enhance their progress. Learner autonomy involves self-awareness, the capacity for reflection, and a proactive approach to self-regulation and engagement in learning interactions. Therefore, it is worth mentioning that the teacher’s primary objective is to establish and maintain a learning environment that fosters student independence and the development of autonomy. When the educational setting is accessible and supportive, students are more likely to make informed decisions and seek assistance when necessary. Additionally, learners should be equipped with the skills to locate information and resources beyond the classroom, enhancing their ability to discern relevant information from irrelevant material.

Due to their developmental stage and circumstances, it is hard for some students to have an internal locus of control. In early education, control is predominantly external; however, as students progress through secondary and higher education, it gradually shifts inward, at least in theory. Consequently, the locus of control (perception of that control) transitions along a continuum from external to internal. In fact, the pace and direction of this transition are significantly shaped by the learner’s individual

characteristics and the instructional methods they experience. Adult learners, in particular, exhibit a strong preference for autonomy and internal locus of control.

In English as a Second Language (ESL) and EFL contexts, researchers and scholars emphasise the importance of autonomy from multiple perspectives, including its connection to language learning strategies, motivation, communicative language teaching, and cooperative learning. Scharle and Szabó (2000) argued that successful language acquisition is largely dependent on learners themselves adopting a responsible attitude to learning more independently and having their own way to learn.

1.1.3.1. Autonomy and Learning Strategies

Learning strategies have gained significant attention in the field of language learning due to their considerable impact on language acquisition. Oxford (2001) highlighted that the effective use of learning strategies can substantially enhance the learning process, and goes on to say “[a]ll language learning strategies are related to the features of control, goal-orientation, autonomy and self-efficacy. [...] Learning strategies help learners become more autonomous” (Oxford, 2001, pp. 166-172). Oxford (1990) also emphasised the importance of autonomy as one of the twelve key features of language learning strategies, where she refers to autonomy as “self-directed learning”. Self-direction is particularly important for language learners because they will not always have the teacher around to guide them as they use the language outside the classroom. Moreover, self-direction is essential for the active development of proficiency in a new language.

1.1.3.2. Autonomy and Motivation

Motivation is widely recognised as a key factor influencing the success of language learners in language acquisition, regardless of the various theoretical approaches to understanding it. With regard to the relevance of autonomy to motivation, some researchers consider that the latter reinforces the former. For instance, Benson (2001) considered that by taking control over their learning, learners develop motivational patterns that lead to more effective learning, whilst others believe that autonomy matures motivation (Dörnyei, 2001). Dörnyei also emphasised the important role of motivation as one of the most basic aspects of the human mind in determining success or failure in any learning situation. In addition, he notes that a number of recent reviews and discussions provide evidence that second language (L2) motivation and learner autonomy go hand in hand. Ushioda (1996, as cited in Dörnyei, 2001) stated that autonomous language learners are by definition motivated learners. Furthermore, Dörnyei asserted that motivation must be sustained and safeguarded; otherwise, it will gradually diminish. He emphasised that fostering learner autonomy is a key factor in maintaining motivation.

1.1.3.3. Autonomy and Cooperative Learning

Cooperative learning, which is currently gaining significant attention in language learning, is commonly described as a method where students work together in pairs or small groups to achieve shared goals and objectives. The teacher is also involved in this approach yet as a facilitator or aid. However, Richards (2006) affirmed that not all group work constitutes cooperative learning as the latter presents how to maximise the benefits of student-student interaction. Brown (2001) pointed out several advantages that cooperative group work brings about: it generates interactive language, offers more security and a less competitive environment, resulting in an increase in student motivation, serving more individualised instruction, and promoting learner responsibility and autonomy.

Just as motivation is closely linked to autonomy, cooperative learning also has a strong connection to it. Dörnyei and Murphey (2003) emphasised that a group-conscious teaching approach relies more on the group's own resources and actively encourages AL. They also highlighted that a key aspect of group-sensitive teaching is the delegation of power and the gradual development of learner autonomy. Similarly, Richards (2006) pointed out that with greater autonomy comes the responsibility for the learning of those within the group. He further concluded that certain cooperative learning methods promote high levels of learner autonomy by allowing students the freedom to pursue their interests and organise group activities.

1.1.3.4. Autonomy and Communicative Language Teaching

In conducting research on the connection between autonomy and communicative approaches, Nunan (2000) found that for language learners themselves, the development of autonomy is often closely associated with the development of a communicative orientation towards the target language, although he admits that there is a lack of strong empirical evidence regarding that association. As Benson (2001) pointed out, several prominent researchers in the field of communicative language teaching and learner-centred practice have incorporated the idea of autonomy into their work since communicative teaching, learner-centredness, and autonomy share a focus on the learner as the key agent in the learning process.

1.1.4. Theoretical Frameworks of Autonomous Learning

Driven by different educational theories, autonomy has become increasingly significant in modern society. The main theories are as follows.

1.1.4.1. Cognitive Learning Theories

Philosophers like Rousseau and Dewey proposed that knowledge and thinking evolve through experience. Rousseau emphasised that learners should take responsibility for their actions and gain knowledge by experiencing the outcomes, whether positive or negative. Rousseau's emphasis on the learner's responsibility for learning is a key idea of learner autonomy; therefore, Rousseau's philosophy of learning serves as one theoretical base for learner autonomy (An, 2012). Dewey's main contribution to the concept of autonomy, on the other hand, centres on the link between education and social participants, the idea of education as a means of problem-solving, and the structure of the classroom (An, 2012). In addition to Rousseau's and Dewey's ideas on experience, meaningful learning is another element in cognitive psychology. Dickinson (1995) argued that "there is convincing evidence that people who take the initiative in learning learn more things and learn better than people who sit at the feet of teachers, passively waiting to be taught [...]. They enter into learning more purposefully and with greater motivation" (p. 14). Dickinson highlighted that if learning is not perceived by a learner to be meaningful, it is less likely to be incorporated into internal schemes.

1.1.4.2. Humanistic Psychology

Humanistic psychology takes a holistic approach, viewing humans as a whole rather than as separate parts and emphasising the individual's inner world as the foundation of human development. Among the key figures who have shaped this field, Abraham Maslow and Carl Rogers are particularly influential. Maslow introduced the hierarchy of needs, a triangular model that outlines universal human needs across all cultures. Rogers' main contribution lies in redefining the teacher's role, advocating for a teacher as a facilitator (An, 2012). This concept is fundamental to classroom-based approaches to autonomy in language learning (Benson, 2001). The ideal teacher-learner relationship, according to Rogers, involves a non-judgmental, supportive role where the teacher minimises intervention, allowing learners to develop naturally and achieve self-actualisation (Benson, 2001). To put it simply, humanistic psychology believes that human beings should develop to their full potential.

The central idea of humanistic psychology is reflected in five key principles of humanistic education (An, 2012). First, learners are more motivated when they have a personal desire to learn and the freedom to choose their own learning materials. Second, education should focus on stimulating learners' interest and guiding them toward independent learning. Third, humanistic educators emphasise self-evaluation as a more meaningful assessment than grades and oppose standardised tests as these encourage pure memorisation rather than deep understanding. Fourth, emotions and

knowledge are regarded as equally important in the learning process. Finally, learning becomes more effective and meaningful when students feel safe in a supportive, non-threatening environment.

Although humanistic psychology has significantly influenced language learning and teaching, particularly in promoting learner autonomy, the effects of humanistic education remain unclear. While it emphasises non-academic aspects such as self-esteem and motivation in language learning, it lacks a clear connection between emotional satisfaction and academic achievement.

1.1.4.3. Constructivist Theories of Learning

The essence of constructivist theories of learning lies in the idea that learners should discover and process complex information on their own in order to internalise it and integrate it into their existing knowledge structure (An, 2012). Little's principle that "all genuinely successful learning is in the end autonomous" (Little, 1994, p. 431) reflected the key idea that autonomy in language learning has been influenced by constructivism. One of the early influences on AL is Kelly's personal construct theory, a belief that individual learners bring their own systems of constructs to bear on learning tasks. In addition to personal construct theory, Barnes (1976) distinguished between "school knowledge" and "action knowledge". For him, school knowledge is presented in an abstract form and is someone else's knowledge, so it is easily forgotten. Action knowledge, however, is closely related to the learner's view of the world; it is the learners' own knowledge, knowledge which cannot be transmitted from teachers to learners unless active involvement in learning is exercised

1.1.4.4. Self-determination Theory

Self-determination theory assumes satisfaction of basic psychological needs as fundamental for students' intrinsic motivation (Ryan & Deci, 2000). These needs are fostered by teachers' autonomy-supportive behaviours by identifying, nurturing, and developing students' inner motivational resources during instruction (Reeve, 2009). Autonomy-supportive teachers acknowledge negative affect, provide choice, and provide opportunity for self-initiative and self-paced work, while being warm and caring (Reeve & Jang, 2006). In contrast, controlling teachers pressure students to behave in particular ways (Ryan & Deci, 1985). Controlling teachers use controlling statements, take their own perspective and provide students with little choice (Reeve & Jang, 2006).

1.1.5. Characteristics of Autonomous Learners

Learner autonomy plays a crucial role in foreign language acquisition because it gives students the opportunity to take charge of their own learning and develop skills beyond the classroom. Identifying the key characteristics of autonomous learners enables educators to implement effective strategies that foster independence and lifelong learning habits. Scholars have suggested different characteristics of autonomous learners. Dickinson (1993) asserted that autonomous learners can recognise what has been taught, set their own learning objectives, and actively choose effective learning strategies. They also monitor their progress and assess their learning. This view is shared by Holec (1981), who stipulated that autonomous learners take charge of their own education by setting goals, recognising their needs, selecting appropriate resources and methods, monitoring their progress, and evaluating their learning outcomes.

Gremmo and Riley (1995) used the term “self-directed learners” to describe learners who take control of the previously mentioned aspects of the learning process, including setting goals, selecting appropriate resources, and choosing effective strategies. For him, self-direction refers to learners’ ability to explore all the learning conditions, circumstances and factors that help them guide their own learning.

Cotterall (1995) stipulated that “autonomous learners are likely to be individuals who have overcome the obstacles which educational background, cultural norms and prior experience may have put in their way” (p. 200). Cotterall’s idea emphasises that autonomous learners are those who can successfully deal with barriers that could hinder their ability to take control of their own learning. These barriers may stem from their educational background, such as traditional teaching methods that promote dependence on teachers, cultural norms that discourage independent decision-making, or past experiences that shape their approach to learning.

Omaggio (1978, as cited in Thanasoulas, 2000) described autonomous EFL learners as follows:

- They are aware of their learning styles and preferences, and know how to use strategies that align with them. Also, they can understand the nature of the tasks and adjust their learning strategies accordingly.
- Autonomous learners are active participants in the learning process and do not passively receive information; for example, they set their own learning goals and constantly look for opportunities to use the target language. Besides, they are sensitive to connotative and sociocultural meaning.

- Autonomous learners are willing to take risks. They perceive themselves as “linguistic toddlers” and accept the fact that making mistakes is an indispensable part of language learning. Hence, they use effective strategies to get their message across like paraphrasing, using cognates, gestures, or creating new words.

- They are good guessers; good guessers make valid deductions and employ hints skilfully. Effective guessing techniques for reading comprehension, for example, include reading around unfamiliar words and determining meaning from syntactic and contextual signals. They frequently use context, justification, or translation to glean meaning.

-Autonomous learners focus on both meaning and form. They pay attention to what is being said as well as to how it is structured. They actively identify patterns, organise rules, monitor their speech, and seek feedback to improve their language skills.

1.1.6. How to Promote Learner Autonomy in EFL Classrooms?

1.1.6.1. The Teacher’s Role

Autonomous learners are usually referred to as students who are totally independent of teachers’ guidance. However, for Little (1995), “total independence is not autonomy but autism” (p.178). He emphasised the importance of teacher-student discussion as a means by which students can infer the primary features and goals of independent learning. This suggests that, even if independence is the main objective of student autonomy, the teacher plays a vital role in promoting that autonomy by acting as a source of guidance for students who fail to use their skills effectively during the learning process. Nunan (2003) agreed with this perspective and stresses the importance of student-teacher cooperation in fostering EFL learners’ autonomy. According to him, teachers have to provide their students with strategies to develop their skills, help them in identifying their strengths and weaknesses, and select suitable content.

Tuyen et al. (2024) claimed that teachers contribute to developing learners’ autonomy through performing four main roles: facilitator, counsellor, resource provider and manager. First, teachers act as facilitators by providing a positive learning environment, assisting students in formulating their learning objectives, selecting resources and evaluating their progress, all of which are thought to be crucial for fostering students’ autonomy. Second, teachers who act as counsellors may offer guidance, assist students in being more self-aware, help them get past learning challenges, and recognise their psychological impediments. Third, many students say that teachers can serve as resource providers by giving them access to relevant materials, websites, and other educational tools. Finally, when acting

as managers, teachers are expected to plan a variety of effective games and activities that suit the needs and interests of their students in order to assist them in developing autonomy in their English language learning.

A successful EFL teacher, also, acts as a motivator. Scharle and Szabo (2000) reminded that “you can bring the horse to the water, but you cannot make him drink” (p. 4), implying that while teachers can provide guidance and resources, the decision to learn ultimately lies within the students themselves. Therefore, teachers should focus on raising learners’ motivation and making them eager to learn; a motivated learner is more likely to seek knowledge beyond the classroom, set goals, use language independently, and persist despite challenges.

Çakici (2015) claimed that in addition to teaching language, the teacher’s role also includes teaching learning. Training in learning strategies is necessary for language learners to reach their full potential and develop their autonomy. Learning strategies are specific behaviours and actions taken by language learners to make learning easier, faster, more enjoyable, and most importantly more self-directed.

1.1.6.2. The Learners’ Role

EFL learners can contribute in enhancing their autonomy in many ways:

1.1.6.2.1. Taking Responsibility for One’s own Learning

According to Scharle and Szabo (2000), learners have to develop their sense of responsibility in order to foster their autonomy. In the field of language teaching, teachers can provide the required circumstances and information; however, true learning can only occur when students are willing to participate and take an active role in the learning process. They have to acknowledge that they are as much responsible for their learning as their teachers are; in other words they are both accountable for the results. However, assuming responsibility for one’s learning is challenging because “[p]eople do not normally wake up on a fine day and find that they have become responsible overnight. More likely, they go through a slow, gradual process as they are approaching adulthood” (Scharle & Szabo, 2000, p. 9). Therefore, learners have to develop responsibility through a series of stages: raising awareness, changing attitudes and transferring roles (Scharle & Szabo, 2000).

1.1.6.2.2. Journaling and Writing Diaries

Journaling is the act of documenting one's daily experiences and personal thoughts. One advantage of journaling is that it helps students to organise, monitor, and assess their learning (Hadi, 2015). Journaling fosters autonomy because it provides an opportunity for learners to reflect on both what they are learning and how they are learning it, identify any problems they encounter, and suggest solutions.

1.1.6.2.3. Collaborative Learning

According to Feri and Erlinda (2014), students in collaborative learning work in groups of two or more and search for solutions or meanings, or create a product, all of which is achieved through meaningful interactions between the members of the group. Yousfi and Laala (2023) stated that collaborative learning empowers learners to take control of their own learning for many reasons:

-Students who work with their peers become more reliant on both their own and their peers' abilities; they also contribute to improving their learning outcomes and gaining a sense of belonging and unity with the group. This invokes Vygotsky's idea that learning should be a social activity and "a learner can realise his potential interactively through the guidance of supportive other persons such as parents, teachers, peers" (Wenden, 1998, p. 107).

-Some students may not comprehend the information that their teachers present, so their partners may occasionally clarify it for them.

-Collaborative activities are crucial for fostering students' independence because collaborating to tackle a specific challenge teaches students how to think and make choices.

1.1.6.2.4. Using Metacognitive Strategies

Learner autonomy and the application of metacognitive strategies were found to be positively correlated across various EFL learners (Vellanki et al., 2024). Metacognitive strategies, which refer to the techniques used by learners to develop awareness about their thinking processes, encourage students to engage in effective planning, goal setting, and employing available resources. In addition, utilising metacognitive strategies has a significant role in aiding students in monitoring their progress and performance through summarisation, note-taking, self-questioning, etc.

1.1.6.2.5. Using Technology

The digital generation requires a modern language learning experience that allows them to feel at ease, enjoy the learning process, and take responsibility for their learning; thus, integrating technology in language learning has become a necessity. The advancement of technology provides an unprecedented opportunity to enhance EFL learners' autonomy. Utilising technology can foster EFL learners' autonomy in a variety of ways (Mote, 2023). First, technology provides students with diverse resources and materials that enhance their language skills and give them greater control over their learning. Second, online language learning applications like Duolingo and Rosetta Stone offer engaging and interactive lessons that cater to the unique learning styles of their users. Additionally, thanks to online language exchange platforms like italki, students can communicate with their teachers and peers from anywhere or even practise the language with native speakers. Finally, technology promotes autonomy by making self-evaluation easier with digital tools like automated feedback and online quizzes.

1.2. Use of Artificial Intelligence in EFL Context

1.2.1. Definition of Artificial Intelligence

AI represents the culmination of advancements in fields like computer related technologies, machinery and innovations in information communication technology. It has become one of the most prevalent technologies worldwide by being increasingly integrated in various sectors such as computer science, statistics, psychology, etc. Even though AI stands as the most notable technological advancement of the last decade and possibly the one yet to come, there is no consensus among scholars on a clear definition.

Most cited definitions view AI as an imitation of human intelligence. For example, Craig et al. (2024) described AI as the simulation of human intelligence processes by machines like computers. Specifically, some definitions focus on computers' capability to perform tasks that normally require human intelligence, such as "computers which perform cognitive tasks, usually associated with human minds, particularly learning and problem-solving" (Baker & smith, 2019, p.10). Other definitions focus on computers' ability to perform human-like interactions: "[i]nteract with the world through capabilities (for example, visual perception and speech recognition) and intelligent behaviours (for

example, assessing the available information and then taking the most sensible action to achieve a stated goal) that we would think of as essentially human” (Luckin et al., 2016; p. 14).

Nilsson(1980) stated that “AI has embraced the larger scientific goal of constructing an information processing theory of intelligence that could guide the design of intelligent machines as well as explicate intelligent behaviour as it occurs in humans and other animals” (p.2). This implies that there are two types of AI: one aims at designing intelligent artefacts and another aims at explicating natural intelligence using computational means. McCarthy (2007) offered a similar, but a more comprehensive definition that recognises AI as a scientific discipline consisting of the two previous types: “it is the science and engineering of making intelligent machines, especially intelligent computer programmes. It is related to the similar task of using computers to understand human intelligence” (p, 2), and he adds: “but AI does not have to confine itself to methods which are biologically observable” (p.2). This suggests that AI does not have to copy human intelligence to be smart and that it can rely on other ways.

Russell and Norvig (2010) further explained McCarthy’s idea by asserting that the concept of AI can be classified into two-by-two matrix: thinking versus acting and (thinking or acting) humanly versus rationally. In other words, an AI system may think or act, and it does so in a human-like way or in a logical and correct way. This indicates that there are four approaches to defining AI: thinking humanly, acting humanly, thinking rationally, and acting rationally. Each approach offers a different perspective on what it means for a machine to be intelligent, whether by imitating human intelligence and behaviour or by seeking an ideal and rational performance.

The European Commission’s High-Level Expert Group on Artificial Intelligence (2018) suggested that AI encompasses “[s]ystems that display intelligent behaviour by analysing their environment and taking actions, with some degree of autonomy, to achieve specific goals” (p.1). Moreover, the commission notes that AI based systems can be purely software based, acting in the virtual world (e.g. voice assistants, image analysis software, search engines, speech and face recognition systems) or they can be embedded in hardware devices (e.g. advanced robots, autonomous cars, drones or internet of things applications” (p.1).

By synthesising the previous definitions, AI would be defined as a replication of human intelligence through machines, particularly in performing tasks like learning, problem solving and interacting with the world in human like ways. AI is also recognised as a scientific discipline specialised in building intelligent systems and understanding human cognition. While most definitions focus on mimicking human intelligence, AI can pursue non-human like methods of intelligence by seeking to behave and

think in a rational and correct way. Furthermore, AI systems may take autonomous actions to achieve specific goals, and they can exist as either softwares or hardwares.

Some scholars like Sheikh et al. (2023) thought that restricting AI to imitating human intelligence is excessively limited because this ignores a large number of basic AI applications that are not true AI, let alone the fact that accepting this definition would indicate that AI does not yet exist. Thus, this view falls short of defining AI as it exists today. Besides, they claim that AI is so hard to define mainly because it is a simulation or an imitation of human intelligence, which we still do not fully comprehend. There is still no clear agreement on what human intelligence actually is even though behavioural scientists, neurologists, and psychologists have all been studying intelligence and the human brain for a long time; hence, it is impossible to pinpoint exactly how intelligence can be artificially replicated in machines.

1.2.2. Evolution of Artificial Intelligence

Once limited to science fiction, the idea of AI has become a powerful and revolutionary force reshaping the contemporary world. There are various key milestones in AI development. The most ancient references to automata, ingenious machines moving and acting on their own volition, are found in Homer's Iliad. It is unclear whether the Homeric era's depiction of such machines was based on poetic imagination or if it was an attempt to predict them and state the necessity of their existence (Cullers, 2019). Later, Leonardo Davinci produced a robotic knight, but it could only be operated through outside interference (Rosheim, 2006). The robot relied on a cable drive system built into its chest which required manual operation or connection to an external source like a waterwheel to make the robot operate.

However, the formal beginnings of AI date back to the mid-20th century (Mauney et al., 2004). Alan Turing conducted an experiment in 1950 to determine whether machines might mimic human behaviour and display intelligence. "Can machines think?" was the primary question he raised. As a result of this experiment, the imitation game – now called the Turing Test – was created, marking a turning point in the field of AI.

The term AI was first coined by John MacCarthy, in 1956, at the Dartmouth College summer conference where scholars gathered to explore the possibilities of machines simulating human intelligence; this marked the birth of AI as a formal field of study (Raj & Kos, 2023). In 1980, the first expert system was developed. Expert systems rely on rules-based logic to make decisions and perform

specific tasks like diagnosing medical conditions or playing chess. In the 1990s, AI evolved significantly with the rise of machine learning, which allowed systems to learn from data rather than follow fixed rules; as a result, rule-based AI gave way to data-driven, more intelligent, and adaptable AI (Singh, 2023).

In the 2010s, AI entered the deep learning era characterised by neural networks, which are capable of imitating how human minds work in order to extract complex patterns, recognise images, process natural language, and handle autonomous driving (Greene, 2020). The rise of machine learning and deep learning was particularly transformative in natural language processing (NLP), the subfield of AI that gives computers the ability to understand and manipulate human languages. Natural language deep learning and machine learning algorithms are crucial to the processing of tasks in NLP applications like sentiment analysis, chatbot systems, speech recognition and machine translations (Thakare et al., 2023).

Around 2014, AI entered a new era known as generative AI. As opposed to traditional AI systems, generative AI has the unique capacity to create new text, audio, art without explicit guidance (Marr, 2023). The turning point that influenced the development of generative AI was the release of the conversational chatbot ChatGpt and Dall-E in 2022, a deep learning model that can generate images from natural language prompts.

1.2.3. Types of Artificial Intelligence

According to many scientists, AI can be divided into four general categories, with functionality being the basis for this classification. The four primary categories are reactive machines, limited memory machines, theory of the mind, and self- aware AI (Khan, 2021).

1.2.3.1. Reactive Machines

Reactive Machines are the most basic and ancient type of AI systems. They stem from statistical Maths and are designed to perform specific tasks that require quick decision making. Reactive machines do not store past experiences or memories and operate solely based on present data (Kanade, 2022). The best example of a reactive machine includes chess playing programmes like Deep Blue that defeated the World champion Gary Kasparov in 1996 (Kadam, 2013). The supercomputer was able to identify the pieces on a chess board and to make predictions of all the legal options available to it and its opponents. Then, it chose the best possible next move based on the options. However,

since these machines lack memory and ignore any concept of the past, they are unable to learn from their previous actions and improve results as opposed to modern AI systems which are capable of learning.

1.2.3.2. Limited Memory Machines

Limited Memory Machines, unlike reactive machines, can recall past experiences and outcomes, allowing for better decisions and improved performance in the future. The vast majority of the applications we use on a daily basis fall within this category. They have a reference model in their memory that stores a vast quantity of training data that may be used for making decisions (Shtia, 2024). An example of a limited memory machine involves self-driving cars. For example, autonomous vehicles can use their memories to store the speeds of the nearby vehicles, their respective distances, speed limits and other pertinent details to make informed decisions on when to accelerate, brake, etc. (Kanade, 2022).

1.2.3.3. Theory of the Mind

The first two forms of AI – “limited memory” and “reactive machines” – are now in existence; on the other hand, “theory of mind” and “self-aware” AI are hypothetical forms that might be developed in the future. Therefore, the theory of the mind should be called the point of division between the machines that we currently have and the machines we will create in the future (Al-qahtani, 2019). Theory of the mind refers to AI that can comprehend human emotions and beliefs and behave in social situations the way humans do. According to Al-qahtani (2019), if ever AI systems could be fully integrated in human societies and walk among us, they will have to be able to comprehend that each of us has feelings, emotions and expectations for how we will be treated, and they must then adjust their behaviour accordingly. This is because without understanding others’ motives and expectations, collaboration is at best challenging and at worst impossible. Besides, AI can become more useful and can improve customer service and healthcare by comprehending human emotions and intentions (Kötke, 2023). For instance, AI systems that can identify when a consumer is angry or disappointed might modify its strategy to deliver better service. Similarly, more individualised and efficient treatment can be provided by AI that can comprehend a patient’s emotional condition.

1.2.3.4. Self-aware Artificial Intelligence

Self-aware AI is a hypothetical form of AI that can only be found currently in science fiction films. Self-aware AI systems are super intelligent machines which are characterised by self-awareness – the ability of an entity to recognise itself as distinct from others (Watchus, 2024). Moreover, they have the ability to understand their own emotions, beliefs and needs; however, creating such kind of AI systems is a challenging task that could take decades if not generations. Even though this kind of AI is still a distant reality, many AI doubters warn against it like Tesla and Space founder Elon Musk who called it our biggest existential threat (Landi, 2023). This is because when AI develops self-awareness, it goes into self-preservation mode and starts considering humans a potential threat, thus working to eradicate them (Bengio, 2023).

1.2.4. Benefits of Artificial Intelligence in Education

The integration of AI into the educational domain has brought about considerable benefits. The education sector derives value from AI through its provision of various tools and resources, such as translation applications, voice assistants, chatbots, and personalised tutoring programmes, which facilitate more rapid and efficient student progress, thereby enabling learners to attain their academic objectives (Pisica et al., 2023). Furthermore, the utilisation of AI-generated feedback materials has been shown to enhance students' linguistic competence (Alsadoom, 2021, as cited in Alshaikhi & Khasawneh, 2024). In addition, AI-mediated language instruction has the potential to improve language learning outcomes, motivate students, and promote student autonomy (Wei, 2023).

In fact, Learner autonomy is described using various terms, such as learner independence, self-directed, self-instruction, self-access learning, independent learning, and AL (Mahendra et al., 2023). AI-based programmes can dynamically tailor learner pace, difficulty, and relevance of learning materials to match the needs of individuals at different proficiency levels, ensuring optimal learning outcomes. This adaptive strategy not only fosters self-directed learning and independence but also reduces the loss of motivation that often comes with static, one-size-fits-all instructional designs (Solidjonov, 2024).

1.2.4.1. Artificial Intelligence and Autonomous Learning

In recent years, technology integration into education has truly altered how we learn, with AI playing a vital role in determining the future of education. The ability of AI to provide tailored

assistance and support to students through virtual tutors or chatbots has been established, underlining the possibility of AL experiences (Wilmink et al., 2020).

Integrating AI into e-learning platforms has promoted learner-generated-context-based learning, allowing students to study autonomously while being physically removed from educational institutions and influenced by the digitisation of educational processes (Gumbs et al., 2021).

Therefore, there are several techniques for applying AI in education to boost student learning autonomously. One solution is to introduce AI-powered virtual tutors or chatbots into e-learning platforms (Pratolo & Hafizhah, 2022; Sutrisno, 2022). These virtual tutors can provide tailored assistance and support to students, answering their questions and helping them navigate through the learning materials (Belda-Medina & Calvo-Ferrer, 2022). Another idea is to employ AI algorithms to assess student data and deliver individualised learning resources and activity recommendations (Sutrisno et al., 2023). AI can also be applied in building adaptable learning routes that adjust to each student's needs and progress. (Sutrisno et al., 2023)

1.2.4.2 Benefits of Artificial Intelligence in Promoting Autonomy in Foreign Language Acquisition

As declared by Wei (2023), one of the benefits of AI-mediated language instruction is promoting student autonomy. The latter has been underscored as a core principle of language learning, as explicated by Holec (1979) and further elaborated upon by Little (1991), delineating the intrinsic ability of individuals to assume control of their language learning process, tailor it to their unique motivations, preferences, and available resources. Central to learner autonomy is the deliberate selection of learning objectives, the discerning management of learning content and progression, and the discerning evaluation of learning outcomes, thereby fostering a profound sense of ownership and self-agency in the learning journey (Holec, 1979; Little, 1991).

In the context of foreign language acquisition, AI offers numerous advantages that help learners being more autonomous in their learning. Firstly, AI facilitates personalised and adaptive learning experiences. Personalised learning encompasses four fundamental elements: individual characteristics, performance, personal development, and adaptive adjustment (Chișeagă-Negrilă, 2023). These components are crucial for tailoring the educational process to suit each learner's unique needs, abilities, and progress, hence ensuring a more effective and individualised learning experience (Peng et al., 2019).

Secondly, AI contributes to increased efficiency and accessibility in language learning. Learners can engage with AI-powered foreign language resources at any time and from any location,

progressing at their own pace. Online platforms and mobile applications that integrate AI technologies offer a flexible and convenient learning environment, effectively removing traditional temporal and geographical constraints. (Chişegă-Negrilă, 2023)

Moreover, AI technologies provide intelligent and objective language assessment (Chişegă-Negrilă, 2023). AI-driven algorithms are capable of evaluating specific aspects of students' language proficiency, including speaking, writing, listening, and reading skills, and can deliver immediate feedback on areas requiring improvement. For instance, Automated Essay Scoring (AES) employs AI algorithms to assess and assign scores to student-written essays. Despite ongoing challenges, researchers are actively seeking to refine AES through the development of more advanced algorithms that can better capture linguistic nuances and improve contextual comprehension (Ramesh & Sanampudi, 2021).

In addition, AI-powered chatbots and virtual language tutors provide learners with valuable opportunities for engaging in interactive language practice. A key advantage of chatbots as language-learning tools is their continuous availability, which ensures uninterrupted practice sessions (Fryer et al., 2020). In contrast to human conversation partners, who may have restricted availability, chatbots can be accessed at any time, thus offering learners flexible and prolonged practice opportunities. This accessibility enables students to confidently refine their language skills, experiment with varied expressions, and reinforce their vocabulary and grammatical understanding (Fryer et al., 2020). The consistent, interactive nature of chatbot-assisted practice is, therefore, likely to accelerate significantly language acquisition, fostering increased confidence and fluency in an intuitive and user-friendly learning environment.

Furthermore, AI offers the capability to track learners' progress over time, providing personalised recommendations to enhance further study (Chişegă-Negrilă, 2023). By continuously monitoring performance, AI algorithms can suggest relevant learning materials and activities, thus fostering ongoing improvement in language proficiency. One of the primary objectives of educational institutions is to effectively monitor students' academic development and identify those requiring additional support. At the outset of a course, however, teachers may find it challenging to assess the individual capabilities and needs of their students (Khan et al., 2021). Through the use of AI and other tools, struggling students can be identified early, enabling educators to design tailored preventive or remedial interventions that address the specific needs of each learner (Khan et al., 2021).

Finally, AI-driven NLP facilitates have advanced speech recognition and translation services, which are pivotal in language learning. Beyond these functionalities, automatic linguistic analysis can also identify well-formed structures, providing valuable positive or negative feedback. To effectively detect and diagnose learner errors, AI models must account for the full spectrum of potential variations, including both correct and incorrect forms, within a given activity and for an individual learner (Meurers, 2021). This enables learners to benefit from real-time translation, pronunciation feedback, and enhanced language comprehension tools, all of which contribute to the refinement of their language skills.

In EFL, AI has significantly shown its impact on promoting learner autonomy. As Rukiati et al. (2023) noted, AI has revolutionised autonomous English learning (p. 33). Many AI-driven platforms utilise sophisticated algorithms to track learners' performance over time. By analysing user data, these systems can identify specific areas in need of improvement and recommend targeted learning materials that correspond to the learner's current proficiency level, leaning style, and pace.

Moreover, AI has the ability to improve the efficiency and speed of language acquisition. AI tools streamline the learning process by automating repetitive tasks. For instance, a language learner uses an AI-powered app like Duolingo or ChatGPT to practice vocabulary and grammar. Instead of manually flipping through flashcards or searching for grammar rules, the app automatically generates personalised quizzes, corrects mistakes in real-time, and adapts lessons based on the user's progress. This automation helps the learner study more efficiently and progress faster than with traditional methods (Chișeagă-Negrilă, 2023). AI tools also offer immediate feedback on various aspects of language use, including vocabulary, grammar, pronunciation, and writing. Such feedback allows learners to recognise weaknesses and make timely improvements (Rebolledo Font de la Vall & González Araya, 2023; Xie et al., 2019).

Another notable advantage is the accessibility of AI-supported learning environments. Many AI applications are available online or via mobile platforms, ensuring that learners with internet access can engage with instructional content at any time and from any location. This flexibility contrasts with the logistical and financial limitations of conventional language schools or private tutoring, as AI-based tools are often low-cost or free of charge (Dugošija, 2024).

In addition to practicality and accessibility, AI tools frequently offer engaging and motivating learning experiences. Unlike traditional classrooms, particularly those with large student groups, AI-based platforms can incorporate interactive and stimulating activities that foster learners' motivation and enthusiasm for language learning (Divekar et al., 2021; Wei, 2023). These tools enhance learners'

overall language proficiency by promoting sustained engagement through dynamic content and gamified elements.

AI technologies also promote cultural competence by exposing learners to diverse linguistic and cultural contexts. Through interactive lessons and realistic simulations, students can explore cultural norms, values, customs, and traditions from various regions, developing intercultural awareness and global perspectives (Rebolledo Font de la Vall & González Araya, 2023).

1.2.5. The Role of Artificial Intelligence in Promoting Learner Autonomy

The integration of AI into educational settings represents a transformative shift in the way learning is approached, particularly in language education (Zhang et al., 2023). Over the last decades, AI has progressed from a theoretical construct to an influential instrument that redefines teaching methodologies, instructional strategies, and student engagement (Zhang et al., 2023). The inception of AI in educational settings can be traced back to the 1960s, marked by the emergence of computer-assisted instruction, which heralded a new phase in the evolution of educational technology (Carbonell, 1970). Foundational AI applications, such as the development of Intelligent Tutoring Systems (ITS) during the 1980s, established the basis for the advanced AI-driven tools and platforms that are now integral to contemporary language learning environments (Clancey, 1986).

Adaptive language learning platforms, such as Rosetta Stone and Babbel, exemplify another critical application of AI in the domain of language education (Vesselinov & Grego, 2012). These systems employ AI technologies to continuously analyse learners' performance in real time, allowing for the dynamic adjustment of instructional content, difficulty levels, and pacing according to individual progress and preferences (Heilman et al., 2010). This adaptive methodology ensures that learners are consistently challenged at an appropriate level, thereby sustaining motivation and engagement, factors essential to effective language acquisition (El-Sabagh, 2021). Through personalised instruction, these AI-driven platforms also foster the development of AL behaviours, empowering learners to take ownership of their educational journey and set self-directed goals (Yekollu et al., 2024).

1.2.5.1. The Role of Artificial Intelligence in Promoting Autonomy in Writing

The use of AI in education and its various dimensions has become one of the issues attracting attention and debates. One domain, which even more recently has shown the importance and power of AI, is in literary and writing skills. One aspect, however, that has raised concern is the emergence of collateral technologies that assist in writing, such as grammar checkers, writing assistants, and even AI tutors, and how they will affect students' ability to write independently (Laredj & Mebarek, 2024).

AI-driven tools have been instrumental in fostering learner autonomy in the domain of writing. Research by Tseng and Warschauer (2023) and Alharbi (2023) highlighted the capacity of these tools to deliver immediate feedback on key aspects of writing such as grammar, structural organisation, and textual coherence, which enables learners to make independent revisions and improvements. The provision of timely, individualised feedback significantly reduces learners' reliance on instructor intervention, thereby promoting self-regulated learning and encouraging greater responsibility for their own academic development.

In looking at the evidence on the influence of AI tools on writing, the findings have not been conclusive. Indeed, several other authors (Lee et al., 2024; Marzuki et al., 2023; Wei et al., 2023) have demonstrated that such tools help develop students' grammar, punctuation, and writing skills. For example, students can use grammar checkers, which help monitor the changes and errors in their writing and give them feedback on the mistakes at each stage. Moreover, AI-based applications that assist in writing can provide guidance on how to rephrase a sentence, use better words, or write more coherently.

As much as the tools are likely to boost the students' writing abilities, they may also affect other aspects, such as the students' writing motivation as well as engagement. According to some researchers (Huang et al., 2023; Silitonga et al., 2023; Song & Song, 2023), the AI tools were found to be helping students motivationally and the formation of self-confidence through instant stimulation and reinforcement.

A sizable body of literature has emerged on using AI writing applications in learning English, examining the quality of writing, the degree of autonomy, and academic dishonesty tendencies (e.g. Ahmad et al., 2024; Sullivan et al., 2023; Van Wyk, 2024). Marzuki et al. (2023) investigated QuillBot and Chat-GPT as AI writing tools for EFL learners and found that content and organisation improved substantially. This study also reinforced the positive view of these tools when it comes to the enhancement of student autonomy. It seemed that AI could assist in self-learning by encouraging doing away with teachers for simple writing tasks.

1.2.5.2. The Role of Artificial Intelligence in Promoting Autonomy in Speaking

As an important skill in language acquisition, speaking is a collaborative effort to generate meaning, involving the creation, reception, and analysis of information (Burns & Joyce, 1997; Pitura, 2022). The language and its components, such as structure and interpretation, are significantly influenced by

the context in which the language is used. This context includes the participants and their roles, the communication's physical setting, and the conversation's overall purpose.

Studies such as Jeon (2022) and Hapsari and Wu (2022) have demonstrated that AI-powered chatbots contribute significantly to the development of learner autonomy by offering flexible, on-demand opportunities for conversational practice. These tools enable learners to engage in spoken language interaction at their own pace, set personalised goals, and monitor their progress independently, thereby minimising the need for continuous teacher supervision. The availability of a low-stakes, responsive environment supports the cultivation of speaking skills while fostering learners' confidence and sense of self-efficacy, key components of autonomous language learning.

Sayed et al. (2024) conducted a research on the impact of AI-powered tools, specifically ChatGPT, on EFL learners' speaking autonomy. The research indicates that AI tools have positively impacted EFL learner's autonomy by promoting self-directed learning, showing that ChatGPT helped learners to practise speaking independently without continuous teacher supervision and to access to instantaneous feedback using it to direct their learning. Second, ChatGPT offers personalised feedback depending on learners' performance, enabling them to pinpoint areas needing work, and helping them monitoring their development more successfully. In addition, the AI-driven tools increase confidence in independent practices. The research has shown that using ChatGPT for speaking practice helps learners feel more autonomous by lowering their reliance on peers and professors. They grew surer of their capacity to assess and raise their speech quality. Finally, the impact of AI tools on learners' speaking autonomy lies in enhancing resourcefulness. Using ChatGPT, for example, gave learners easily accessible tools for practice and feedback at their convenience. This accessibility motivated students to participate actively in their learning and apply the instrument wisely to improve their speaking ability.

One of the prevalent cases of adopting AI to support the enhancement of English-speaking autonomy is the ELSA Speak (English Language Speech Assistant) application. ELSA Speak is a sophisticated English pronunciation application specifically designed to assist individuals in articulating the language with precision, enabling them to communicate clearly and confidently (Taqqy, 2021). In fact, adopting ELSA in the learning process is not a novel practice; however, with the introduction of the new feature so-called ELSA AI, allowing learners to make conversations with a language model chatbot in a real-time environment, spaces for investigations in terms of usefulness and practicality of such application are opened.

1.2.5.3. The Role of Artificial Intelligence in Promoting Autonomy in Reading

Education, particularly reading, is experiencing significant transformations as AI becomes an integral component of learning environments (Luckin et al., 2016). Reading, a fundamental skill for personal and professional development, is being reshaped by AI technologies that offer new strategies for comprehension, engagement, personalisation, and autonomy. AI technology is influencing educational practices by enabling personalised learning experiences, where AI-driven systems analyse individual reading patterns and adapt content to suit the learner's needs and preferences (Luckin et al., 2016). This customisation not only enhances comprehension but also increases student engagement by aligning learning materials with their interests and cognitive levels.

Moreover, AI tools such as NLP and machine learning algorithms are being employed to create intelligent tutoring systems that provide real-time feedback and support (VanLehn, 2011). These systems can identify learners' strengths and weaknesses, offering targeted exercises to improve specific reading skills (VanLehn, 2011). Such technologies can democratise access to high-quality education by ensuring that students receive the individualised attention they need, regardless of their socio-economic background or geographic location.

AI-powered applications, such as NLP and machine learning algorithms, are revolutionising reading by providing tailored reading material recommendations based on individual preferences and reading levels (Canale et al., 2018). These technologies harness the power of big data to analyse a user's reading history, interests, and performance, thus customising reading lists that are both challenging and engaging. This level of personalisation is critical for maintaining student engagement and fostering a love for reading, which is foundational for autonomous and lifelong learning.

Moreover, AI-powered recommendation systems are also increasingly implemented in educational technologies. Adaptive learning platforms use AI to recommend reading materials and activities tailored to the learner's current level of understanding and progress, thus promoting effective learning outcomes (Kidd, 2012). These platforms often integrate machine learning algorithms that continuously refine their recommendations based on user feedback and performance data, ensuring that the suggestions remain relevant and challenging (Pardo & Siemens, 2014).

1.2.5.4. The Role of Artificial Intelligence in Promoting Autonomy in Listening

Listening has been one of the most difficult skills so far; however, it receives the least attention in class (Osada, 2004). Listening is construed as a process of comprehending the meaning of incoming data and conveying messages orally in another way (Gu, 2018). Since AI technology promotes the reform of learning methods such as online learning and mobile learning, it has brought great impact on traditional idea (Hu & Hu, 2020). The neural network, machine learning and other AI technology

makes the mining of massive speech, text data and personalised information more accurate in the process of listening learning in language study, which strongly guarantees to stimulate learners' desire to take listening practices (Hu & Hu, 2020).

According to Holden and Sykes (2011), mobile learning technologies “help produce learning that is personally customised, socially constructed, and which extends beyond the classroom” (p.4). In addition, mobile assisted learning is a supportive way to develop students’ autonomy and independence (Chen, 2016; Liu & He, 2015).

In their research study, Hu and Hu (2020) found that the AI-aided method was effective in promoting learners’ confidence. Learners were motivated to listen; they were more relaxed and active than before. Interaction with the machine and cooperative activities help strengthen students’ learning interest. The approach cannot only stimulate students’ learning motivation but also improve their AL ability. In addition, the inclusion of authentic materials and activities in AI learning aroused students’ motivation in learning English because they could attach a “real” meaning to what they did instead of just fulfilling a task assigned by teachers. An increase in self-confidence and self-esteem in interactive AI learning led to increased student effort and a greater willingness to take risks or to continue attempting to make their views understood by others. In this way, the AI approach stimulates students’ motivation and autonomous ability in listening study.

1.2.5.5. Autonomy in Grammar and Vocabulary

AI-enabled grammar correction tools, as discussed by Fu et al. (2020), have also played a significant role in promoting self-regulation by allowing learners to independently identify and correct errors in their writing. Similarly, vocabulary tools that adjust to learners individual proficiency levels, such as those highlighted by Divekar et al. (2021), encourage active management of vocabulary acquisition. By providing personalised learning pathways and immediate feedback, these AI systems empower learners to set and track their own learning goals, fostering greater autonomy in language development.

1.2.6. Criticism

The challenges relating to learners’ autonomy are highlighted by the recently expanded use of AI in education (Pawar et al., 2023). In fact, the use of AI in education has raised more ethical questions and hazards about a number of issues, including learner autonomy and personal data (Nguyen et al., 2023). The integration of AI in learning introduces a complex ethical landscape concerning the pursuit of learner-centricity in relation to autonomy. The extensive capabilities of AI systems, while aiming to optimise learning experiences, can inadvertently compromise learner autonomy if they become excessively prescriptive or make decisions on behalf of learners without their involvement (Pawar et

al, 2023). Such instances could curtail learners' freedom of choice, inhibiting their ability to explore diverse topics or adopt alternative learning strategies. Scholarly discussions have highlighted concerns over the potential erosion of learner autonomy and agency arising from the integration of AI into education (Shum & Luckin, 2019). Moreover, the convergence of privacy and autonomy issues emerges with the concept of affective capture, wherein behavioral nudges informed by AI-driven insights could potentially infringe upon learners' privacy and autonomy (Nemorin, 2017).

It is also important to acknowledge that AI tools cannot fully replicate the nuances of face-to-face human interaction, such as non-verbal cues, emotional intonation, and spontaneous feedback. As Rukiati et al. (2023) cautioned, AI should complement, not replace, real-life interaction with native speakers or classroom-based oral practice involving peers, instructors, or tutors.

Finally, in the process of using AI for teaching purposes, many educators are at a loss as to how to ensure that academic honesty is upheld and that students do not become dependent on technologies. It is important to provide teachers with training as part of their professional development in order to help them teach children how to use AI tools without suppressing autonomy and original thinking. (Karimi & Qadir, 2025).

Conclusion

To conclude, the first chapter presented a comprehensive understanding of AL, AI and some studies that establish a link between the two concepts. The first section provided some definitions of AL and traced its historical development. In addition, it examined the importance of AL by exploring its strong connection with learning strategies, motivation, cooperative learning and communicative language teaching. Moreover, the section reviewed the theoretical frameworks underpinning AL like cognitive theories, humanistic psychology, constructivist theories and self-determination theory. Furthermore, it presented the characteristics of autonomous learners and spotlighted the role of teachers and learners in enhancing AL. The second chapter dealt with AI and examined its definitions, evolution, types as well as its benefits in education and language learning. Special attention was given to the role of AI in promoting AL in writing, speaking, reading, and listening as well as grammar and vocabulary acquisition. The theoretical insights yielded from this review confirms the accuracy of the hypothesis that AI tools are effective in fostering students' autonomy. This sets the stage for further empirical investigation to get a deeper understanding of the role of AI tools in fostering AL.

Chapter Two: The Effectiveness of AI Tools in Promoting Autonomous Learning: The Field Work

Introduction

After having dealt with both variables of the research, learner autonomy and AI, on a theoretical basis in the first chapter, it is time to examine them on practical grounds in order to answer the research questions; these go as follows: (1) What are the specific features of AI tools that make autonomous learning (AL) possible? (2) What are the key challenges and benefits of using AI tools in promoting AL in EFL classrooms? (3) How can learners be more aware when using AI taking into account its drawback of dependency? This chapter is divided into two sections. Section one is devoted to the research methodology which includes detailed information about the population upon which the research was conducted, and the research means used to collect data; section two presents the analysis of the data, discussion of the findings as well as the limitations and recommendations for future research.

2.1. Research Methodology

The research methodology sheds light on the research design adopted in this study, the participants involved, and the instruments used for data collection.

2.1.1. Research Design

This research aims to investigate the effectiveness of AI tools in enhancing EFL learners' autonomy. To provide a thorough and deep comprehension of the research questions, the research design relies on a mixed-methods approach, combining quantitative and qualitative data collection methods. According to Creswell (2014), "[i]t is mixing" or blending of data, it can be argued, provides a stronger understanding of the problem or question than either by itself" (p. 215); in other words, a mixed methods design provides the most reliable results by integrating two sets of strengths and at the same time making up for the shortcomings of each method (Johnson & Onwuegbuzie, 2004). Therefore, researchers usually opt for mixing qualitative and quantitative methodologies to improve the validity and reliability of the results.

2.1.2. Population and Sample

The present study is based on two samples. The first consists of 52 Master1 and Master 2 students of didactics of foreign languages, specifically the English language, at Mila University Centre, enrolled for the academic year 2024-2025. The reason behind choosing Master students is their advanced proficiency level and familiarity with the theoretical aspects of language teaching and learning. Besides, they are supposed to have a solid understanding of the concept of autonomy and its underlying dimensions, let alone the AI tools utilised in language learning. The second sample is composed of

teachers specialised in the English language, specifically Didactics and Applied Linguistics, from the same university centre.

2.1.3. Data Collection Means

Data collection is a crucial step of conducting any research. One data collection method is not inherently better than another one, and choosing the suitable method primarily depends on the research goals and objectives (O’Leary, 2004). As a mixed-methods design was chosen, the research at hand employs two instruments. First, a questionnaire was administered online via Google Forms to Master students to gather their perspectives on using AI tools to enhance EFL learners’ autonomy. Second, a semi-structured interview was conducted with 5 teachers to elicit their perceptions of, and attitudes towards, the integration of AI tools in EFL contexts, specifically their utilisation as a tool to foster EFL learners’ autonomy.

2.1.3.1. Description of the Students’ Questionnaire

The Questionnaire is one of the most common methods of collecting information due to its “unprecedented efficiency in terms of researcher time, researcher effort and financial resources” (Dornyei, 2003, p. 9). The questionnaire of the current study focuses on collecting data about the possibility to foster learners’ autonomy through the use of AI tools. It was administered to 52 Master 1 and Master 2 students of Didactics of foreign languages, namely the English language. It consists of 17 questions that vary from close ended questions (yes/no questions, multiple choice questions) to open ended questions where students are given the opportunity to respond freely, write full answers, and give justifications in order to provide qualitative data. Moreover, the questionnaire is divided into 3 sections. Section one is about learner autonomy; it seeks to explore students’ perceptions of their own autonomy in learning English, the extent to which autonomy is important for them, the strategies they use to develop it and the challenges they face in becoming autonomous learners.

Section two examines learners’ experiences with AI tools as regards language learning. The section aims to determine which AI tools are used, how frequently they are employed, their advantages, and the challenges students encounter when using them.

Section three sheds light on students’ attitudes towards the role of AI tools in fostering their autonomy. It focuses on whether AI contributes to or hinders learner autonomy, and attempts to pinpoint the specific features responsible for each case. Finally, it asks the respondents to make suggestions on how to optimise the use of AI tools to ensure that they are used effectively, maximising their benefits and minimising their side effects like over-reliance.

2.1.3.2. Description of the Teachers' Interview

The interview is a qualitative data collection method that has always been a vital component of research methodology. According to Dornyei (2007), interviews are used to collect in-depth information about a specific topic, and it usually involves the researcher and an expert in the field under investigation. The current research utilises a semi-structured interview that seeks to discover teachers' perceptions about the effectiveness of AI tools in enhancing autonomous language learning. In this type of interview, questions may be asked in a different order and other questions may be added depending on the interviewee's responses. The interview consists of both close-ended and open-ended questions, grouped into four sections.

Section one is entitled advising students on AI tools; it investigates whether teachers have advised their students to use AI tools and explores the reasons behind their choices. Section two is about autonomous learning and AI tools, and it focuses on teachers' opinion about the effectiveness of AI tools in enhancing autonomous learning and the features they find most helpful. Section three spotlights the advantages of AI tools and the obstacles EFL learners face when using them. Section four is miscellaneous, and it inquires whether AI tools are more effective than traditional teaching methods in terms of boosting learner autonomy. It also examines the potential risks of AI tools like over-reliance on technology, and explores the role of teachers in minimising such problems.

2.2. Data Analysis and Discussion

As stated previously, the research relies on two data collection methods: a questionnaire for students and an interview with teachers. The collected data are systematically analysed and interpreted in order to answer the research questions.

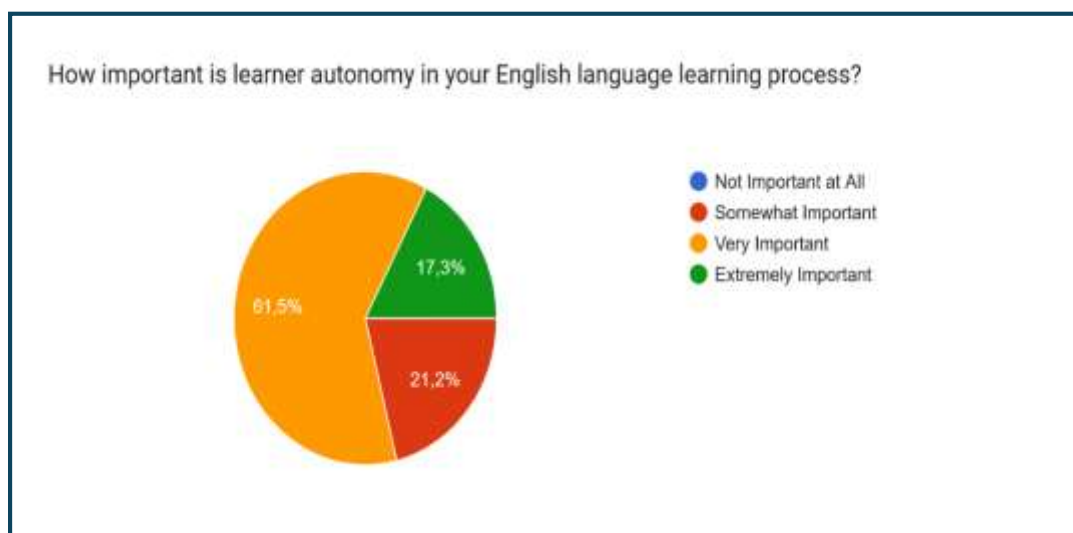
2.2.1. The Students' Questionnaire

The questionnaire was administered online to 52 students on April 28th. The answers of the students were automatically stored and recorded through Google forms.

2.2.1.1. Analysis of the Students' Questionnaire

Figure 1: Importance of Learner Autonomy

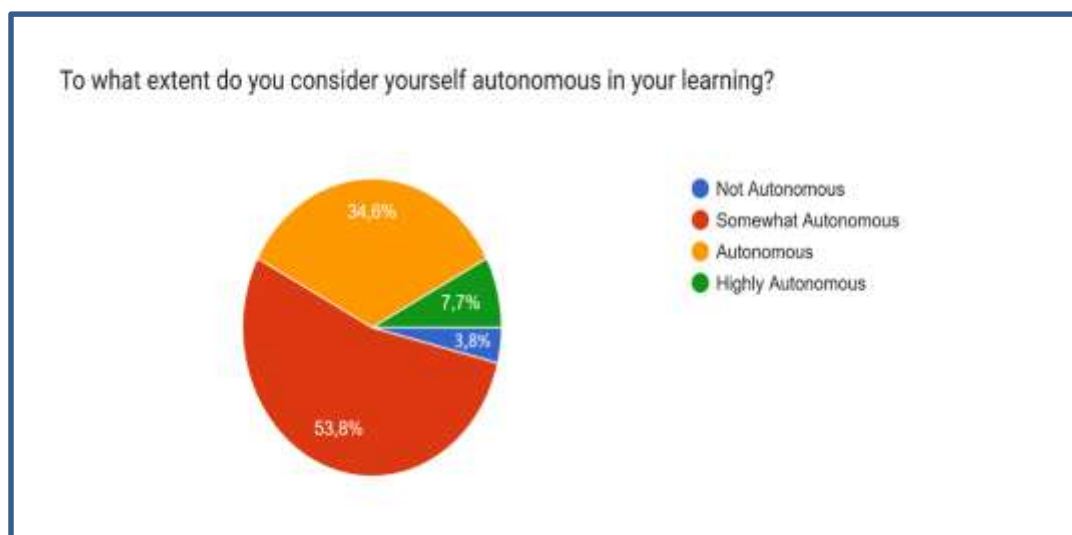
Q1:



The chart shows that 61.5 % of the respondents indicated that learner autonomy is very important in English language learning, 21.2 % view it as somewhat important while 17.3% consider it extremely important. Not a single student thinks that learner autonomy is unimportant. These results indicate that learner autonomy is perceived as a valuable skill among EFL learners. The fact that nearly 79.1 % of the participants view autonomy as either very important or extremely important underscores its relevance to modern language education.

Figure 2: Students' Perceptions of their Autonomy Extent

Q2:

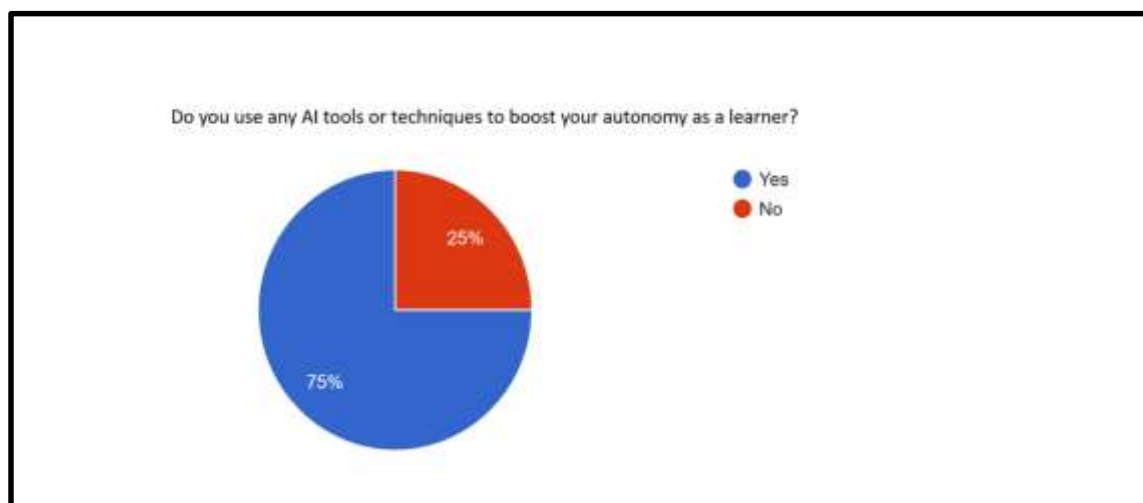


Out of the 52 participants, the overwhelming majority believes that they possess at least a certain degree of autonomy. Specifically, 53.8% identified themselves as somewhat autonomous, 34.6 % hold

that they are autonomous and 7.7% believe that they are highly autonomous. Only 3.8 % said that they are not autonomous. Based on these results, it is clear that the vast majority of students have positive perceptions of themselves as autonomous learners. However, the fact that the highest proportion was somewhat autonomous reveals that students may still struggle with many aspects of AL.

Figure 2: Students' Use of AI Tools or Techniques to Enhance their Autonomous Learning

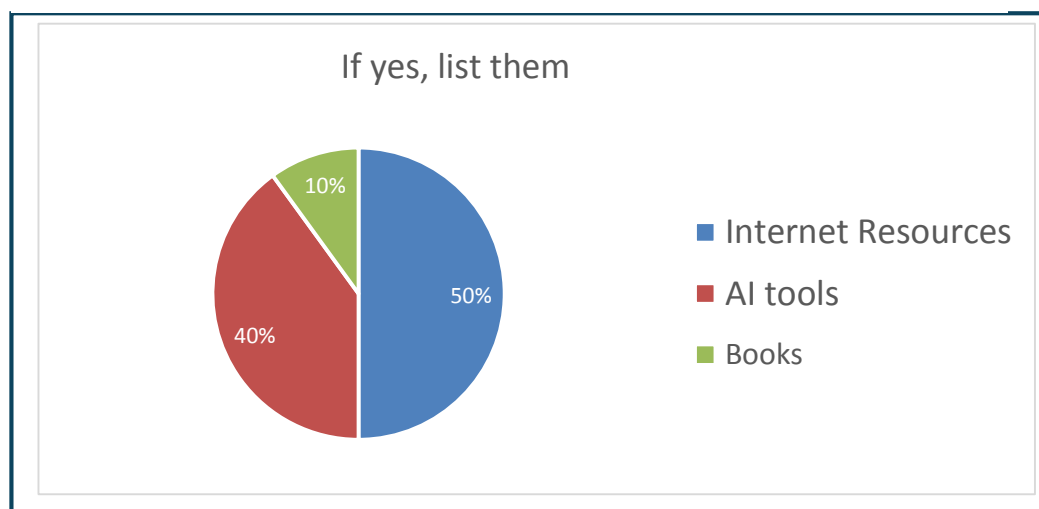
Q3:



As shown in the chart, 75% of the participants actively use AI tools and resources to boost their autonomy while only 25% do not. This suggests that most of the respondents are completely aware that autonomous learning is not a random activity, but rather requires the active implementation of certain strategies.

Figure 3: The Resources Used by Students to Enhance their Autonomy

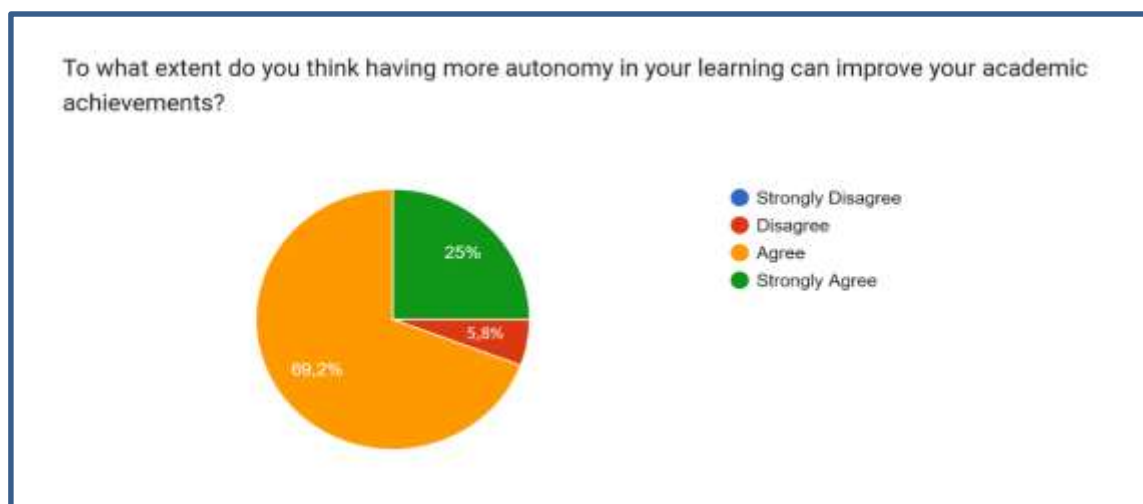
Q4:



Regarding the tools through which learners attempt to increase their autonomy, the figure above shows that they are distributed over 3 main categories. There is a dominance of internet resources with 50% of the participants choosing them; indeed, many students today rely on websites and educational YouTube videos. Forty percent reported that they rely on AI tools like Chatgpt, Quillbot and other applications to take charge of their own learning. Only 18% said that they rely on books as an autonomy boosting strategy. These contrasting percentages reflect a clear preference for modern devices like the internet and AI tools over traditional ones like books.

Figure 4: Students' Perceptions of the Potential of Autonomy in Academic Achievements

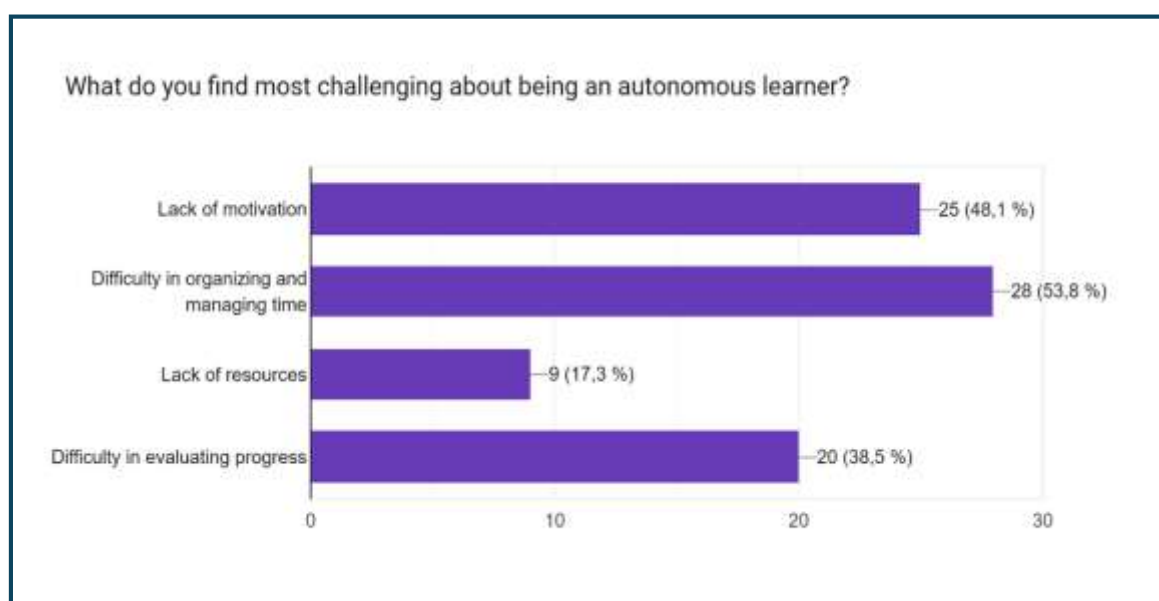
Q5:



The chart depicts students' perceptions of the relationship between learner autonomy and academic achievements. A significant proportion of the respondents (69.2%) agree that autonomy improves academic performance, 25% strongly agreed, 5.8% disagree while no student strongly disagrees. This indicates that the majority of the participants acknowledge the positive relation between learner autonomy and academic achievements, recognising it as a beneficial skill in second language acquisition. This is consistent with the findings of Mustajib & Ardian (2020), who asserted that autonomy and academic achievements are positively correlated in EFL contexts; students with higher autonomy tend to get better achievements in language learning.

Figure5: Challenges Faced by Students in Developing Autonomous Learning

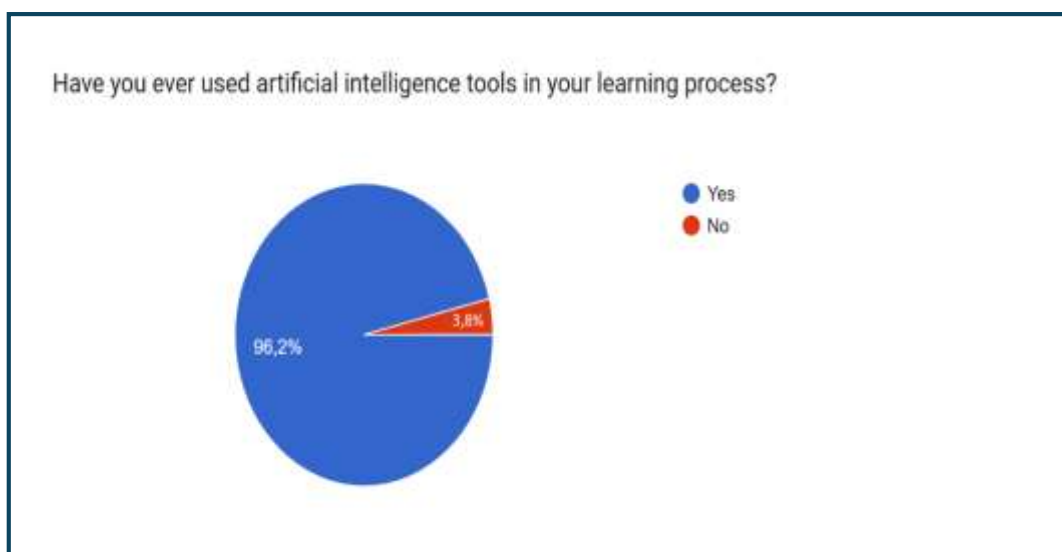
Q6:



When it comes to the challenges and obstacles EFL learners face in self-directed learning, difficulty in organising and managing time stands as the most prevalent challenge with 53.8% of the participants choosing it. This is followed by lack of motivation (48.1%), then difficulty in evaluating progress (38.5%) while lack of resources is viewed as the least encountered obstacle (17.3%). This sounds logical as today there is a wide access to educational resources; thus, the difficulty lies primarily in managing time effectively and maintaining high levels of motivation.

Figure6: Students' Use of AI Tools

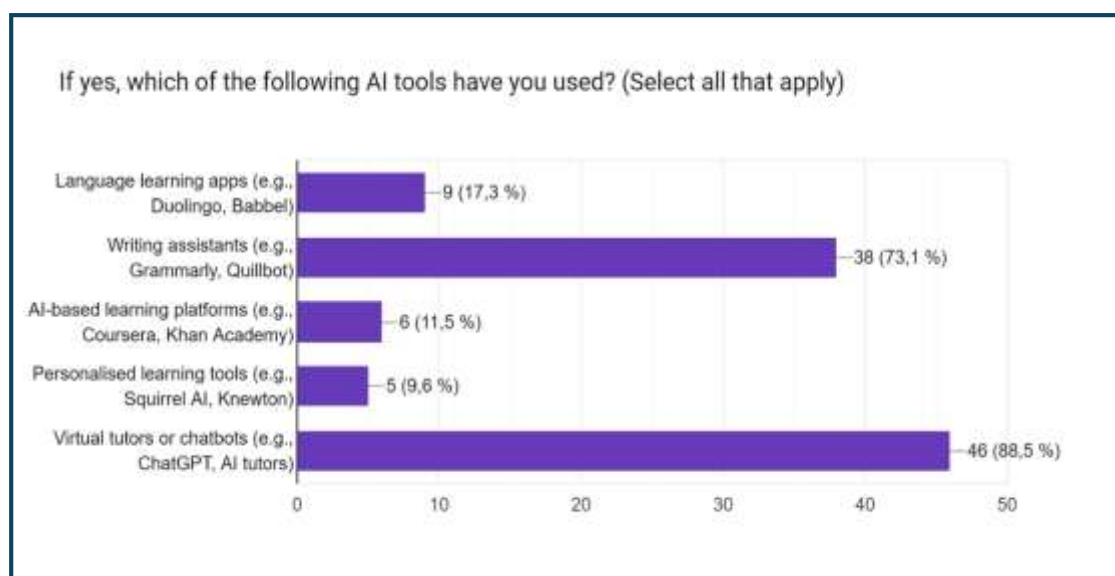
Q7:



The chart shows that 96.2% of the respondents have used AI tools in their learning process and only 3.8% reported that they have never used them. This indicates that AI tools have become increasingly prevalent and integrated into language learning.

Figure 7: The Utilised AI tools

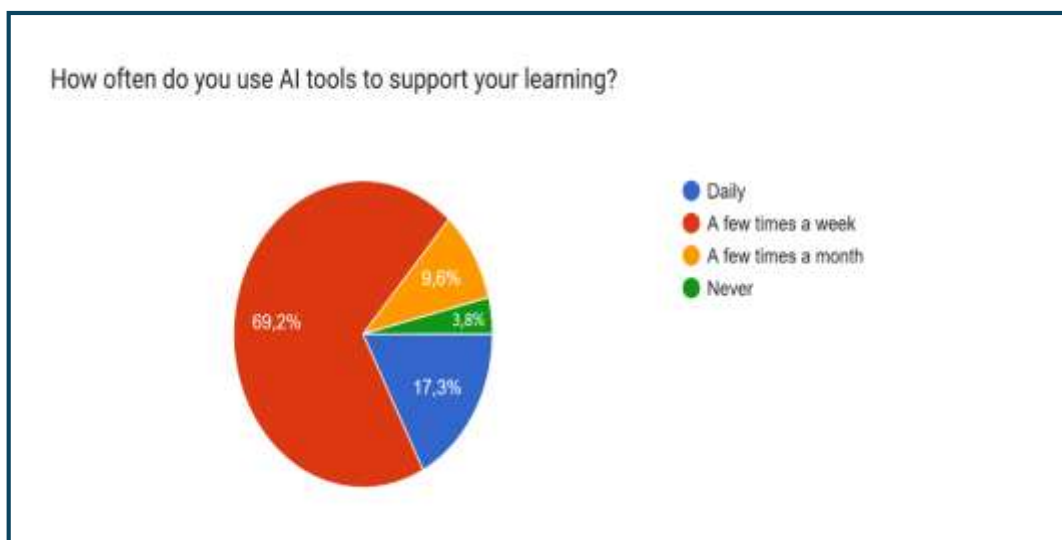
Q8:



The present question aims to identify the AI tools utilised by EFL learners. The overwhelming majority of the participants (88.5%) indicated that they have used virtual tutors or assistants like ChatGPT. This result is similar to the findings of Rebolledo Font de la Valle and Gonzalez Araya (2023) where Chatbots were found to be the most frequently used AI tools in language learning – though at the time generative AI tools was in its initial stages. Similarly, large percentage of the respondents (73.1%) reported that they have used writing assistants like Quillbot and Grammarly. Also, 17.3% said that they have used language learning applications like Babbel. Finally, 11.5% indicated that they have used AI based learning platforms while only 9.6% claimed that they have used personalised learning tools like Squirrel AI. Based on the results, it is clear that chatbots and writing assistants are among the most widely utilised AI tools among the participants.

Figure 8: The Frequency of Students' Use of AI Tools

Q9:



The chart above presents the frequency with which EFL learners use AI in their language learning. Out of a total of 52 students, 69.2% said that they use AI tools a few times a week. 17.3% of the participants reported that they use them on a daily basis while 9.6% claimed that they use them few times a month. Only 3.8% indicated that they have never used AI tools. The fact that a combination of

96.1% of the sample use AI regularly, once again, confirms that AI tools have become an indispensable part of EFL learners' study routine.

Figure 9: Advantages of Using AI Tools

Q10.:

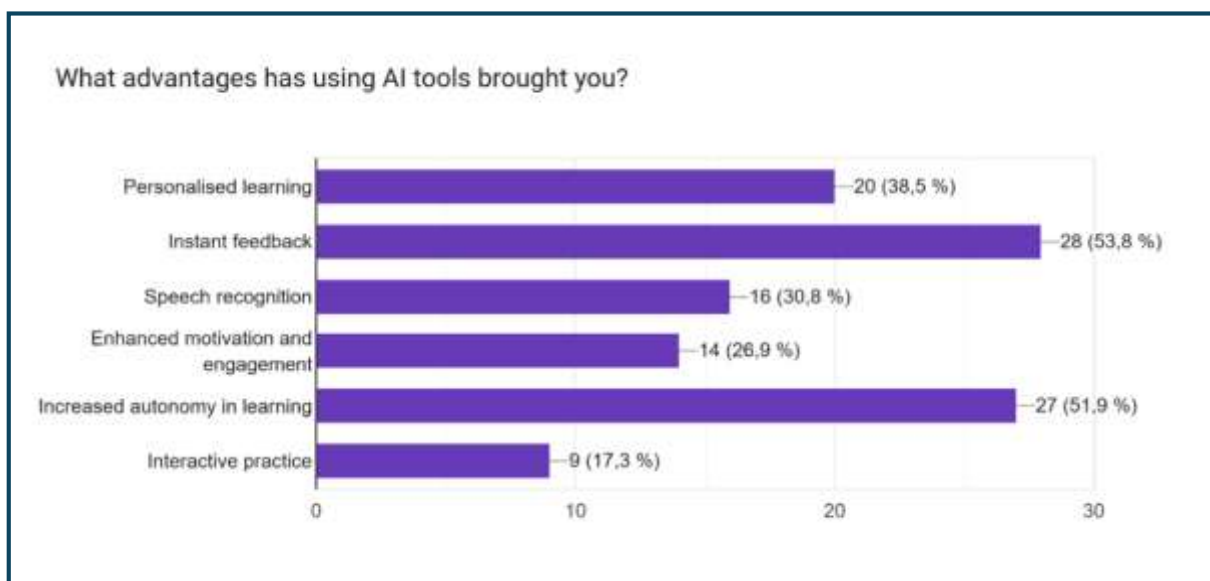
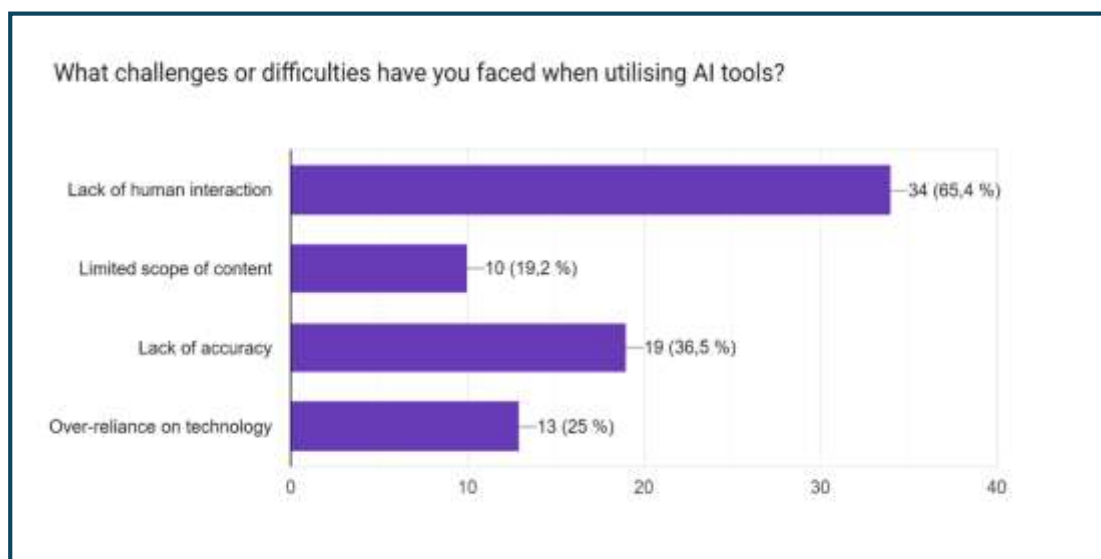


Figure 10 shows the key benefits of AI tools based on EFL learners' perspectives. More than half of the respondents (53.8%) indicated that instant feedback is the most valuable advantage of AI tools while 51.9% chose increased autonomy in learning. Around one-third of the respondents (38.5%) reported that the best advantage of AI tools is personalised learning. This feature is useful because when learners are exposed to the content which is tailored to their preferences and styles, learning becomes more interesting and effective (Kessler, 2018). Speech recognition was valued by 30.8% of the participants, enhanced motivation was selected by 26.9%, and interactive practice was chosen by 17.3%.

Figure 10: The Challenges Faced by Students when Utilising AI Tools

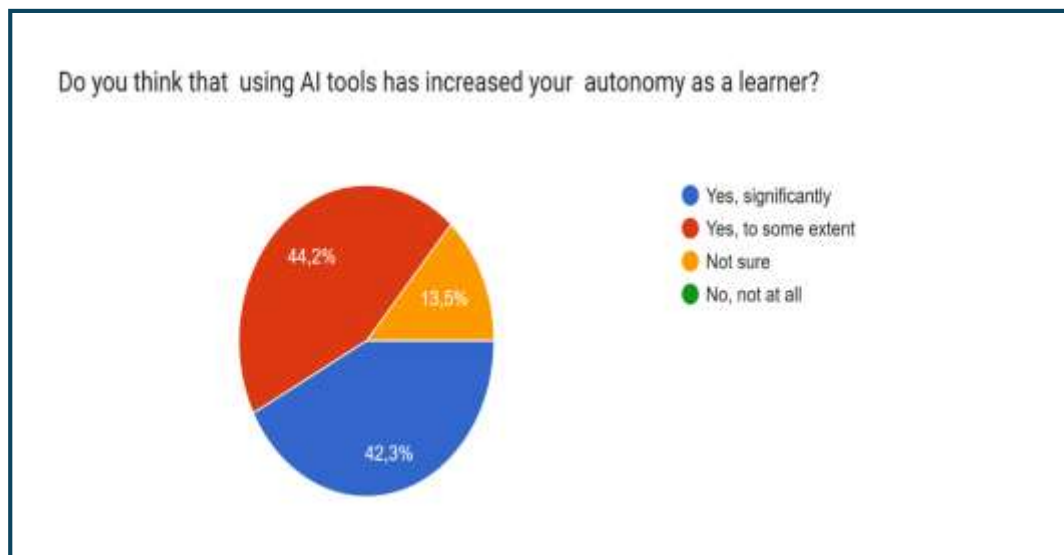
Q11:



The figure above is about the challenges EFL learners face when utilising AI tools. Lack of human interaction was chosen by 65.4%. This supports the findings of Khanzode and Sarode (2020) who held that the main limitation of AI-powered language learning tools is the lack of human interaction. Lack of accuracy was reported to be an obstacle by 36.5% of the participants, and over-reliance on technology was reported by 25%. Finally, 19.2 % opted for limited scope of content.

Figure 11: Effectiveness of AI Tools in Enhancing Students' Autonomy

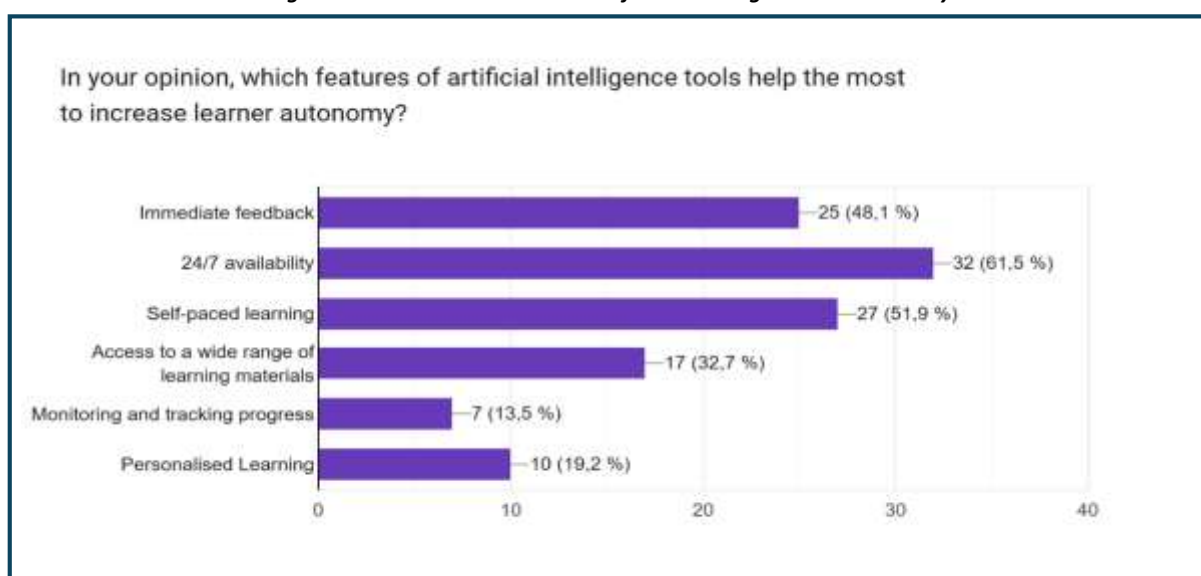
Q12:



A significant proportion of the respondents, (42.3%), stated that AI tools have significantly helped them increase their autonomy as language learners. This aligns with the findings of Wei (2023) who asserted that AI mediated language instruction improves language learning outcomes and fosters student autonomy. Additionally, 44.2% said that AI tools contributed to enhancing their autonomy to some extent while 13.5% indicated that they are not sure. Notably, there were no negative responses as no student responded with “not at all”, which indicates that there is no clear opposition to the potential of AI tools in fostering EFL learners’ autonomy.

Figure 12: Most Valued AI Features for Promoting Learner Autonomy

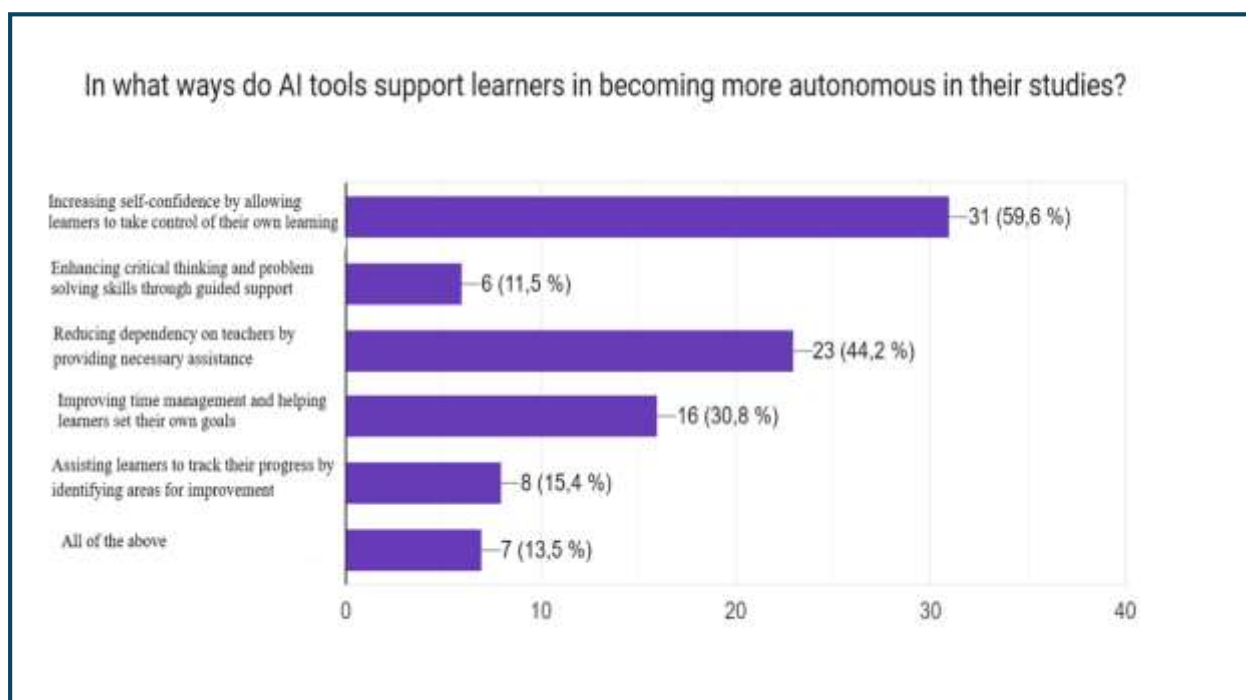
Q13:



This question aims to pinpoint the specific features of AI tools responsible for enhancing learner autonomy. Constant AI availability (or as the saying goes, 24/7) was chosen by 61.5 % of the participants, which suggests that students greatly value the constant access to these tools as they can study at any time making their learning more flexible; this flexibility is central to autonomous learning. Self-paced learning was chosen by 51.9%, indicating that students prefer learning at their own speed. Also, 48.1% of the respondents reported that immediate feedback helps them increase their autonomy as it allows them to correct their mistakes right away without having to wait for the teacher; immediate feedback, also, helps learners identify areas for improvement and progress in their language learning (Porter & Grippa, 2020). Moreover, access to a wide range of learning materials was chosen by 32.7% while personalised learning was chosen by 19.2%. The least chosen feature was monitoring and tracking progress which was reported by only 13.5% of the participants.

Figure 13: Students' Perspectives on How AI Tools Foster Autonomy

Q14:

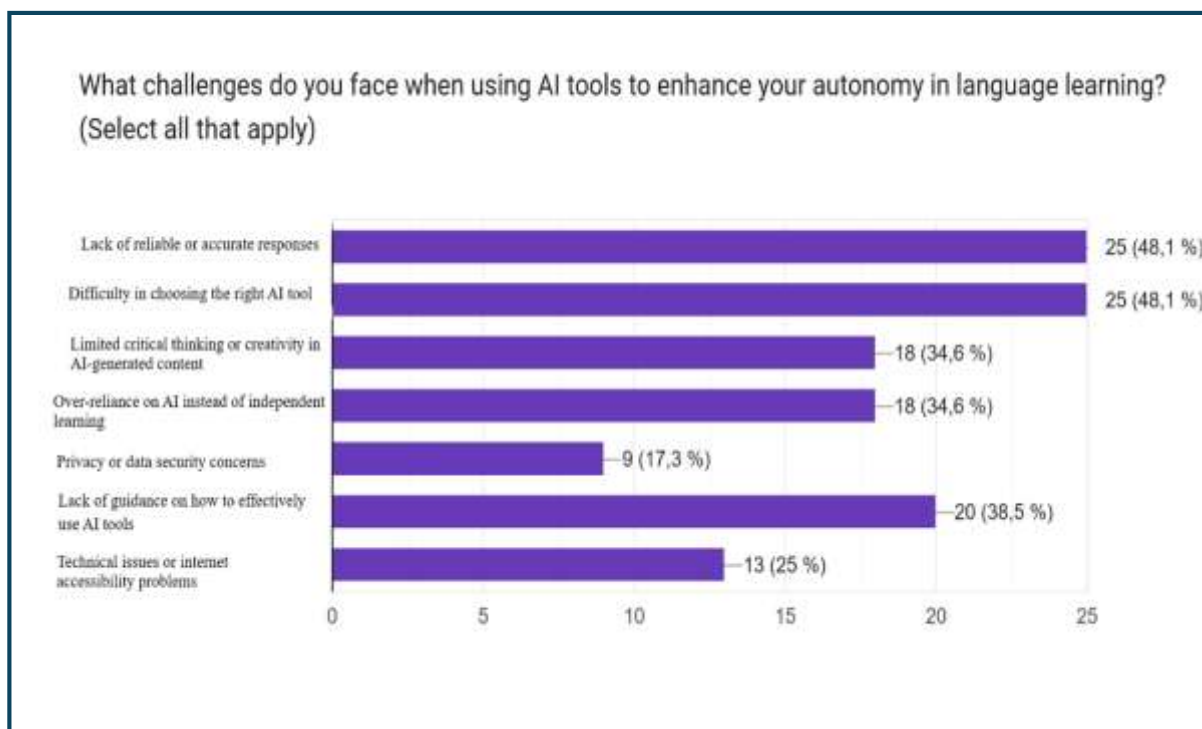


When students were asked about how AI tools support them in becoming more autonomous, they responded differently. The vast majority of them, 59.6%, claimed that AI tools make them autonomous by increasing their self-confidence and allowing them to take control of their own learning. The second most chosen response was reducing dependency on teachers by providing necessary resources (44.2%). Improving time management and helping learners set their own goals was reported by 30.8%, while assisting learners in tracking their progress by identifying areas for improvement was reported by 15.4%. Very few students (11.5%) said that AI tools boost autonomy through critical thinking and

problem solving, and 13.5% chose all of the above, showing that some students may see multiple benefits at once. All in all, the results indicate that AI tools help in fostering EFL learners' autonomy in many ways especially through increasing their self-confidence and reducing their dependency on teachers.

Figure 14: The Challenges of Using AI Tools to Enhance Autonomous Learning

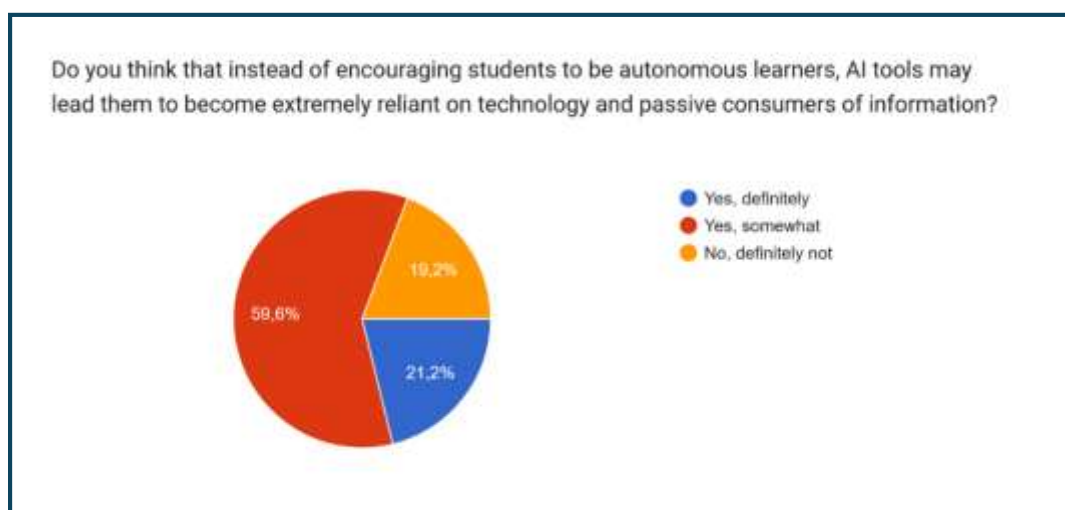
Q15:



This question seeks to identify the key challenges EFL learners face when using AI tools to enhance their autonomy in language learning. The most prominent challenges are lack of reliable or accurate resources as well as difficulty in choosing the right AI tools; each of these challenges was chosen by 48.1% of the respondents. A considerable percentage of participants (38.5%) claimed that lack of guidance on how to effectively use AI hinders their autonomous learning. Limited critical thinking or creativity was chosen by 34.6%; similarly, an equal percentage of students chose over-reliance on technology. Other obstacles include technical issues or internet access problems, chosen by 25%, and privacy or data security concerns chosen by 17.3%.

Figure 15: Students' Opinions of Using AI Tools and the Risk of Over-reliance on Technology

Q16:



The question aims to investigate whether AI tools may lead EFL students to become extremely reliant on technology and passive consumers of information instead of making them autonomous learners. The figure above shows that more than half of the respondents (59.6%) worry that AI tools may lead to over-reliance and passive learning while 21.2% admitted that there is a high risk of AI dependency. On the other hand, only 19.2% of the sample stated that AI does not result in over-reliance and passivity. The results indicate that the majority of the participants have concerns that AI tools may lead to over-dependence on technology. This is consistent with the findings of Blake (2020) who stated that students may become dependent on AI tools, which may hinder their ability for self-assessment and critical thinking. In 2023, UNESCO published “Guidance for Generative AI in Education and Research” in which it offers recommendations for the application of generative AI in education, stating that “Gen AI systems in education may limit learners’ autonomy and agency by providing predetermined solutions or narrowing the range of possible learning experiences” (p.39).

Q17: If yes, which methods or strategies would you recommend to make sure AI tools are applied in a way that enhances learner autonomy rather than reduces it?

When the student sample was asked to suggest methods or strategies to optimize the use of AI tools and to use them in a way that enhances their autonomy rather than diminishing it, the majority of the respondents recommended using AI tools moderately and only when necessary. In other words, students should not use AI when they feel that they are able to do the work themselves. Other students

suggested a comparative approach to using AI tools. For example, instead of asking the AI system to do the work from the outset, students have to initiate the work themselves using their own knowledge and skills. After finishing the task, they may compare their work with the AI-generated output in order to identify differences and mistakes and reflect on areas for improvement. This indicates a preference for systematic integration of AI that supports reflection and self-improvement.

2.2.1.2. Discussion of the Results

The results of the questionnaire provide important information about how AI tools help EFL learners develop their autonomous learning. To begin with, the results of the first section reveal insightful perspectives on autonomous learning. Autonomy was perceived to be an important skill in EFL context by most of the respondents. When it comes to students' perceptions about their autonomy, only very few students think that they are not autonomous learners. However, the majority of them classified themselves under "the somewhat autonomous category", which indicates that their autonomy is still developing; they still lack the skills and confidence to fully take charge of their own learning. Three quarters of the participants reported that they use some tools and strategies to enhance their autonomy, claiming that they rely on modern tools like the internet and AI tools. The overwhelming majority of students (94.6%) believe that learner autonomy positively impacts academic performance. As for the most encountered challenges in autonomous learning, they seem to be time management and lack of motivation.

Secondly, the second section results show that most participants have positive attitudes towards using AI tools in their language learning. The majority of them reported that they have used AI tools in their language learning, and the most utilised tools are chatbots and writing assistants. The respondents use AI tools at varying frequencies; most of them do so few times a week, suggesting that AI tools have become an indispensable part of their learning. This is because they think that AI tools are highly useful and facilitate language acquisition mainly by providing instant feedback and increasing their autonomy. However, they also claimed that they face some challenges when using AI tools like lack of interaction, lack of accuracy, and over-reliance on technology.

Finally, the findings yielded from the last section put the pieces together and inform about the participants' views of AI tools efficiency in boosting their autonomy. Most of the participants believe that AI tools help them become more independent in their learning, and the features that they found most helpful are 24/7 availability, self-paced learning and instant feedback. They indicated that AI helps them increase their autonomy mainly through increasing their self-confidence, reducing their

dependency on teachers, and managing time effectively together with setting goals. However, they also face some challenges like difficulty in choosing the right AI tool, lack of reliable and accurate resources, and not having enough guidance. Most importantly, more than half the sample worry about becoming over-reliant on AI. In order to avoid this side effect of using AI tools in language learning, students suggested using them only when necessary. Others preferred doing the work independently first then comparing it with the AI generated one.

2.2.2. The Teachers' Interview

The interview is structured around ten questions that are organised in four sections, each of which contribute in its own way to explore the link between AI and AL. First, the participants were asked about whether they advise their learners to use AI. Next, they were invited to share their views on the role of AI tools in promoting autonomous learning before addressing the advantages and the main challenges of using them. Finally, they were asked to contribute information on the connection between AI and learner autonomy, focusing on how this relationship can be positively developed.

2.2.2.1. Analysis of the Teachers' Interview

Q1: Have you ever advised your students to use artificial intelligence tools?

Q2: Why or why not?

All the interviewees responded that they do advise and encourage their students to utilise AI tools. The participants believe that using AI is important because it serves as a means to practise the language and improve various skills, mainly writing and speaking.

Q3: Do you think artificial intelligence tools foster autonomous learning?

Q4: What specific AI features do you think are most effective for fostering learner autonomy?

All the participants believe that AI tools foster autonomous learning. However, when asked about the specific AI features that are most effective in fostering language autonomy, their answers were variant. While the interviewees mentioned different features such as the availability and accessibility of AI tools at any time, learners' initiation, and the variety and abundance of resources, all of them agreed on the potential of providing instant feedback, believing that it is the main feature to foster learner autonomy.

Q5: What are the main benefits of using AI to promote learner autonomy in EFL classrooms?

The interviewees' answers to this question were quite diverse. One participant said that the main benefit is that using AI tools in EFL classrooms can be a way of practising the language and developing the respective skills. Learners, while imitating native speaker accent, can discover their own mistakes and correct them. Astonishingly, another participant stated that AI can replace the teacher since all teachers' tasks are available therein. A different contribution was that learners' initiation, independence, and developing critical thinking along with problem-solving skills are the main benefits of using AI to promote learner autonomy in EFL classrooms. In addition, two other participants believe that AI tools provide contexts similar to real-life situations, which help learners to access native speaker performance and aid them to perform accordingly, mainly in speaking and writing.

Q6: Are there challenges in implementing AI as a tool to boost learner autonomy? If yes, what are they?

All the participants agreed on overdependence as the main challenge in implementing AI as a tool to boost learner autonomy. In addition, some believe that such implementation can be challenging for both teachers and learners. For learners, misusing AI tools and passively copying data verbatim can hinder their progress. As for teachers, a participant admitted that there is illiteracy in using these tools. Moreover, some of the AI tools are not available for all and some are too expensive. Besides, instead of searching for AI tools, teachers, especially women, have other priorities.

Q7: Do you think AI is more effective than traditional learning methods in promoting learner autonomy? How so?

Regarding this question, the participants hold differing views. Two of them hold that AI is more effective than traditional learning methods in fostering learner autonomy, particularly if learners are proficient in using AI-powered tools. The others believe that AI fosters overdependence and reduce learner autonomy. They stated that the teacher's role as a guide in promoting autonomy is crucial and should not be overlooked. Therefore, they suggested a blending of AI tools with traditional teaching methods to effectively enhance learner autonomy.

Q8: Have you seen students become too dependent on AI? If yes, how do you handle it?

Some of the participants said that their students are not too dependent on AI; learners sometimes use it in their learning to better their level. Many of them, for instance, use Elsa to enhance their speaking skills. The rest of the participants said that the majority of their students become over dependent on AI tools, mainly in doing their tasks. To address this issue, they do not accept the

submitted answers and instead require their students to redo the tasks independently, using their own language.

Q9: Do you think that by regularly checking work with teachers, using AI tools moderately, practising critical thinking skills, and setting goals for independent learning, learners may reduce their over-reliance on AI?

All the interviewees agree that by regularly checking work with teachers, using AI moderately, practising critical thinking skills, and setting goals for independent learning, learners may reduce the over-reliance on AI tools. They also made it clear that teachers do not agree on using AI tools in the class. Some may use it frequently depending on the tasks provided. For instance, learners may be asked to summarise a given text by themselves, then use an AI tool; after that, learners compare the two summaries, analyse them and discover their mistakes and the correct methods and techniques as well. In addition, the participants believe that teachers should be knowledgeable about those tools. Learners should also be very aware of using AI in their learning and know how to manage its use.

Q10: What role should teachers play to ensure AI is used effectively?

All the participants agree that teachers should guide their students to effectively use AI tools. They said that teachers should also raise the students' awareness and regularly check and assess their progress.

2.2.2.2. Discussion of the Results

The interview provided insightful information about how AI tools can promote learner autonomy, through the lens of teachers. The interviewees support encouraging their students to utilise AI tools, emphasising the substantial impact these technologies have on promoting autonomous learning. They highlighted key features of AI, such as its constant availability, access to a wide range of resources, support for critical thinking and problem-solving skills, and provision of immediate feedback, as essential factors that contribute to independent learning. Despite acknowledging the benefits of AI in enhancing learner autonomy, the participants also emphasised the importance of appropriate and mindful use of these tools. They cautioned that without proper management, learners risk becoming overly dependent on AI. To address this concern, the interviewees recommended integrating AI with traditional teaching methods. They stressed, as well, the role of educators in guiding students on the effective use of AI tools and raising awareness about their limitations.

2.2.3. Discussion of the Main Findings

The analyses of the questionnaire and the interview reveal some main findings which constitute answers to the research questions. Firstly, the findings indicate that using AI tools is an important and effective way to boost EFL learners' autonomy. On the one hand, learners believe that AI constant availability, promoting self-paced learning and instant feedback are all specific features of AI tools that make AL possible. Students' preference for such features may be attributed to the fact that they address the learning needs which are usually not met in traditional instruction. For example, as opposed to AI tools, teachers cannot provide real-time feedback to all students. Besides, due to time constraints, some learners may feel rushed by their teachers to move through lessons without fully mastering the previous content. Thus, all these problems could be avoided thanks to the mentioned features. On the other hand, teachers view that in addition to constant availability and instant feedback, access to a wide range of resources, support for critical thinking and problem solving skills are also main features of AI that can help promoting AL. While both groups acknowledge the usefulness of constant availability and instant feedback, teachers also focus on the possibility of developing cognitive skills like critical thinking and problem solving through AI tools. All in all, it is noteworthy that AI tools cater to both teachers and learners' preferences.

With regard to the second research question, the results show that as using AI in promoting AL in EFL classrooms has numerous benefits, it also contains many challenges. It is shown that AI increases AL through increasing learners' self-confidence reducing their dependency on teachers, helping them to effectively manage their time, and setting their goals. However, teachers and learners claim that using AI is quite challenging. Learners see that it is difficult for them to choose the right AI tools due to the lack of reliable and accurate resources. Moreover, they admit that they face a difficulty in not having enough guidance; thus, they are at risk of becoming over-reliant on AI tools. As for teachers, in addition to the risk of becoming overly dependent on AI tools due to their inappropriate management, learners' effective and mindful use of AI tools should be well taken into consideration; otherwise, AI would hinder their autonomy. When comparing both views, it is clear that learners focus on the problems they encounter while using AI, whereas teachers emphasise the long-term risks associated with using AI tools like over-reliance.

Finally, as regards the third research question, the responses of both teachers and students suggest that learners should be more aware when using AI taking into account its drawback of dependency. Learners recommended using those AI tools only when necessary. Moreover, they view that it is better to start doing a given task by themselves then compare it with the AI generated one. Teachers, on the other hand, view that the educator's role in guiding the students on the effective use of AI and raising

their awareness is of great significance. They suggested integrating AI with traditional teaching methods for a better enhancement of AL through AI tools.

2.2.4. Limitations and Recommendations

To conclude the field work chapter, the limitations of the present study are highlighted and some recommendations are suggested.

2.2.4.1. Limitations

The present research is not without limitations; the following need to be recognised.

- Though the questionnaire was expected to be answered by Master 1 and Master 2 students of didactics of foreign languages at Mila University Centre, not all of them have provided an answer. Thus, the questionnaire was conducted with a relatively small number of students, only 52 students.
- While conducting the interview with teachers, many of them were not helpful arguing that they did not have time. Others asked to send the interview in their emails so as to answer even in a written form, yet, unfortunately, they did not. Therefore, a very small number of teachers responded to the interview, just 5 participants.
- Difficulties were encountered due to the lack of resources with regard to the topic of AI effecting AL. in fact, most of them were not for free.
- Though the research findings provided answers to the research questions, still there is ambiguity regarding the effectiveness of AI in promoting AL, mainly on how to make learners more aware while using AI tools.

2.2.4.2. Recommendations

In the light of the findings of this research, a number of recommendations are made to guarantee effective use of AI tools to enhance autonomous learning. It is recommended to integrate AI tools into the EFL curriculum to promote autonomous learning; all along the learning process, teachers should periodically assess whether the chosen AI tools are truly enhancing learners' autonomy. Moreover, there has to be a balanced approach where AI tools are used as a supplement, not a replacement, to teacher-led instruction in order to ensure that students benefit from technological innovations while still receiving the personalised attention and engagement that only human instructors can provide. This happens mainly by making students aware that AI tools should be used to complement human

interaction not replace it, and to support, not substitute, their efforts. Also, teachers have to focus on fostering critical thinking, providing nuanced feedback and emotional support that AI tools cannot replicate.

Furthermore, to ensure that AI tools are used effectively, both teachers and students should receive specialised training. For example, teachers should develop specific digital skills to harness AI innovations. On top of that, teachers have to be informed about the potential of AI tools in enhancing learners' autonomy, because only through understanding the effectiveness of such tools can educators embrace their use. On the other hand, students need to be taught how to choose the right AI tools and how to use them efficiently. Besides, they have to be trained on how to overcome the potential challenges and problems linked with using AI tools like data privacy concerns and over-reliance on technology. For the former, students have to learn how to implement strict data protection to diminish privacy problems and protect their personal information. For the latter, it is recommended that students be trained to use AI tools alongside self-assessment, reflection on the learning process and setting goals.

Finally, it is recommended to conduct further research to investigate the role of AI in boosting autonomous language learning through different directions. For example, future research should involve bigger sample size to reach more reliable results. Additionally, it is recommended for future studies to rely on an experimental research design to investigate the direct impact of AI tools on learner autonomy. Investigating the effectiveness of specific AI tools like ChatGPT and Gemini in enhancing AL is also necessary as the findings of the study at hand are general and do not apply to every AI tool.

Conclusion

All in all, this chapter has outlined the practical part of the present research study. After describing and analysing the data collected from both the students' questionnaire and the teachers' interview, the results are interpreted and the main findings are discussed. Through the interpretation and the analysis of the main data, the research questions were answered: the participants have provided insightful views about the specific features of AI that make AL possible, mentioned some key benefits and challenges of using AI in promoting AL, and suggested some ways through which learners can be aware when using AI to boost their autonomy. The final part of the chapter provides some limitations and recommendations, which can further contribute to the enhancement of using AI tools as a means to promote learner autonomy.

General Conclusion

The present research was undertaken to determine the effectiveness of AI in promoting EFL learners autonomous learning. It sought to investigate how effective using AI tools in boosting master 1 and master 2 Mila University Centre students' autonomy. Interest in this study stemmed from the crucial role and the noticeable impact AI has on various domains, specifically the learning process.

When used effectively, AI can positively contribute in a major improvement of AL; nevertheless, misusing AI tools can inadvertently compromise learner autonomy. As a result, such a topic needs to be tackled with care, and much attention should be given to promoting autonomy via AI.

A theoretical overview in relation to learner autonomy and AI formed the start-off of this research which was done to answer three questions revolving around the specific features of AI tools that make autonomy possible, the key benefits of using AI tools in promoting AL in EFL classrooms, and how learners can be more aware when using AI.

Answers to the abovementioned questions were reached throughout a practical study that is based on a questionnaire and an interview. The former was submitted to 52 master 1 and master 2 students at Mila University Centre, and the latter was conducted with 5 teachers of English at the same institution.

The analysis of the collected data revealed certain findings. First, autonomy was perceived to be an important skill in language acquisition by most students who claimed their reliance on modern tools, mainly AI like chatbots and writing assistants, to enhance their autonomy. Second, learners believed that AL positively impacts their academic performance, and AI helps in providing instant feedback, self-paced learning and constant availability; however, challenges like lack of interaction, lack of accuracy and over-reliance are always encountered. Finally, despite acknowledging the benefits of AI in enhancing learner autonomy, teachers asserted that it is essential to mention the importance of the appropriate and mindful use of these tools since without proper management, learners risk becoming overly dependent on AI. They recommended integrating AI with traditional teaching methods, stressing the role of educators in guiding students on the effective use of AI tools and raising awareness about their limitations.

In the light of the aforementioned findings, we conclude that when used appropriately and mindfully, AI tools can be an effective way to promote learner autonomy. However, the need for more theoretical research studies and practical implementations are always recommended to help learners wisely use AI tools to boost their autonomy.

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Appendices

Appendix 1: Students' Questionnaire

Dear students,

You are kindly invited to respond to the subsequent questionnaire which attempts to collect data for the accomplishment of a Master dissertation under the title **“The Effectiveness of Artificial Intelligence in Enhancing EFL learners' autonomy”**. We would be grateful if you could respond to our questions. Your contribution is of a great importance for the success of this research work. Thank you in advance for your collaboration. The data gathered through this questionnaire is used for research purposes only. Please, tick the choice that corresponds to your answer on the open-ended questions and kindly provide a complete statement whenever it is required.

Section 1: Learner Autonomy

1- How important is learner autonomy in your English language learning process?

1. Not Important at All, 2. Somewhat Important, 3. Very Important, 4. Extremely Important

2-To what extent do you consider yourself autonomous in your learning?

1. Not Autonomous, 2. Somewhat Autonomous, 3. Autonomous, 4. Highly Autonomous

3-Do you use any tools or techniques to boost your autonomy as a learner?

Yes

No

4-If yes, list them:

5- To what extent do you think having more autonomy in your learning can improve your academic achievements?

1. Strongly Disagree, 2. Disagree, 3. Agree, 4. Strongly Agree

6-What do you find most challenging about being an autonomous learner?

- a) Lack of motivation
- b) Difficulty in organizing and managing time
- c) Lack of resources
- d) Difficulty in evaluating progress
- e) Other (please specify)

Section 2: AI Tools

1- Have you ever used artificial intelligence tools in your learning process?

Yes

No

2- If yes, which of the following AI tools have you used? (Select all that apply)

- a) Language learning apps (e.g., Duolingo, Babbel)
- b) Writing assistants (e.g., Grammarly, Quillbot)
- c) AI-based learning platforms (e.g., Coursera, Khan Academy)
- d) Personalised learning tools (e.g., Squirrel AI, Knewton)
- e) Virtual tutors or chatbots (e.g., ChatGPT, AI tutors)
- f) Other (please specify)

3-- How often do you use AI tools to support your learning?

- a) Daily
- b) A few times a week
- c) A few times a month
- d) Never

4- What advantages has using AI tools brought you?

- a) Personalised learning

- b) Instant feedback
- c) Speech recognition
- d) Enhanced motivation and engagement
- e) Increased autonomy in learning
- f) Interactive practice
- g) Other (please specify)

5-What challenges or difficulties have you faced when utilising AI tools?

- a) Lack of human interaction
- b) Limited scope of content
- c) Lack of accuracy
- d) Over-reliance on technology
- e) Other (please specify)

Section 3: Learner Autonomy and AI Tools

1- Do you think that using AI tools has increased your autonomy as a learner?

- a) Yes, significantly
- b) Yes, to some extent
- c) Not sure
- d) No, not at all

2-In your opinion, which features of artificial intelligence tools help the most to increase learner autonomy?

- a) Personalised learning
- b) Immediate feedback
- c) 24/7 availability
- d) Self-paced learning

- e) Access to a wide range of learning materials
- f) Monitoring and tracking progress
- g) Other (please specify)

3-In what ways do AI tools support learners in becoming more autonomous in their studies?

- a) Increasing self-confidence by allowing learners to take control of their own learning
- b) Enhancing critical thinking and problem solving skills through guided support
- c) Reducing dependency on teachers by providing necessary assistance
- d) Improving time management and helping learners set their own goals
- e) Assisting learners to track their progress by identifying areas for improvement
- f) All of the above

4-What challenges do you face when using AI tools to enhance your autonomy in language learning?
(Select all that apply)

- a) Lack of reliable or accurate responses
- b) Difficulty in choosing the right AI tool
- c) Limited critical thinking or creativity in AI-generated content
- d) Over-reliance on AI instead of independent learning
- c) Privacy or data security concerns
- d) Lack of guidance on how to effectively use AI tools
- e) Technical issues or internet accessibility problems
- f) Other (please specify)

5-Do you think that instead of encouraging students to be autonomous learners, AI tools may lead them to become extremely reliant on technology and passive consumers of information?

- a) Yes, definitely
- b) Yes, somewhat
- c) No, definitely not

6-If yes,

what methods or suggestions would you recommend to make sure AI tools are applied in a way that enhances learner autonomy rather than reduces it?

Appendix 2: Teachers' Interview

Dear teachers,

This interview is a part of a research work carried out in the framework of a Master degree entitled: **“The Effectiveness of AI Tools in Enhancing EFL Learners’ Autonomous Learning”**. It aims at investigating the role of AI tools in fostering AL. Thus, your contribution would be of great help for getting a deep understanding of the topic under investigation.

Section 1: Advising Students on AI Tools

1-Have you ever advised your students to use artificial intelligence tools?

Yes No

2-Why or why not?

Section 2: AI Tools and Autonomous Learning

- Do you think artificial intelligence tools foster Autonomous learning?

Yes No

-What specific AI features do you think are most effective for fostering learner autonomy?

Section 3: Benefits and Challenges of Using AI

- What are the main benefits of using AI to promote learner autonomy in EFL classrooms?

- Are there challenges in implementing AI as a tool to boost learner autonomy? If yes, what are they?

Section 4: Miscellaneous

-Do you think AI is more effective than traditional learning methods in promoting learner autonomy?
How so?

- Have you seen students become too dependent on AI? If yes, how do you handle it?

- Do you think that by regularly checking work with teachers, using AI tools in moderation, practicing critical thinking skills, and setting goals for independent learning, learners may reduce the over-reliance on AI tools?

- What role should teachers play to ensure AI is used effectively?
- Is there anything else you'd like to add about the use of artificial intelligence tools in promoting learner autonomy?

Résumé

Les développements technologiques inédits dans le domaine de l'intelligence artificielle (IA) ont conduit à son incorporation dans plusieurs domaines, dont celui de l'apprentissage des langues. Le mécanisme par lequel l'IA aide à cet apprentissage reste encore mal connu. L'objectif de cette recherche est d'étudier l'efficacité de l'IA à renforcer l'autonomie de l'apprenant. C'est pourquoi cette étude cherche à répondre aux questions suivantes: 1) Quelles sont les caractéristiques de l'IA qui rendent l'apprentissage autonome possible? 2) Quels sont les avantages et les défis liés à l'utilisation des outils d'IA pour renforcer l'autonomie des apprenants? 3) Comment les apprenants peuvent-ils utiliser efficacement les outils d'IA en réduisant ses effets secondaires, tels que la dépendance excessive à la technologie? Les informations ont été collectées par un questionnaire administré en ligne auprès de 52 étudiants en Master et par des entretiens avec 5 professeurs au Département des Langues Etrangères au Centre Universitaire de Mila. Les résultats indiquent que la majorité des étudiants constate que l'IA contribue à renforcer leur apprentissage autonome, en augmentant leur confiance en eux et en réduisant leur dépendance envers les enseignants. Les caractéristiques de l'IA qui renforcent l'apprentissage autonome sont la disponibilité permanente, les réponses immédiates et l'apprentissage à un rythme adapté à chaque apprenant. Les défis rencontrés par les apprenants lorsqu'ils utilisent ses outils sont le manque de ressources fiables, la difficulté à choisir des outils appropriés, l'absence d'accompagnement sur leur utilisation efficace, ainsi qu'une dépendance excessive. D'un autre côté, la plupart des enseignants estiment que l'intelligence artificielle favorise l'autonomie des apprenants; cependant, les étudiants doivent recevoir un accompagnement adéquat de la part de leurs enseignants afin de minimiser les effets secondaires de l'IA, tels que la dépendance excessive.

Mots-Clés: Intelligence Artificielle, Les Avantages et Les Inconvénients de L'Intelligence Artificielle, Apprentissage des Langues, Les Outils de L'Intelligence Artificielle, Apprentissage Autonome

الملخص

أدى التقدم غير المسبوق في مجال الذكاء الاصطناعي إلى استعماله في العديد من المجالات بما في ذلك تعلم اللغات. إن مدى مساهمة الذكاء الاصطناعي في تعلم اللغات الأجنبية وبالخصوص تطوير التعلم الذاتي لا يزال غير واضح، لذلك تبحث الدراسة الحالية حول دور الذكاء الاصطناعي في تعزيز مهارة الاستقلالية في التعلم لدى الطلبة الجامعيين في تخصص اللغات. الأسئلة التي تعالجها هذه الدراسة هي: (1) ما المميزات الخاصة بوسائل الذكاء الاصطناعي التي تجعل التعلم الذاتي ممكناً؟ (2) ما التحديات الرئيسية لاستخدام أدوات الذكاء الاصطناعي في تعزيز التعلم الذاتي للغات وماذا يترتب عنه من فوائد (3) كيف يمكن للمتعلمين أن يكونوا أكثر وعياً عند استخدام وسائل الذكاء الاصطناعي للتقليل من سلبياتها خاصة الاعتماد المفرط عليها؟ تم جمع البيانات من خلال إرسال الاستبيان عبر الإنترنت لـ 52 طالباً من طلاب الماجستير وأجراء مقابلات مع 5 أساتذة في قسم اللغات الأجنبية في المركز الجامعي-ميلة. أظهرت نتائج الدراسة أن أغلب الطلاب يعتقدون أن استعمال وسائل الذكاء الاصطناعي ساهم في تطوير قدراتهم على التعلم الذاتي من خلال تعزيز ثقتهم بأنفسهم بالإضافة إلى التقليل من اعتمادهم على الأستاذ واعتباره المصدر الوحيد للمعلومات. الخصائص التي تعزز بها أدوات الذكاء الاصطناعي استقلالية التعلم تتمثل في التوفر على مدارس الساعة، إمكانية التعلم وفق السرعة الذاتية وتقديم التصحيح الفوري. التحديات الرئيسية التي يواجهها متعلمو اللغات عند استخدام وسائل الذكاء الاصطناعي لتعزيز استقلاليته تشمل نقص الموارد الموثوقة، صعوبة اختيار أدوات الذكاء الاصطناعي المناسبة، غياب التوجيه حول كيفية استخدامها بشكل فعال، والاعتماد المفرط عليها. في المقابل أجمع معظم الأساتذة على أن أدوات الذكاء الاصطناعي تساهم في تعزيز استقلالية متعلمي اللغة الإنجليزية، لكنهم أكدوا على ضرورة توجيه طلابهم لاستخدام وسائل الذكاء الاصطناعي بطريقة فعالة ومعتدلة لتجنب الاعتماد الكلي عليها.

الكلمات المفتاحية: الذكاء الاصطناعي، إيجابيات وسلبيات الذكاء الاصطناعي، تعلم اللغات، وسائل الذكاء الاصطناعي، التعلم الذاتي .