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**Exploring EFL Teachers and Students' Perspectives towards the Impact  
of Artificial Intelligence Tools on Academic Writing**

**Case Study: First Year Master Students at the Department of Letters and English  
Language, University of 8 Mai 1945, Guelma**

**A Dissertation Submitted to the Department of Letters and English Language in  
Partial Fulfillment of the Requirements for the Degree of Master in Language and Culture**

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## **Dedication I**

*First and foremost, I offer my praises all to Allah, the Great and the Propitious. My faith in Him has given me health, strength, and knowledge to achieve this goal and dedicate it.*

To the heroes of my life, my parents, for their endless prayers, infinite love, and constant encouragement; without them, I could not have been what I am today.

To my sisters, my pride and support in life: Nesrine, Menel, and Ibtissem.

To my brothers Zinou and Seif for their valuable advice.

To whom my heart goes out when they call me "My aunt": my nieces and nephews: Sirine, Assil, Aness, Tesnim, Ahmed, Isra and Yahia.

Without forgetting all those who love Soundous and Soundous loves them.

**Soundous**

## **Dedication II**

**“In the name of Allah, the Most Gracious, the Most Merciful.”**

**All the praise is due to Allah**

**I dedicate this humble work to:**

My dear parents, my lovely mother and father the source of affection and who have been doing their best so I reach my goal and achieve this study work at due time, thank you for being my champions for the past 23 years, may Allah bless them.

To my brothers and sisters.

To my supportive fiancé.

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## **Abstract**

Academic writing is an essential requirement for English as foreign language (EFL) students to reflect their experiences where they use a different style from other writing. Then the use of Artificial Intelligent (AI)-powered tools in Academic English is increasing rapidly. Accordingly, the present study aimed to explore teachers and students' perspectives towards the impact of AI tools on academic writing. More precisely, the research investigated AI tools impact on the quality of academic written works produced by students. Additionally, this research work had as a goal to uncover drawbacks that students may encounter when integrating AI tools into Academic Writing. To accomplish the planned objectives of the present exploration we opted for the quantitative descriptive approach which comprised a data gathering tool; the questionnaire. A Questionnaire, that probed the perspectives towards academic writing impacted by AI tools, was delivered to First year Master students of English language and culture at the University of 8 Mai 1945 (Guelma), and another was administered to their teachers. Quantitative data gathered from students and teachers' questionnaires were collected and then analyzed by SPSS software, version 25. Results highlighted the dual nature of AI's impact on academic writing. The benefits include improved grammatical accuracy, enhanced writing efficiency, and greater accessibility for diverse student needs. However, significant concerns arise regarding plagiarism, reduced creativity, and insufficient understanding of fundamental writing principles.

## **List of Abbreviations**

**ADALINE:** Adaptive Linear Network

**AI:** Artificial Intelligence

**AW:** Academic Writing

**ChatGPT:** “chat” and “GPT” (Generative Pre-trained Transformer)

**CV:** Curriculum Vitae

**DL:** Deep Learning

**EAP:** English Academic Purpose

**EFL:** English as a Foreign Language

**ETC:** et cetera

**LISP:** List Processing Language

**ML:** Machine Learning

**MIT:** Massachusetts Institute of Technology

**NLP:** Natural Language Processing

**NLU:** Natural Language Understanding

**PR:** Pattern Recognition

**RL:** Reinforcement Learning

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## **General Introduction**

Students across Algerian universities are eager to learn English as a Foreign Language (EFL) due to its increasing popularity and importance. Recently, in their educational journey, they are required to submit academic writings to fulfill their module, semester, or degree requirements.

Academic writing is a formal text developed by a process of presenting ideas analytically. Thaiss (2006) defined academic writing as “a term that fulfills and meets the purposes of education in colleges, universities, and institutions related to the use of academic writing features like paraphrasing, strong vocabulary, and organized paragraphs.” (p. 33)

In the 21<sup>st</sup> century Education has witnessed huge advancements in the light of technology implemented by new implications used in learning process. One of the most significant advancements is a human-like program called Artificial Intelligence. The study of computer systems that attempt to model and apply the intelligence of the human mind “it involves developing computer programs to complete tasks which would otherwise require human intelligence” (Saleh, 2019, p. 3). This provided its users with services impacting the Academic Writing process and quality. "AI, through its innovative technologies and flexible learning strategies, elevates academic writing by offering dynamic, interactive learning settings, and personalized educational journeys” (Malik et al., 2023, p. 1).

### **1. Statement of the Problem**

Academic Writing (AW) has been given special attention to EFL classes. It is an essential requirement that university students develop the proper tone, technique and style for their university assignments. However, Academic Writing can be a problematic, affective, and complex process (Rahimi & Zhang, 2018, p. 761). Therefore, it is difficult for students to reach such high-quality writing, organizing worthy content in a particular order, using appropriate

vocabulary, and achieving a well-organized structure that meets readers' expectations and needs. Also, they may encounter some obstacles since academic writing is not an easy process. According to Rugg and Petre (2004), writing is not a single activity. Instead, it is many activities: comprehending, analyzing, elaborating, synthesizing, mind mapping, ordering, articulating, clarifying, editing, criticizing, structuring, and sense-making. It is complex, daunting, and challenging (p. 13).

In reducing such difficulties students tend to get the help of AI tools. AI can guide the research and writing process, enhance accuracy and reliability, and promote creativity and innovation; there are applications and programs that change their performance and understanding of academic writing concepts. "For example, solving a problem without the use of hand-coded software containing detailed instructions" (Bughin et al., 2017, p. 20). This usage has risen in recent years in EFL academic setting using an AI technology. Such as innovative learning tools, tutoring systems, and virtual facilitators, has proven very valuable. However, the Impact of AI tools is still highly debated since the utilization of AI by students gives rise to several issues, posing challenges to fair student assessment, hindering student learning, and contributing to the spread of persuasive, yet inaccurate, essay tasks and homework assignments.

## **2. Aims of the Study**

The integration of artificial intelligence (AI) tools into academic writing is a growing area of interest in modern education. This study explores the perspectives of EFL teachers and students towards the complex interplay of AI tools in academic writing.

We are, then, conducting this research aiming to:

- 1) Understand different beliefs and ideas of EFL teachers and students concerning the integration of AI tools into academic writing.

- 2) Show the perceived benefits and effectiveness of AI tools in improving academic writing within EFL students.
- 3) Uncover drawbacks that EFL students may encounter with the integration of AI tools in academic writing.

### **3. Research Questions**

In English as a Foreign Language (EFL) education, this study delves into the perspectives of EFL teachers and students on the integration of artificial intelligence (AI) tools into academic writing.

For that purpose, the following research questions can be asked:

- 1) How do EFL teachers and Students think about AI assistance on Academic Writing?
- 1) What are the advantages of using AI tools into Academic Writing according to students?
- 2) What are the advantages of using AI tools on Academic Writing according to teachers?
- 3) What are the reservations among EFL teachers regarding the incorporation of AI tools in Academic Writing instruction?
- 4) What are EFL students' perceived drawbacks of AI tools used in Academic Writing?

### **4. Research Hypotheses**

We think that AI tools would impact academic writing, due to its effectiveness in reducing difficulties without shadowing its challenges. We suppose that it is possible to check this impact through teachers and students' perspectives towards. Then, this research hypothesizes that:

(H1): If students use artificial intelligence tools, their academic writing would be improved.

(H0): If students use artificial intelligence tools, their academic writing would not be improved.

## **5. Research Methodology and Design**

The present dissertation adopts the quantitative descriptive design in order to collect in-depth information about the investigated subject.

### **5.1. Research Method**

To get deep understanding of the impact of AI tools on students' academic writing. Thus, the independent variable is the "AI tools" and the dependent one is the "academic writing." The research is conducted to check the correlation between the two variables through students' and teachers' perspectives. The quantitative approach was utilized in conducting this research.

### **5.2. Population and Sampling**

The research sample is chosen randomly. It consists of First Year M1 students and their teachers for the academic year 2023-2024 at the department of English, 08 Mai 1945 Guelma University. They have different characteristics. Teachers vary from green to experienced, for degrees; they range from Magister to Doctorate. The reason behind selecting them as the population of the study is that their syllabus requires them to have varied types of academic writing ranging from research projects, essays, and reports to get tutorial marks as well as being self-autonomous without relying on written expression teacher to correct or to provide help. Eventually, they are to some extent aware of the differences that exist between other writing types and academic writing. In addition, First M1 students are preparing themselves to conduct a research and write a dissertation. Therefore, their contribution will be beneficial in the current research and will help in collecting more reliable data.

### **5.3. Data Gathering Tools**

Following the nature of the present work, quantitative data which involves a description and discussion of results from both students' and teachers' questionnaires would provide enough information to confirm the research hypothesis. In doing so, a total number of **118** M1 students and **15** teachers at the department of Letters and English Language, Guelma University, contributed in answering the questionnaires as the only tool used to carry out this study. Also, the students' questionnaire was piloted to **3** students of M1 to ensure measures of clarity and accuracy while preparing the questionnaire like simple language and objective questions. Accordingly, SPSS version 25 software tested the reliability of both questionnaires. Calculation cronbach' alpha coefficient proved that both questionnaires are reliable.

### **6. Structure of the Dissertation**

The dissertation will be composed of an independent variable which is artificial intelligence, and a dependent variable, which is academic writing. Besides a general introduction and a general conclusion the overall framework of the dissertation will be divided into two sections: theoretical and practical. Theoretical section will include a review of the literature on the two variables. The practical section represents the study's fieldwork will be composed of one chapter which will cover the analysis of responses and discussions of the obtained results

The first chapter is devoted to a theoretical examination of academic writing in terms of its definitions and characteristics. Later on, the focus narrows to its learning approaches and types of academic writing. Following that, it goes into the main obstacles comes in Academic Writing.

Chapter two, on the other hand, provides a theoretical basis for AI, identifying its history, , and types. Furthermore, the chapter defines AI approaches, offers a theoretical base for AI in

teaching and learning. Finally, this chapter provides an overview about most used AI writing tools, benefits, and drawbacks.

The third chapter is mostly concerned with the practical part it elucidates the way the subject under investigation is inquired. It gives a full description for the adopted method, target population, the used tools for data collection as well as data analysis and interpretations of results. Thus, the chapter provides pedagogical implementations and ethical consideration.

Finally, the work ends with a general conclusion, references list, and appendices.

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## **Introduction**

Academic writing is a different writing style used to present ideas, analyze research, and construct effective arguments within the academic community. Academic writing allows scholars and researchers to communicate their ideas and findings to a wider audience in a structured manner for the advancement of knowledge and the dissemination of discoveries. Whitaker (2009) confirmed that academic writing “it is not to show off everything that you know about your topic, but rather to show that you understand and can think critically about your topic” (p. 2). Moreover, it needs intellectual efforts throughout the writing process in all its genres. Therefore, this chapter defines academic writing and its characteristics, delves into the most prominent approaches to teaching Academic writing, clarifies the writing process, shows different genres, and reveals academic writing's major difficulties.

### **1.1. Defining the Writing skill**

Writing is an essential skill for anyone learning the English language. It is one of the four crucial language skills, along with listening, speaking, and reading. There has been a lot of research on writing, leading to a variety of definitions and viewpoints on the subject. According to Crystal (2019), “Writing is a means of communicating that involves a system of visual marks placed on some form of surface.” (p. 257). This definition highlights the symbolic nature of writing and its role in communication.

Additionally, Sokolik (2003) illustrated the multifaceted nature of writing, emphasizing its dual aspects of physical and mental acts:

Writing is both a physical and a mental act. At the most basic level, writing is the physical act of committing words or ideas to some medium, whether it is hieroglyphics inked onto parchment or an e-mail message typed into a computer. On the other hand, writing is the mental work of

inventing ideas, thinking about how to express them, and organizing them into statements and paragraphs that will be clear to a reader. (p. 88)

This means that writing involves physically expressing words or ideas by putting visual symbols onto a medium, like paper or a digital screen. These symbols, like letters and numbers, carry meaning and can be understood by others who know the same writing system. Simultaneously, it requires mental effort to generate and organize thoughts into coherent written form for clarity and understanding by the reader.

In the same vein, according to Rivers and Temperley (1978), writing skill is like “an art that requires consciously directed effort and deliberate choice in language” (p. 262). In other words, writing is like an art form that demands intentional and purposeful application of effort, as well as deliberate selection of language elements which involves being mindful and intentional about the words and phrases chosen to convey ideas effectively. Moreover, Bell and Burnaby (1997, as cited in Belkhir, 2016) claimed that:

Writing is a very complex cognitive activity in which writers must show control over content, format, sentence, structure, vocabulary, punctuation, spelling, and letter formation, i.e., control at the sentence level. Besides, writers must possess to structure and integrate information cohesively and coherently within paragraphs and texts. (p. 4)

Simply, writing is a challenging skill that encompasses not only understanding grammatical rules but also mastering the art of organizing and developing ideas. Besides, it also includes selecting appropriate vocabulary and expressions to construct a style suitable for the subject matter. Also, the writer must fully understand and manage all elements of language integrating coherence and cohesion.

In essence, writing is the key to effective communication, enabling individuals to convey ideas, emotions, and information clearly and strongly. It requires both the physical act of putting words on paper or screen and the mental effort of organizing and selecting appropriate language elements for clarity and coherence.

## **1.2. Academic Writing Definition**

In academia or higher education, mastering the academic style of writing is considered important. Academic writing differs from other forms of writing such as creative, personal, or business writing. It refers to the process of expressing ideas and thoughts within the context of scholarly discourse while adhering to specific academic guidelines. Various definitions have been given to academic writing. Oshima and Hogue (2007) declared that “academic writing is the kind of writing used in college classes...it is different from creative writing, it is also different from personal writing ” (p. 3). Also, Ng (2003) defined academic writing “as writing for academic purposes, which explores or examines some aspect of knowledge” (p. 11). This implies that academic writing is the formal expression of ideas and concepts within a specific field of study. The objective of academic writing is to explore, analyze, and present new insights or understanding.

According to Bailey (2006), academic writing targets students who compose essays and other academic assignments using English as their instructional medium (p. 1). It diverges from other writing styles by emphasizing objectivity, precision, and impersonality in expression. Furthermore, Geyte (2013) described academic writing as follows:

Academic writing is writing which is done by scholars (students or academics) for other scholars to read. It can take many forms: journal articles, textbooks, dissertations, group project reports, etc. Although students are increasingly being asked to write different types of academic text, the essay remains the most popular type of assignment. (p. 9)

All of these definitions enable students to understand the meaning of academic writing. This skill is extremely different from other writings because it follows its own set of rules. So, students should understand the basic notions and standards of academic writing to effectively communicate their ideas within the academic context.

### **1.3. Characteristics of Academic Writing**

Academic writing stands out from other types of writing through its use of a particular discourse style. To gain a deeper comprehension of academic writing, it is crucial to recognize and be familiar with its fundamental characteristics. Therefore, academic writing is characterized by complexity, formality, objectivity, explicitness, hedging, evidence, and citation.

#### **1.3.1. Complexity**

Written language is often more complex than spoken language. This is because it uses longer words, has a higher lexical density, and employs a wider range of vocabulary. Noun-based phrases are more prevalent in written language than verb-based ones. Additionally, written texts tend to be shorter but more grammatically complex, with more subordinate clauses and passive voice constructions. All of these factors contribute to the complexity of written language (Gillett, n.d.).

#### **1.3.2. Formality**

Oshima and Hogue (2007) stated that academic writing is formal, it avoids the use of slang or contractions (p. 3). In general, formal writing commonly follows the conventions of proper English usage, avoiding slang, repetition, unclear expressions, contractions, and informal language. It prioritizes grammatically correct sentences that are semantically precise and appropriate word selection.

### **1.3.3. Objectivity**

Academic writing values objectivity over personal perspective. Ng (2003) declared “When a writer focuses on the subject of discussion, whatever it is, without bringing in personal feelings or opinions, he or she is writing objectively” ( p. 13). To achieve objectivity in academic writing, it is recommended to use third-person pronouns like “he,” “she,” or “they” instead of first-person pronouns like “I” or “We.” Additionally, writers can use the passive voice to emphasize the action or event rather than the individual who acted. For instance, instead of saying “I conducted a study,” it is better to say “The study was conducted.” By following these techniques, writers can convey information objectively and respectfully to their audience.

### **1.3.4. Explicitness**

According to Gillett (n.d.), academic writing is explicit about the relationship in the text. This means that the writer needs to make it clear to the reader how different ideas are related. To achieve this, different signaling words can be used. Further, Anderson and Poole (2009) explained that an academic paper should have an introduction, body, and conclusion. They suggested that the introduction should begin by stating the problem clearly and providing readers with all the necessary data presented in the paper. The body should attempt to find a progressive solution to the problem mentioned in the introduction. Finally, the conclusion should present the solution to the problem that was identified (as cited in Djaber & Boutebbakh, 2020, p. 23). Therefore, it is important to maintain clarity and ensure that ideas are expressed explicitly.

### **1.3.5. Hedging**

Hyland (1998) emphasized that cautious language or hedging is a key feature in academic writing that conveys probability rather than absolute certainty (p. 1). He also noted that

Hedging can be accomplished by highlighting the limitations and shortcomings of the outcomes (p. 143). Thus, hedging in academic writing involves reducing the certainty or strength of a statement by using cautious language, qualifiers, or acknowledging limitations to indicate a degree of uncertainty or the possibility of alternative interpretations. The use of hedging allows writers to present their ideas with a level of caution. Examples of such words include “It seems that...”, “Possibly...”, “Perhaps...”, “In some cases...”, “It could be argued that...”, “It appears that...”, “There is a chance that...”, “To some extent...”, “It’s possible that...”, “It may be the case that...”, and “It could be argued that.” These words demonstrate to the reader that the writer is not making absolute claims, but rather considering various perspectives or acknowledging limitations in the evidence or analysis. Ultimately, using hedging language enhances the credibility of the author by indicating an awareness of the inherent uncertainties in academic inquiry.

#### **1.3.6. Evidence**

Ng (2003) declared that writers must support their claims and arguments with appropriate and compelling evidence, including facts, statistics, research findings, specific cases as examples, and expert opinion (p. 14). By doing so, evidence adds credibility and enhances the overall quality and persuasiveness of academic writing.

#### **1.3.7. Citation**

Citation serves as a notable feature that shows the trustworthiness and responsibility of writers. Ng (2003) says “Citing other relevant sources is commonly practiced in academic writing to provide a context for approaching and developing a topic.” He also emphasized that when writers take ideas from other authors, they must acknowledge such authors by indicating the sources at appropriate places in the text, this is called citation. Additionally, in the written assignments, the writers are obliged to cite sources whether they quote the exact words or

quotes or rephrase them. To do this correctly, writers must incorporate a complete citation of the sources in a list of references at the end of the work (p. 16). By acknowledging the contributions of others in their writing, authors can avoid plagiarism.

To sum up, the academic writing style is based on these essential features: complexity, formality, objectivity, explicitness, hedging, evidence, and citation. These features make academic writing different from other types of writing.

#### **1.4. Approaches to teaching academic writing**

According to Jordan (1997), academic writing is “a wide umbrella term” (p. 164), narrowing it to the instructional domain. Equipping students with effective academic writing is crucial for their success in higher education and beyond since it is not an innate capacity we are born with. As a result, Students should enhance their ability to articulate ideas effectively by understanding and mastering these approaches. Thus teaching this complex skill is by several approaches that have emerged, let’s explore the most prominent of them.

##### **1.4.1. Product-Based Approach**

White (1988) pointed out that English academic purpose (EAP) writing “is very product-oriented since the conventions governing the organization and expression of ideas are very tight” (p. 6). The product-based approach that emerged in the mid-1960s focuses primarily on the final written document as the main objective. Nunan (1989) stated that: “The product approach to writing focuses on the result of the act of composition, i.e. the letter, essay, story and so on.” (p. 36). This approach originated from the behaviorist tendency. Thus it shapes students' creativity toward producing an independent style that communicates their ideas according to their audience. Despite the product-based adequacies other approaches emerged to consider various student's educational backgrounds and social experiences.



### **1.4.2. Process-Based Approach**

As its name implies, this approach emphasizes the process itself. It encourages students to engage in brainstorming, outlining, and multiple drafts to develop their ideas and refine their writing. Process writing originated from the individualistic and expressive tendencies widespread in education during the 1960s and 1970s. It encourages students to engage in brainstorming, outlining, and multiple drafts to develop their ideas and refine their writing. Some aspects of this approach remain relevant in contemporary educational practices (Coffin et al., 2002, P 10).

The primary goal of utilizing this approach is to help students understand and take control of the cognitive strategies involved in writing. White and Arndt (1991) stated that “Writing is far from being a simple matter of transcribing into written symbols: it is a thinking process in its own right. It demands conscious intellectual effort which usually has to be sustained over time.” (p. 3). While there is yet to be a complete agreement on the exact number of steps in the writing process we selected the most known. White and Arndt (cited in Harmer, J. 2001, p. 258) explains the process approach stages by a diagram (see figure 1)

**Figure 1**

*White and Arndt's Process Writing Model (cited in Harmer, J. 2001, p. 258)*

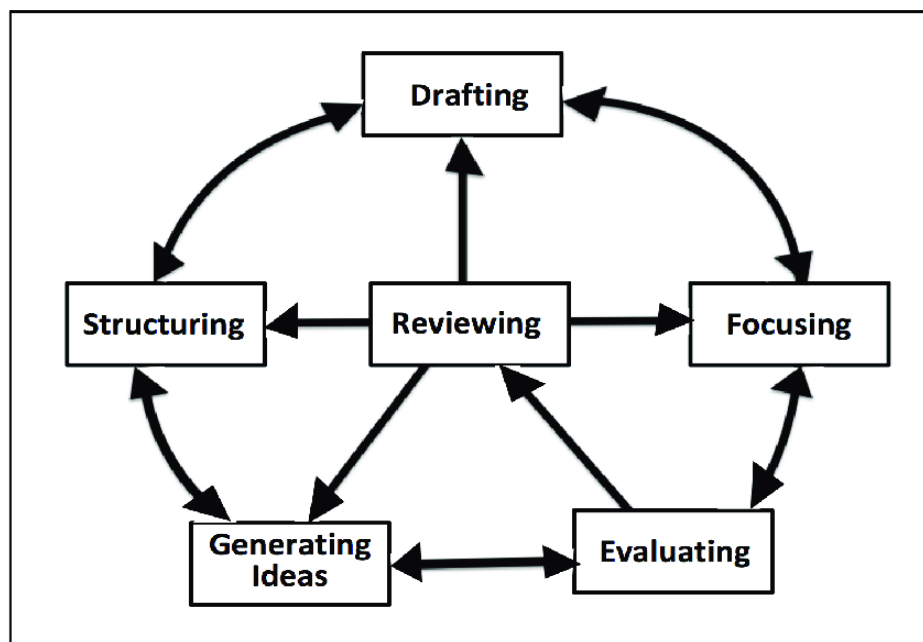


Figure 1 shows how to teach students to develop ideas, organize their thoughts, consider their audience, and revise. In White and Arndt's words, review their drafts multiple times to create a final piece of writing that effectively conveys their thoughts and ideas "as professional authors do, choosing their topics and genres, and writing from their own experiences or observations" (Raimes, 1983, p. 78) and produce a high-quality academic paper. As the student accepts his ability to develop his writing skills through stages, whenever the student finishes a draft he gives it to his teacher or a mate to revise it and then rewrite it again as a continuous process until it becomes according to his needs a fluent piece. However this approach also did not convince the academic community. Therefore, the next approach is the result of criticizing both the product-based and process-based approaches.

### **1.4.3. Genre-Based Approach**

The term “genre” can be defined as a collection of works characterized by certain features and rules that differentiate its aim from other works. Swales emphasized “A genre comprises a class of communicative events, the members of which share some set of communicative purposes” (1990, p. 58). A genre-based writing instructional method appeared in the 1980s. Genre studies are characterized by both concurrent progress and significant debate. According to Lynch (1996, p. 148) “in particular, with the idea that readers (and writers) of a specific genre are members of a community of people sharing interests and expectations about its communicative purpose.”

Consequently, the genre-based approach and product-based approach are similar in imitating a certain model to get an accurate piece. Nevertheless, the genre-based approach is mainly concerned with English-specific purposes as Harmer states “A genre approach is especially appropriate for students of English for Specific Purposes ” (2001: 258). Abdaoui Mounia (2010, p. 44) summarizes and compares the previous approaches' main points (see table 1).

**Table 1***A Comparison of the Product, the Process, and the Genre Approach*

<b>The Product Approach</b>	<b>The Process Approach</b>	<b>The Genre Approach</b>
-A model is followed: controlled writing.	-no model to follow: free and creative writing.	A model is followed: controlled writing.
-The final product is the most important thing.	-the process of writing is the most important thing.	- The genre is the most important thing.
-Interest in Linguistic Knowledge	-interest in the functions and skills of the language and the learners' needs	-interest in the rhetorical style and the linguistic features of the genre.
-Individual	-cooperative	-Cooperative then individual
-The teacher is the only feedback provider.	-peer review and teacher's feedback.	-peer review and teacher's feedback.
-The learners' needs are neglected.	-the learners' needs are satisfied.	-the learners' needs that serve the genre are emphasized
-Linear.	-recursive	-linear
-Continuous correction of errors.	-errors' correction is at the end.	- Errors' correction is important especially if it affects the genre.
-One draft.	-more than one draft.	- More than one draft.

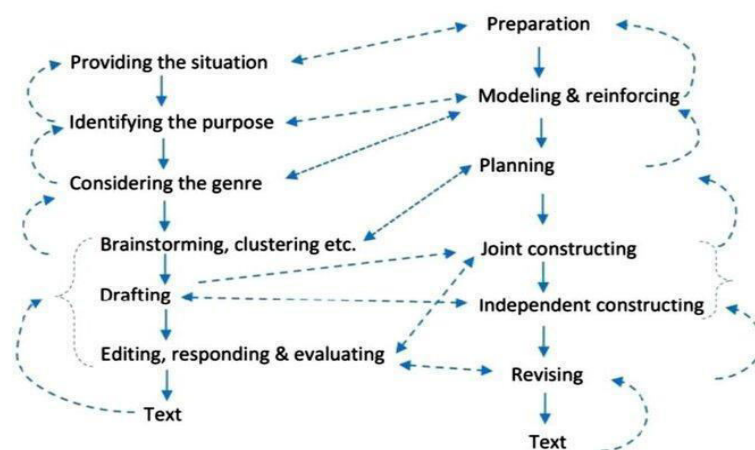
The previous table shows that both the genre-based approach and the product-based approach follow a certain model besides using a linear writing style. Also, process and genre approaches share the same revision technique and the number of drafts. Therefore they have different features to serve different purposes. Over time and at the beginning of the 21<sup>st</sup> century researchers have discovered other significant approaches namely

#### **1.4.4. The Process Genre-Based Approach**

It is a teaching method that combines process-based and genre-based approaches to help students overcome barriers in writing (Badger and White, 2000, p. 60). Students can benefit from understanding the writing process and skills in using language while also gaining familiarity including knowledge of language, context, and purpose with the specific genre they are working on. This method focuses on guiding learners through key processes like planning and drafting while also introducing model texts, explaining grammar and vocabulary related to specific genres, and helping students understand the purpose and context of their writing. Badger and White confirmed that this approach is “a piece of writing meant to achieve a particular purpose which comes out of a particular situation” (p. 158). The six stages of how the process and genre-based approaches are combined, adopted by Badger and White (2000), (see figure 2).

#### **Figure 2**

*Application of the process-genre-based approach (Badger & White, 2000, p.60)*



The figure shows the crucial stages of the writing process that have to be implemented. Firstly preparation, the teacher gets students ready to write by first describing a situation where they will need to use written words. Then, they explain what kind of writing it will be, like a story, a letter, or a report. Secondly, modeling and reinforcing, during this step the teacher presents a model text within the chosen genre to allow students to analyze its structure and purpose. Therefore, it fosters their understanding of how the chosen genre functions. Thirdly planning, in this phase students delve into certain activities such as Brainstorming and clustering to help them connect with their prior experience and knowledge. Fourthly joint construction, the teacher and students work together to produce a first draft through ideas provided by different students and edited or evaluated by the teacher. Fifthly independent constructing, after collaborating and sharing students begin to write their text according to the examined model independently. Sixthly revising, the student composes a piece of writing edited and revised by the teacher to gain the final text.

#### 1.4.5. The eclectic approach

Different students learn in different ways, so there is no single approach to teaching writing. That is why teachers need to be flexible and come up with attractive and different teaching methods to meet all their needs. In this case, scholars suggest an eclectic approach to

teaching academic writing that involves a combination of various learning methods to cater to the diverse characteristics of students, such as different learning styles, preferences, experiences, habits, backgrounds, and learning abilities. The key characteristic of this approach is to integrate the theory with language learning ideas (Gallardo, Heiser, & Arias-McLaughlin, 2017, p.518; Kumar, 2013, p.2).

The major benefits of this approach range from increasing teacher's flexibility. Wali (2009) confirmed teachers can adopt a flexible method and technique to achieve their goals. They may choose whatever works best at a particular time in a particular situation, for students' comprehensiveness and engagement (p.40). According to Sarifa (2018) this method "helps the student bridge the gap between the students' real-life exposure to vocabulary and the learning environment of the class." (p.42).

Combining teaching methods also allows teachers to combine the different uses of materials. Rivers (1981) suggested that incorporating diverse media (like videos, podcasts, and games) and visual styles (such as infographics and diagrams) can enhance learning by engaging different learning styles and providing context for new vocabulary and grammar. In addition, the teacher has to adapt a combination of different roles to suit different situations. "Because he is the organizer of group interaction, and the maximum effect, interest and benefit from teaching depend on him." (matlabovich, 2022, p.8)

Although eclectic methods have been used more extensively than other approaches, they received a range of criticism for their lack of clear guidelines on how to effectively combine elements from various methodologies. According to Stern (1983), this approach does not provide a guideline for selecting specific components from different methods and integrating them into a cohesive teaching strategy (p. 512). These lead teachers to be less coherent in choosing the appropriate techniques and methods which may result a disorganized and

ineffective teaching. As a result, teaching writing through an eclectic approach depends on the genre and the objective hoped to be achieved throughout the process.

### **1.5. Academic Writing Process**

The academic writing process is a collection of stages aimed at structuring a well-articulated piece of writing. Guiding the writer from initial ideas to a final product is challenging since the outcome is not the only concern but also the stages are prime. According to Hatcher and Goddard (2005), writers have diverse styles, but successful writing benefits from a structured process. This process guides them through the initial steps to compose the final writing piece (p. 11). From that basis, Oshima and Hogue (1998) maintain four stages, each with its specific steps divided as follows:

#### **1.5.1. Prewriting stage**

##### **1.5.1.1. Step 1: choosing and narrowing a topic**

The first step for the writer to conceptualize his ideas is to take control of them and narrow the broad subject to a certain aspect with the view to cover and manage the composition.

##### **1.5.1.2. Step 2: Brainstorming**

After the writer has specified his topic and narrowed his ideas, it is time to let the flow of thoughts and creations situate on the first draft. Although it may seem unnecessary, over time it helps in the later stages. The writer may research for information from reliable sources to reinforce his ideas and add coherent ones. There are useful brainstorming techniques: listing, free writing, and clustering.

#### **1.5.2. Planning (outlining) stage**

##### **1.5.2.1. Step 1: Making sub-lists**



The first step to making a plan after generating ideas is to divide the subject into further sublists or a preliminary outline to manage the useful and relevant ideas.

#### **1.5.2.2. Step 2: writing the topic sentence**

A topic sentence is the foundation of a paragraph by providing a clear and concise statement of the main idea or point that the entire paragraph will discuss and support.

#### **1.5.2.3. Step 3: outlining**

An outline is a plan that helps the writer organize, and structure his work. It serves as a skeleton providing a clear overview of the supporting points followed by supporting details that will be presented.

### **1.5.3. Writing and revising drafts stage**

#### **1.5.3.1. Step 1: Writing the first rough draft**

A writer cannot have a perfect version pursuing the outline on his first try therefore practicing through writing multiple drafts will enhance and refine his writing quality.

#### **1.5.3.2. Step 2: revising content and organization**

After the completion of a rough draft, the writing progresses to the revision stage. Revision involves modifying your initial writing to enhance its quality. This entails a critical examination of the content and organization, focusing on aspects like unity, coherence, and logical flow. Then the revision process allows for adjustments through changing, rearranging, adding, or removing sections of text. The primary objective is to refine the clarity, effectiveness, and engagement of your message. During this initial revision stage, it is better to defer concerns about grammar, sentence structure, spelling, and punctuation. These elements will be addressed later in the proofreading phase. The initial revision prioritizes ensuring a strong foundation in terms of content and organization.

#### **1.5.3.3. Step 3: proofreading the second draft**

Once the paper is revised for content and organization, the next stage involves proofreading. Proofreading focuses on the mechanics of writing, ensuring accuracy in grammar, sentence structure, spelling, and punctuation.

#### **1.5.3.4. Step 4 writing the final copy**

After revision and proofreading, the final draft is ready for submission. This should be a neat and legible document. The writer ensures to incorporate all the corrections identified during the previous revision stage. A final rereading might reveal a few additional adjustments, minor or even substantial. This iterative process of writing and rewriting is crucial to achieving a polished final product.

### **1.6. Genres of Academic Writing**

Academics are expected to write a piece according to English academic standards to fulfill a degree as students in their college or as a part of their work. In EFL classrooms, effective academic writing depends on choosing the right genre. Different types of writing have different expectations, depending on the context and the goal the writer is trying to achieve (like getting a good grade). For EFL learners, understanding these different genres is important for successful academic writing. Richards and Miller (2005, p. 29) stated that Graduate and undergraduate students encounter various academic writing genres throughout their programs. These genres are essential for fulfilling program requirements and earning their degrees.

Academic writing can be classified according to the purpose. Terryberry (2005) showed that in academic writing, you usually will write in either of two areas: to inform or to persuade.” (p. 151). Also, the writer can write according to the target community; therefore, diversified categories can be classified in academic writing. Richards and Miller (2005, p. 32)

claim that “there are four branch categories of writing that participating educators must produce at one time or another”.

### **1.6.1. Job-related writing**

Professional roles require educators to write in different ways for various reasons. This includes letters recommending students for further opportunities, reports detailing student behavior, syllabi outlining course structure, handouts providing clear instructions, and exams to assess student learning.

#### **1.6.1.1. Class Handout**

A handout is a supplementary learning tool, typically a sheet of paper, designed to support instruction and student comprehension. It focuses on delivering key information in a concise and clear format.

### **1.6.2. High-task writing**

This type of writing is used to promote yourself and advance your career. Examples include crafting curriculum vitae (CV) or a resume, along with compelling cover letters for job applications. Additionally, pursuing certifications like the National Board of Teaching Standards can involve extensive writing and portfolio development.

### **1.6.3. Writing to Tell Stories and Reports**

The experiences of educators naturally motivate them to share those stories. These experiences may lead them to reflect on their teaching methods and decide to undertake an action research project to address something they have observed.

#### **1.6.3.1. Report**

A report is a structured document designed to present information clearly and concisely for a specific audience and purpose. It typically includes a title, abstract or executive summary, table of contents, introduction, methodology, results, analysis, conclusion, recommendations, references, and appendices. Reports are used to inform, analyze, and recommend actions based

on data and findings, and they are common in fields like business, science, education, and government. Written in a formal and objective tone, reports aim to communicate information efficiently and effectively, making them essential tools for decision-making and knowledge dissemination.

#### **1.6.4. Writing in Graduate School**

Graduate programs present students with writing difficulties. Completing these programs requires strong writing skills to meet the strict expectations set by professors and other authorities in the field.

##### **1.6.4.1. Essays**

An academic essay is a formal piece of writing that explores a specific question or concept within a particular academic discipline. It aims to present a focused argument (thesis statement) supported by evidence and analysis from credible sources.

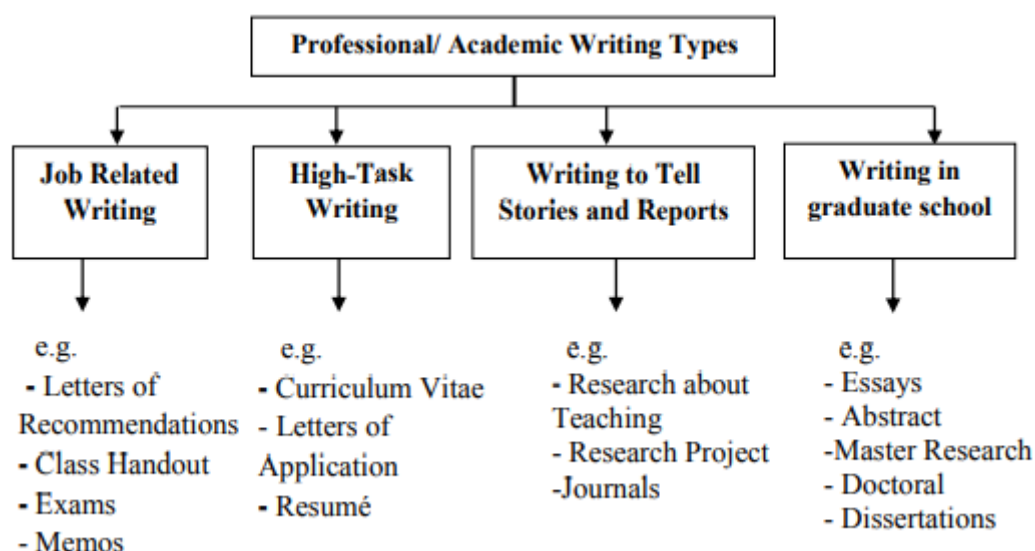
##### **1.6.4.2. Dissertation**

Generally, a dissertation can refer to any extended discussion or piece of writing that explores a topic in detail. It constitutes the final requirement for a program like a license, master or doctorate. Caulfield (2020, para. 1) confirmed that dissertation is a “substantial research conducted at the end of a degree program”.

The previous categories are presented in the following figure:

#### **Figure 3**

*Types of Academic Writing (Richards & Miller, 2005)*



## 1.7. Academic Writing Difficulties

Mastering academic writing poses a considerable challenge, especially for English as Foreign Language (EFL) students. This is due to the complexity of language structures, cultural differences, and unfamiliarity with academic conventions. As a result, the deficiencies EFL learners are bound to face in academic writing include grammar, vocabulary, cohesion, coherence, spelling, and punctuation.

### 1.7.1. Grammar

EFL students often face difficulties in comprehending and applying the grammatical rules of the language. Grammar is defined by Harmer (2001) as “the description of how words can change their forms and can be combined into sentences in that language” (as cited in Filali, 2019, p. 22). This implies that Grammar is the set of rules governing how words can change their forms and how they can be structured and combined to form meaningful sentences in a language. Further, Grammar rules encompass a variety of rules, such as the use of articles, sentence structure, tenses, prepositions, and use of pronouns. Nevertheless, many students struggle with adhering to these rules when they write.

### 1.7.2. Vocabulary

According to Asep (2014), vocabulary plays a crucial role in forming sentences, which is considered the foundation of effective writing skills. To effectively accomplish tasks, learners need a diverse vocabulary that can be utilized flexibly across different writing topics. Therefore, in their writing, students should aim for language that is as precise and accurate as possible, while avoiding language that is erroneous, imprecise, and ambiguous. However, most EFL students often encounter challenges when it comes to selecting appropriate vocabulary that fits the context (as cited in Yassaf & Laib, 2023, p. 11).

### **1.7.3. Cohesion and coherence**

To produce clear and well-structured written work, students need to master organizational skills, particularly coherence and cohesion. Halliday and Hasan (1976) claimed that “Cohesion refers to the relations of meaning that exist within the text, and is expressed through the stratal organization of language... It occurs when the interpretation of some elements in the text is dependent on that of another” (p. 4). On the other hand, cohesion can be challenging for students as it requires the ability to connect ideas coherently, maintain a clear flow of thought, and use appropriate transitions between sentences and paragraphs. Therefore, students may struggle with organizing their arguments logically, ensuring consistency in terminology, referencing, and avoiding repetition or ambiguity. Therefore, without cohesive writing, academic papers may lack clarity and fail to effectively convey the intended message.

Furthermore, Ahmed (2010) declared that multiple research papers from the Arab world focus on the coherence challenges encountered by students in their English writing. For example, Arab students’ written texts identified that repetition, parallelism, sentence length, limited variation, and improper use of specific cohesion devices are notable factors contributing to textual incoherence and deviation. Also, other studies exhibit that Yemini and Moroccan students have certain shortcomings in coherence and cohesion within their written

texts (p. 212). Overall, both cohesion and coherence are considered as difficulties for students in their academic writing.

#### **1.7.4. Spelling and punctuation**

Spelling is also considered a challenge for students in Academic writing. According to Bancha (2013), numerous studies concluded that the primary reason for spelling mistakes is the irregularities in the English spelling system (p. 3). This indicates that EFL students often struggle with spelling in English because the language has many irregularities and inconsistencies in its spelling rules. Unlike languages with more phonetic spelling systems, English words can be spelled in various ways despite having similar sounds, making it challenging for learners to master spelling. An example of this inconsistency is the word “color” in American English, which is spelled as “colour” in British English. This variation can create confusion for students trying to learn the correct spelling.

Additionally, punctuation poses a difficulty in academic writing. Carroll and Wilson (1993) claim that there are three issues related to punctuation. The first issue is that punctuation rules lack total precision, the second is the complexity of punctuation itself, and the third is the use of punctuation depends on the writer's style and intended meaning. How a student punctuates their writing has the power to completely change its meaning, because each punctuation mark offers a distinct interpretation of the meaning (p. 187). Consequently, students should be attentive to their punctuation which can often be problematic.

#### **Conclusion**

Academic writing is the formal style of writing used in colleges and universities. It is important because it helps students share their ideas clearly and contribute to the knowledge in their field. Students are required to produce many scholarly works. Therefore they need to have a good understanding of academic writing, its characteristics, and the different genres that exist in it. However, most EFL students view writing as a complex and challenging skill. They have

difficulties in grammar, vocabulary, cohesion, coherence, spelling, and punctuation. To overcome these obstacles, most of the EFL students are using artificial intelligence tools in their academic writing.

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## Introduction

Humans are living in a century characterized by the huge use of technology. Students in wide areas and specialties use their phones and computers to connect to the world through the internet, and EFL students are well known to use technology that facilitates their learning process of the four skills reading, speaking, listening, and writing that is the most known in academia where university students write an academic piece revolutionized by the emergence

of Artificial Intelligence (AI). Stone et al. (2016) claimed: “artificial intelligence (AI) is a science and a set of computational technologies that are inspired by—but typically operate quite differently from—the ways people use their nervous systems and bodies to sense, learn, reason, and take action” (p.10). This technology is newly released in the educational sphere and many researchers encourage the use of digital AI-based tools (Chang et al., 2021; Fitria, 2021; Kim et al., 2020; Kılıçkaya, 2020; Li, 2021). To cover this new field, the following chapter provides definitions of AI, elucidates its historical development, specifies different types of AI, interprets its approaches and capabilities then discusses the nature language processing field. Moreover, it limits teaching and learning in the AI era with an overview of the most used AI tools besides its benefits and limitations. Finally, educators have to recognize the ethical considerations of that technology.

## **2.1. Definition of Artificial intelligence**

Verma (2018) stated, “Artificial intelligence is the combination of two words artificial plus intelligence. Where artificial means not real or natural and by intelligence means the ability to reason, to trigger new thoughts, to perceive and learn”. Verma (2018) also described AI as an area of computer science that is focused on creating machines capable of acting and responding in ways similar to human behavior. It involves a variety of tasks such as speech recognition, learning, planning, and problem-solving, all of which are performed within computer systems. When a system adjusts according to a situation in any environment is considered intelligent (p. 6).

According to Tai (2020), “AI is an intelligence designed by humans and demonstrated by machines. The term AI is used to describe these functions of human-made tools that emulate the cognitive abilities of the natural intelligence of humans”. Tai also defined AI as a machine that replaces human labor to achieve faster and more efficient results (p. 339). In essence, AI

imitates human cognitive abilities to solve problems or perform tasks in a way that reflects human intelligence.

Furthermore, McCarthy (2007) defined artificial intelligence as “the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence.”(p. 2). This means that Artificial Intelligence is the field focused on creating smart machines, especially intelligent computer software, aiming to understand human intelligence.

## **2.2. History of Artificial Intelligence**

Artificial Intelligence is not a new concept or technology. Researchers have been familiar with it for a long time. Here are some key milestones in the history of AI that mark its development:

### **2.2.1. Early Explorations**

The origins of AI as a scientific field can be traced back to the 20th century. In 1950, Alan Turing created a test to determine whether a machine is intelligent or not. This test was used to evaluate the intelligence of computers. At that time, machines that passed the test were considered to be intelligent enough. Besides, McCarthy coined the term artificial intelligence as a field in 1956. He also developed LISP (List Processing Language) in 1957, which is a functional programming language designed for artificial intelligence. LISP is an older and more powerful programming language that allows humans to create programs that represent basic operations using a list structure (Mijwel, 2015, p. 2).

Nilson (2010) emphasized that in the late 1950s and early 1960s, Stanford professor Bernard Widrow and his student Mercian Hoff conducted significant work in neural networks. They developed a device called ADALINE (adaptive linear network). They also made a smart

algorithm called the Widrow-Hoff least-mean-squares to train ADALINE. This was a big step in making computers learn and adapt on their own. Their work helped start modern research on neural networks and led to many useful applications, like simulating things on computers and making complex networks (p. 69).

### **2.2.2. Artificial Intelligence from the 1970s to 1990s**

Between 1970 and 1980, the advancements in artificial intelligence during this time are too few to be tested. Researchers were hopeful because of unrealistic expectations, thinking it would be easy to make intelligent machines. But this era is called AI winter because the idea of just uploading data to create smart machines did not succeed (Mjiwel, 2015, p. 2). Further, AI saw a revival after this, introducing "expert systems" designed to solve complex problems. This had a big impact on AI research and led to further developments such as heuristic research, early applications in machine vision and face recognition, and progress in natural language processing. The main functions of these developments are developing efficient problem-solving techniques, enabling computers to interpret visual data and recognize faces, and enhancing computers' ability to understand and generate human language. However, the interest in Artificial Intelligence research and development is reduced in the late 1980s. This happened when the US government reduced funding for AI research. This period became known as the second AI winter (Russell & Norvig, 2010, p. 24).

In 1993, Massachusetts Institute of Technology (MIT) initiated the production of Cog, a robot with remarkably human-like features, which marked a significant step forward in robotics. Four years later, in 1997, the supercomputer Deep Blue defeated the world-famous chess player Garry Kasparov, underscoring the rapid advancements in artificial intelligence and the increasing capabilities of machines to perform complex tasks once thought exclusive to human intelligence (Mijwel, 2015, p.3).

### **2.2.3. The 21st Century AI**

Significant milestones have marked the progress of AI in the early 21st century. According to Mijwel (2015), the Kismet robot was introduced in 2000, which could use gestures and mimic movements for communication. This was a crucial step towards creating robots that could engage with humans more naturally and intuitively. Five years later, Asimo, hailed as the closest robot to possessing artificial intelligence and human-like abilities, represented a remarkable achievement in robotics. By 2010, Asimo's capabilities were further enhanced to respond to commands using mind power, highlighting the integration of brain-computer interface technology into robotics (p. 3). These key milestones underscored the evolution of AI-driven robotics throughout the 21st century, from basic communication and mobility to more sophisticated cognitive functions. They reflect the continuous quest for achieving human-like intelligence in machines.

In the field of education, there has been a significant increase in the number of AI-powered writing applications available since 2004 such as Google Translate, Grammarly, Quillbot, and ChatGPT (Chat and Generative Pre-trained Transformer). Each of these tools offers unique features and capabilities designed to enhance various writing tasks. Despite facing various challenges, AI has made significant progress and continues to advance through ongoing research.

### **2.3. Types of Artificial Intelligence**

Artificial intelligence (AI) can be classified in various ways, but two types of classification are mainly used. The first one is based on AI capabilities and the second one is based on its functionality. However, the focus here is on the second classification, which

divides AI into four categories: Reactive Machines, Limited Memory, Theory of Mind, and Self-Awareness.

### **2.3.1. Reactive machine**

Joshi (2019) explains that reactive machines are the oldest type of AI systems. They lack memory-based functionality and learning capabilities, and can only automatically respond to a set of inputs (as cited in Ivić, 2019, p. 161). This means that reactive machines can react to immediate requests and tasks, but they cannot retain memory, learn from previous experiences, or enhance their functionality based on those experiences. Additionally, they can only respond to a restricted set of inputs based on predefined rules.

### **2.3.2. Limited memory**

The majority of contemporary AI applications fall under the classification of limited memory machines, which can learn from past data to make decisions (Joshi, as cited in Ivić, 2019, p. 161). Further, Kumar et al. (2023) explained that Limited Memory AI, also called "bounded rationality," refers to AI systems that work with a limited amount of data and can adapt to changing circumstances (p. 680). This implies that limited memory can learn from historical data to make better decisions or provide more personalized responses. More precisely, in education, these systems analyze student responses and learning habits over time to personalize the learning experience, adjust difficulty levels, and predict future performance. All of these are to adapt their teaching strategies according to the needs and abilities of students.

### **2.3.3. Theory of mind AI**

Joshi (2019) stated, “Theory of mind AI is just a concept, it is the next frontier of AI. If ever achieved it will be able to achieve better interaction by distinguishing needs, emotions, beliefs, and thought processes of the other side” (as cited in Ivić, 2019, p. 161). Moreover, Kumar et al. (2023) claimed that the theory of mind means to understand and attribute mental states to oneself and others. In AI, it is important to create machines that can communicate effectively with humans. Theory of Mind AI has many advantages, such as enhanced communication, which enables machines to understand human communication more effectively by recognizing subtle linguistic and social cues. This, in turn, facilitates more effective interaction between humans and machines. Another advantage is empathy. Machines equipped with the Theory of Mind can better understand human emotions, enabling them to respond with empathy, resulting in more authentic interactions between machines and humans (p. 681).

#### **2.3.4. Self-aware AI**

This type is also just a concept. It means to create machines that can do more than just think and reason, but also be aware of their thought processes and their existence. The authors argue that self-aware AI brings several transformative benefits including increased efficiency, improved problem-solving, enhanced human-AI cooperation, and enhanced predictive abilities (Kumar et al., 2023, p. 681). Joshi (2019) said, “Self-aware machines are also a concept, it is the last stage of AI. It will be super intelligent and have self-awareness, i.e., it will have its own emotions, needs, beliefs, and potential desires” (as cited in Ivić, 2019, p. 161). Therefore, a self-aware type of AI that possesses the ability to recognize its existence, and understand its capabilities and limitations, would lead to the ability to adapt its behavior accordingly

#### **2.4. Approaches of Artificial Intelligence**



Social media recommendations and spam filters in our email are not chosen randomly; rather, specific approaches transfer our data into useful applications. The following is the most known approach.

### **2.4.1 Machine Learning**

Machine (ML) learning is a subfield of artificial intelligence that equips computers with the ability to learn from data, without needing explicit programming for every step. In Almaleki's (2021) words ML is an AI branch that allows technological devices to learn and become progressively better at doing unprecedented tasks or new others independently without any human integration (p. 26). Thus, it is an intelligent program that tailors its recommendations and actions based on your past interactions (Fischer et al. 2020. p. 131). It encompasses various techniques that allow machines to identify patterns, make predictions, and take actions based on their understanding of the data, such as supervised, unsupervised, and reinforcement learning.

#### **2.4.1.1 Supervised Learning**

Supervised learning is a machine learning technique where a computer learns from pre-labeled examples. Russell & Norvig (2010) defined a supervised learning algorithm as applied for making future predictions on the training data, by creating models based on proof (p. 545). This technique provides the computer with data that has two parts: the information it needs to analyze (like an image) and the corresponding correct answer (like "cat"). By analyzing many examples of this labeled data, the computer discovers the patterns that link the input to the desired output. Once trained, it can predict new, unseen data, this makes supervised learning ideal for tasks like image recognition, spam filtering, and even understanding spoken language.

#### **2.4.1.2 Unsupervised Learning**

The unsupervised learning algorithm acts as an explorer and deals with unlabeled data analyzing it to discover underlying patterns. Technically, it employs various techniques like

clustering to group similar data points together. Alpaydin (2004) explained that unsupervised learning can find connections of hidden patterns by using supervised methods. It can also give future predictions without “labeled” data. It aims to find the regularities in the input without supervision. One of the most widely used techniques is cluster analysis or grouping of input, which is used for exploratory data analysis to find hidden patterns (p. 11).

#### **2.4.1.3 Reinforcement Learning**

It is a type of ML where the computer learns through trial and error in an interactive environment. Russell & Norvig (2010) showed that reinforcement learning (RL) enables agents to learn from past experiences through a series of reinforcement –rewards, punishments or trail-error (p. 714). Unlike supervised learning with labeled data or unsupervised learning with unlabeled data, RL doesn't have a pre-defined dataset or explicit instructions. It learns by interacting with the environment, receiving rewards for desired actions and penalties for undesired ones. This allows RL to learn an optimal strategy for achieving a goal.

#### **2.4.1.4 Deep Learning**

Deep learning DL is a specialized branch of machine learning that utilizes artificial neural networks to enable computers to learn and make decisions autonomously, mimicking the human brain's ability to process information and recognize patterns. By training these deep neural networks on vast amounts of data, deep learning algorithms can extract complex features, make predictions, and improve their performance over time. DL algorithms are applicable when there are large amounts of unsupervised data and naturally learn data representations in a greedy layer-wise method (Hordri et al., 2016, p. 1)

### **2.5. AI in Teaching and Learning**

"AI is enabling teaching and learning analytics to detail what is happening (descriptive), why it is happening (diagnostic), predictive (what will happen), and prescriptive (what needs to happen)".(TeachOnline, 2018, p. 3)

### **2.5.1 AI in Teaching**

Teachers face a tough job. They have many students in each class, and these students all have different English levels and backgrounds. This makes it hard for teachers to give each student the help they need and to see how well they're learning. (Buddhima & Keerthiwansha, 2018, p. 35). In this sight EFL teachers lack control and materials to meet various students' needs as the traditional methods are no longer sufficient (Xue, 2021, p. 140). Therefore, new teaching methods and techniques have to be implemented to be flexible by removing educational barriers and adapt technological advances (Ghareeb, 2020, p. 72). Many scholars call for the necessity to integrate AI technology in teaching to develop the effect of the mode of teaching English and initiate reforms in education (Ghareeb, 2020, p 80; Xue, 2021, p. 142). Y. Liu also confirmed AI “provide precise clues, and guidance to teachers for their personalized instruction” (2018, p. 5). Besides collecting crucial data to analyze students’ character and background by providing teacher the suitable materials and methods to customize their learners, teaching with AI can also help teachers correcting works and giving them feedback to their errors, this intelligent system that can automatically assess students’ work, pinpoint errors, and provide detailed feedback for each student. This does not stop at individual feedback; AI can also analyze the entire class's work to provide a holistic assessment, giving teachers a comprehensive view of student performance (Buddhima & Keerthiwansha, 2018, p. 35; J. Li, 2021, p. 309).

### **2.5.2 AI in learning**

AI tutors students, offering them instant feedback and personalized practice to conquer mistakes and boost confidence. This engaging approach, with tools like chatbots and co-writers, keeps students motivated (B. Han, 2019). AI enhances learning by analyzing data, evaluating learners' feedback, and identifying areas for improvement, generating insightful reports to optimize learning outcomes.

## **2.6. Capabilities of AI**

Artificial Intelligence (AI) grown from a futuristic idea to a powerful tool that influences the educational sphere. AI can handle large amounts of data, learn from experience, and adapt to new information. Its capabilities include pattern recognition, decision making, and problem solving.

### **2.6.1. Pattern recognition**

Pattern recognition in AI refers to the ability of machines to identify patterns in data and use those patterns to make decisions or predictions using computer algorithms. It is a vital component of modern AI systems and is used in various applications such as facial recognition, tumor detection, speech recognition, text pattern recognition, and medical image recognition in healthcare. Bezdek (1992) confirmed Pattern recognition (PR) constitutes a vital subset of artificial intelligence, emphasizing the identification of patterns and consistencies within data.

### **2.6.2. Decision making**

Decision making in AI involves the process where data processing is carried out entirely or partially by an AI platform, quantifying data to make accurate predictions and precise decisions. AI can handle anomaly detection, data crunching, complex analysis, and trend spotting, with the final decisions being either fully automated or taken over by humans.

### **2.6.3. Problem solving**

Problem solving in AI refers to the ability of AI systems to identify, analyze, and solve complex problems using various techniques and algorithms. AI agents can be designed to address and solve complex problems or tasks in their environment, and they can employ reasoning mechanisms to make decisions and select actions based on their perception and knowledge. Problem-solving agents often engage in planning, taking actions to interact with their environment, and receiving feedback to adjust their actions and refine their problem-solving strategies.

## **2.7. Definition of Natural Language Processing**

Reshamwala et al. (2013) claimed that Natural Language Processing (NLP) is a branch of artificial intelligence that focuses on the interaction between computers and human languages (p. 113). Additionally, Joseph et al. (2016) provided a comprehensive definition of Natural Language Processing (NLP), stating:

Natural Language Processing (NLP) is a way of analyzing texts by computerized means. NLP involves gathering knowledge on how human beings understand and use language. This is done to develop appropriate tools and techniques that could make computer systems understand and manipulate natural languages to perform various desired tasks. (P. 207)

### **2.7.1. Applications of natural language processing in writing:**

NLP plays an important role in writing. Therefore, natural language processing has many applications in writing; it provides these applications with many techniques, algorithms, and linguistic knowledge to fulfill their functions. Some of these applications are natural language understanding (NLU), content generation, machine translation, spelling correction, and grammar checking (Church & Rau, 1995, pp. 71-79). NLP encompasses Natural Language Understanding, which involves extracting meaning from text and enabling systems to

comprehend and appropriately respond to user input. Additionally, Content Generation NLP models can generate content based on user input. Beyond NLU and content generation, NLP techniques enhance Machine Translation, by translating a text from one language to another. Moreover, NLP systems allow for spelling correction to detect and correct spelling errors in text. Further, NLP systems assist grammar-checking by analyzing text for grammatical mistakes and suggesting corrections.

## **2.8. AI Writing Tools**

Artificial intelligence (AI) has numerous applications in academic writing. “Through the establishment of the AI-assisted writing platform and the introduction of a benign mechanism of peer review, the quantity and quality of English writing can be widely improved” (J. Li, 2021, p. 309), including:

### **2.8.1. Language Correction and Grammar Checking**

AI-powered tools can analyze and correct grammatical errors, spelling mistakes, and punctuation issues, improving the overall quality of the writing. Nazari et al.(2021)confirmed “Moreover, the new AI Applications provide a comprehensive instructional practice and plagiarism detection component that may assist ESL in research writing progress” (p. 1).

Below are some examples of such AI-powered tools:

#### **2.8.1.1. Grammarly**

Grammarly is both application and a website launched in July 2009 by Alex Shevchenko, Max Lytvyn, and Dmytro Lider y and it is one of the most popular automated feedback programs. This tool helps users to find and correct errors before submission. According to Fitria (2021) Grammarly is a free online grammar-checking system, has earned numerous awards and holds the title of the most widely used English grammar-check software globally (p. 66). This application has three modes (see figure 1)

#### **Figure1**

## Grammarly modes

FOR INDIVIDUALS	FOR INDIVIDUALS	FOR TEAMS
<b>Free</b> Basic writing suggestions.	<b>Premium</b> Style, clarity improvements, and additional advanced corrections.	<b>Business</b> Professional and clear communication for teams of 3 to 149.
Current Plan	Get Started	Get Started
<ul style="list-style-type: none"><li>✓ Spelling</li><li>✓ Grammar</li><li>✓ Punctuation</li></ul>	<ul style="list-style-type: none"><li>✓ Everything in Free</li><li>✓ Clarity-focused sentence rewrites</li><li>✓ Tone adjustments</li><li>✓ Inclusive language</li><li>✓ Word choice</li><li>✓ Formality level</li><li>✓ Fluency</li><li>✓ Additional advanced suggestions</li></ul>	<ul style="list-style-type: none"><li>✓ Everything in Premium</li><li>✓ Style guide</li><li>✓ Admin panel</li><li>✓ Centralized billing</li><li>✓ Priority email support</li><li>✓ SAML single sign-on</li></ul>

### 2.8.2. Content Generation and Paraphrasing:

AI can summarize longer texts, providing students with a concise overview of the material and helping them understand the main points. In addition, it generates outlines for academic writing, helping students organize their thoughts and structure their writing effectively. Li (2021) stated these tools are “Encouraging students to actively participate in and cooperate in exploration, and guiding students to actively construct meaning” (p. 311). Such as:

#### 2.8.2.1. ChatGpt

ChatGPT defines itself as, short for "Chat Generative Pre-trained Transformer", it is an artificial intelligence conversational model that belongs to the family of GPT (Generative Pre-trained Transformer) language models, which are designed to understand and generate human-like text developed by OpenAI. The first version, GPT-1, was launched in June 2018. Since then, there have been several iterations and improvements leading to subsequent versions, such as GPT-2, GPT-3, and beyond. Each version has introduced enhancements in language understanding, generation capabilities, and model size. ChatGPT builds upon the

advancements made by previous versions of GPT, incorporating improvements in language understanding, coherence, and context sensitivity.

#### **2.8.2.2 Quillbot**

QuillBot is an AI-powered writing tool that offers a range of features to assist users in improving their writing. The Co-Founder and CEO of Quillbot, Rohan Gupta, established the cutting-edge startup in 2017 alongside David Silin and Anil Jason. Its primary function is to rephrase text, and providing a differently worded version that retains the original meaning. According to fitria (2022), Quillbot is a tool for paraphrasing and summarizing, empowering countless students and professionals to save time in their writing tasks by utilizing cutting-edge artificial intelligence to rewrite sentences, paragraphs, or articles (p.184). Additionally, QuillBot offers a summarizing tool that extracts vital points from extensive text, simplifying the understanding of complex information. It also includes a grammar checker to ensure content is free from errors, which can be especially helpful for non-native English speakers looking to improve their language skills. The platform is easy to use and accessible, with options to utilize it directly through its website or as a Google Chrome extension.

#### **2.8.3. Translation**

AI can translate text or audio into different languages, broadening access to academic resources and enhancing multicultural understanding. For instance:

##### **2.8.3.1. Google translate**

Google Translate is an AI-powered language translation tool. It was developed by SergyBrin in 2004 while working for Google and formally introduced in April 2006. This tool allows users to translate text, speech, images, and documents between over 100 languages. Google Translate can be accessed through a web browser, mobile app, or desktop app, making it convenient for users to translate content on various devices. The tool uses natural language processing and machine learning algorithms to provide accurate and contextually relevant



translations, helping users communicate effectively across language barriers. Google Translate is widely used for personal, academic, professional, and travel purposes, enabling users to understand and communicate in different languages with ease and efficiency. This tool assists students in obtaining translations promptly and effortlessly (Kumar, 2012).

These applications of AI in academic writing can improve writing quality, and facilitate learning. “New writing tools, powered by Artificial Intelligence (AI) and available in mobile devices, are promising tools to assist students in learning and develop writing skills that are hard to learn from traditional training” (Nazari et al., 2021, p. 1).

## **2.9. Benefits and Challenges of Using Artificial Intelligence Tools in Academic Writing**

### **2.9.1. Benefits**

There are multiple benefits of utilizing AI in academic writing. According to Selim (2024), many AI writing tools like Grammarly, Quillbot, and ChatGPT are widely accessible and are commonly used by students (p. 14). Grammarly for instance, is a useful tool that can enhance writing quality by correcting grammar, spelling, and punctuation errors (p. 24). Also, he stated that beyond error correction, these tools offer other benefits such as saving time, enhancing clarity, giving suggestions, and providing feedback on written works (p. 25). As a result, these AI writing tools play a dual role in helping students improve their writing skills while also assessing their proficiency.

### **2.9.2. Drawbacks**

While Artificial Intelligence has many benefits in academic writing, there are also numerous disadvantages associated with its use. Rahayu et al. (2024) claimed, “AI could kill creativity, make writing styles more similar, and make people feel like they have no control over their writing” (p. 234). Simply, AI tools can lead to less creativity because people might use common suggestions instead of thinking of their ideas. This could make many writing

styles look the same. Also, relying too much on AI might make some people feel like they have no control over their writing.

Ventayen (2023) explained that ChatGPT's capability to generate essays raises concerns about facilitating plagiarism among students. Also, its ability to suggest essay topics increases the chance for students to find familiar subjects to write about. All of these can lead to a considerable threat to the integrity of essay submissions, particularly in higher education settings where such requirements are standard.

According to Dergaa et al. (2023) the response of the AI writing tools may not always be accurate (p. 616). Further, Balta (2023) argued, “The use of AI language assistance tools may blur the boundaries between original authorship and automated content generation, posing challenges to scholarly attribution and citation practices” (p. 52). In other words, this statement talks about how using AI tools for writing can make it harder to tell who wrote something, which can be a problem when giving credit to the original authors in academic writing. Therefore, it is about the challenges of properly citing and attributing sources when AI is involved in creating content.

## **2.10. Ethical Considerations**

In academic writing, it is important to follow several principles, including transparency, accountability, and authenticity. Transparency means that writers should be clear about how much they rely on AI in their writing, including the use of AI-generated content or language assistance tools. Accountability means that writers must take responsibility for ensuring the accuracy, integrity, and originality of the content produced with AI assistance, and they must follow academic rules and cite sources properly. Authenticity is about maintaining the writer's voice, style, and ideas in their writing to uphold academic honesty and the rights of the author (Balta, 2023, p. 51). Additionally, Malik et al. (2023) argued, “Students need to develop critical

thinking skills to evaluate the quality and reliability of AI-generated content and avoid over-reliance on automated tools” (p. 2).

## **Conclusion**

Artificial Intelligence tools have revolutionized academic writing by offering unprecedented efficiency and accuracy through natural language processing applications. While these tools offer numerous benefits, including spell-checking, grammar correction, and content generation, there are many challenges such as dependency and plagiarism. Therefore, some ethical considerations must be carefully taken into account. Nonetheless, when used responsibly, AI writing assistants can significantly enhance the writing process for educators, researchers, and students. Then exploring teachers and students perspectives about this phenomenon is essential to highlight truthful and helpful ideas for better understanding the Academic environment.

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## **Introduction**

In recent years, AI writing tools have become increasingly utilized among students. Consequently, this chapter represents the fieldwork of the current study which aims at exploring the perspectives of EFL teachers and students regarding the impact of artificial intelligence tools on academic writing. Therefore, to gain a deeper understanding of their opinions and insights on the matter, a carefully designed survey questionnaire was conducted with master one students at the Department of English, 08 Mai 1945 Guelma University. This practical part summarizes results from students' and teachers' questionnaires. It also includes the analysis and interpretation of the findings by SPSS software, which would help in answering the research questions and rejecting or confirming the hypothesis of the current study.

### **3.1. Description of students' Questionnaire**

The questionnaire is structured on the basis of the theoretical part and it is divided into three sections containing twenty (20) questions. Most of them are closed-ended which include Yes/No questions and multiple choice questions. Two (2) open-questions are given so participants answer freely using their own words. Furthermore, to ensure the reliability of the adapted questionnaire in the setting of this study, the data was inserted in the SPSS, as binary data, then Cronbach' Alpha was calculated concerning each question as a whole section. The results indicated that the questionnaire is reliable, with an Alpha coefficient of 0.75. The detailed results are presented in the appendix 3.

#### **3.1.1. Section one: General information.**

This section contains two (2) questions: (Q01) and (Q02) about students learning experience and level.

### **3.1.2. Section two: Students' perspectives towards Academic Writing.**

This section contains seven (7) questions: (Q03) to (Q09) about students' background on academic writing and the difficulties they encounter. Students were also asked about their experiences in academic writing and the challenges they faced before.

### **3.1.3. Section three: Students' perspectives towards Artificial Intelligence tools.**

This section contains eleven (11) questions: (Q10) to (20) about students' ideas and perceptions on AI tools and its use on their academic writing with their future expectations. It also includes questions about students' use, familiarity, satisfaction and effectiveness of AI tools on their academic writing with the perceived impact and predictions.

## **3.2. Aims of the questionnaire**

This questionnaire aimed to explore various experiences and beliefs of students concerning the academic writing and the use of AI tools on it. Moreover, it focused on the benefits of those tools and revealed the confronted challenges.

## **3.3. Administration of students' questionnaire**

The questionnaire was administrated at the English Department, 8 Mai 1945 Guelma University, to 118 first year master students during two days: May 6<sup>th</sup>, and May 7<sup>th</sup>, 2024. 100 printed questionnaires were delivered. 98 of them were received while and 20 were conducted online because at that period a set of events were taking place celebrating the historical events of "May 8<sup>th</sup>, 1945". It was also a period of quizzes, thus it was hard to find the entire needed sample.

## **3.4. Analysis of Results and Findings from the Students' Questionnaire**

### **Section One: General Information**

**Q01.** How long have you been studying English?

..... Years.

**Table 3.1**  
*years of studying English*

		Frequency	Percentage
Years	11	85	72,0
	12	25	21,2
	13	4	3,4
	14	3	2,5
	15	1	,8
	Total	118	100,0

As it is noticed in Table 3.1, the majority of the students (85) have been studying English for 11 years with a percentage of 72.0%. Additionally, a percentage of 21.2% was given to 12 Years and a percentage of 3.4% was given to 13 years. This indicates that they dropped a year or two in their academic career. Despite this, only 3 students (2.5%) wrote 14 years. Only a small percentage (0.8%) was given to one student who studied English for 15 years. This means that they failed three or four years in their academic career. Overall, the data suggests variations in the length of English study among students, with the majority studying for around 11 years.

**Q.02** How could you describe your level of English proficiency?

- a) Very good
- b) Good
- c) Average
- d) Bad
- e) Very bad

**Table 3.2**  
*Students' level*

		Frequency	Percentage
Level	Very good	20	16,9

Good	76	64,4
Average	22	18,6
Total	118	100,0

According to the results displayed in Table 3.2, 76 students reported that their level in English is good (64.4%). This implies that the majority of the participants have a good English level and this will enhance the reliability of the responses and the results. In addition, 18.6% of students claimed that they have an average level of English. Further, a very good level was selected by 20 students with 16.9%. As it is noticed, a high percentage of students are above average. Therefore, the variety in students' levels of English proficiency is likely to lead to varied responses in the questionnaire.

## **Section two:** Students' Perspectives towards Academic Writing.

**Q03.** Could you define the term academic writing?

**Table 3.3**

*Definition of academic writing*

	Frequency	Percentage
Definition writing used in academic disciplines characterized by a formal tone and adhering to scholarly conventions	3	2,5
formal writing for academic purposes	56	47,5
writing used in universities and colleges works like essays and research papers	9	7,6
piece of writing submitted to be evaluated	5	4,2
Well-structured and formal writing	3	2,5
writing used the appropriate knowledge	2	1,7
writing professionally and formally with focusing on details	1	,8
writing that needs to meet certain conditions	1	,8
different type of writing characterized by formality	1	,8
process of writing ideas gathered from credible sources respected by ethical dependencies	1	,8
writing for a higher position individual like teachers	2	1,7
writing in a proficient way	2	1,7
well-structured and formal writing for publication	1	,8
writing follows a specific formal method	2	1,7
not answered	28	23,7
nonfiction writing	1	,8



Total	118	100,0
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According to the findings manifested in Table 3.3, it is shown that 28 students have not answered this questionnaire with a percentage of 23.7%. The other students defined the term academic writing as follows: 56 students with a percentage of 47.5% defined it as formal writing for academic purposes. Despite this, 7.6% of students said that academic writing is used in universities and colleges as essays and research papers. It is defined by 5 respondents (4.2%) as a piece of writing submitted to be evaluated. A percentage of 2.5% claimed that it is a well-structured and formal writing. The other equal percentage (2.5%) explained that it is a sort of writing used in academic disciplines characterized by formal tone and adhered to scholarly conventions. Furthermore, four equal percentages of students (1.7%) defined it as writing using the appropriate knowledge, writing for higher position individuals like teachers, writing proficiently, and following a specific method. The other students had an equal percentage (0.8%) who defined it as: writing professionally and formally with focusing on details, it needs to meet certain conditions, different types of writing characterized by formality, process of writing ideas gathered from credible sources respected by ethical dependencies, well structured and formal writing for publication, and non-fiction writing.

**Q04.** How often are you asked to write academically?

- a) Always
- b) Often
- c) Sometimes
- d) Rarely
- e) Never

**Table 3.4**

*Students writing frequency*

Frequency	Percentage
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Frequency	Always	41	34,7
	Often	45	38,1
	Sometimes	28	23,7
	Rarely	4	3,4
	Total	118	100,0

The results in the table above show that the highest percentage (38.1%) of students are often asked to write academically. Following closely, 34.7% stated that they were always asked to write academically. A smaller portion, 23.7%, reported being asked to write academically sometimes. Lastly, only 3.4% of students mentioned that they rarely receive academic writing assignments. This suggests that a significant proportion of students are consistently engaged in academic writing tasks, while a minority rarely encounters such assignments.

**Q05.** Select the type of academic writing you are instructed to write. (You can choose more than one choice)

- a) Essay
- b) Report
- c) Research project

**Table 3.5**

*Academic writing types*

		Responses	
		frequency	Percentage
academic writing types	Essay	96	59,6%
	Report	25	15,5%
	Research project	40	24,8%

This analysis presents data on the types of academic writing assignments students are instructed to write. As the results presented in Table 3.5, the majority of respondents (59.6%) reported that they were instructed to assign essays, followed by research projects (24.8%) and reports (15.5%). This suggests that essays are the most common type of academic writing assignment, with research projects also being quite prevalent. Reports, while less common,

still make up a significant portion of assigned writing tasks. This indicates the diverse distribution of academic writing assignments among students.

**Q06.** Are you familiar with the features of academic writing?

a) Yes

b) No

**Table 3.6**

*Familiarity of features*

		Frequency	Percentage
Choices	Yes	109	92,4
	No	9	7,6
	Total	118	100,0

Based on the data provided in Table 3.32, it seems that a majority of respondents (92.4%) are familiar with the features of academic writing, while a small minority (7.6%) are not. This means that there is a high level of familiarity with academic writing features among the students. This suggests that the respondents have some background or experience in academic writing, which will contribute to the reliability of the results.

**Q07.** If yes, among the following features of academic writing, choose the ones that you are Familiar with. (You can choose more than one choice)

a- Complexity

b- Formality

c- Coherence

d- cohesion

e- Objectivity

f- Explicitness

g- Hedging

h- Evidence

**Table 3.7**

*Familiar features of academic writing*

Responses

		frequency	Percentage
Features of academic writing	Complexity	22	5,1%
	Formality	72	16,6%
	Coherence	90	20,7%
	Cohesion	85	19,6%
	Objectivity	80	18,4%
	Explicitness	27	6,2%
	Hedging	7	1,6%
	Evidence	51	11,8%

According to the results presented in Table 3.7, the analysis of the responses shows that Coherence has the highest percentage of familiarity among respondents with a percentage of 20.7%, followed closely by Cohesion at 19.6%. Objectivity and Formality also have relatively high percentages of familiarity with the percentages 18.4% and 16.6%, respectively. Additionally, Evidence falls in the middle range with 11.8% familiarity among respondents. On the other hand, explicitness has a low percentage of 6.2%), followed by Complexity which also has a relatively low percentage of familiarity (5.1%). Hedging has the lowest percentage of familiarity (1.6%). It appears that respondents are most familiar with features related to the organization and structure of academic writing, such as coherence and cohesion.

**Q08.** Do you find serious difficulties in academic writing?

a) Yes

b) No

**Table 3.8**

*Difficulty in academic writing*

		Frequency	Percentage
Choices	Yes	94	79,7
	No	24	20,3
	Total	118	100,0

According to the findings reviewed in Table 3.20, based on the data provided, it appears that a significant portion of respondents (79.7%) reported that they have serious difficulties in academic writing, while only 20.3% did not. This suggests that academic writing presents challenges for the majority of respondents.

**Q09.** If yes, what are the difficulties you face in academic writing? (You can choose more than one answer)

a) Vocabulary

b) Grammar

c) Cohesion

c) Coherence

d) Punctuation

e) Spelling

Other(s), would you please specify.....

**Table 3.9**

*Students' difficulties in academic writing*

			Responses	
			Frequency	Pourcentage
Difficulties of academic writing	Vocabulary		48	23,4%
	Grammar		42	20,5%
	Cohesion		35	17,1%
	Coherence		34	16,6%
	Punctuation		25	12,2%
	Spelling		18	8,8%
	Others		3	1,5%

As demonstrated in Table 3.5, Vocabulary was the most common difficulty cited by respondents, with 23.4% reporting it as a challenge in academic writing. Further, Grammar followed closely with 20.5% of respondents indicating it as a difficulty. Cohesion and coherence were also significant concerns, with 17.1% and 16.6% of respondents, the students facing challenges in these areas. Punctuation and spelling were mentioned by 12.2% and 8.8% of respondents indicating they are areas of difficulty. Only a small percentage (1.5%) cited another difficulty not listed in the options provided, which is a difficulty in ideas. This analysis highlights that a variety of linguistic and structural aspects contribute to the challenges faced in academic writing, with vocabulary and grammar being the most prominent areas of concern.

## Section Two: students' perspectives towards Artificial Intelligence tools

**Q10.** Are you familiar with the concept of “Artificial Intelligence (AI)”?

a) Yes

b) No

**Table 3.10**

*Familiarity of AI*

		Frequency	Percentage
choice	yes	118	100,0

According to the findings manifested in Table 3.10, the analysis of respondents' familiarity with the concept of Artificial Intelligence (AI) indicates that all participants, totaling 100%, are familiar with AI. This suggests a widespread awareness and understanding of AI among the surveyed sample.

**Q11.** If yes, which AI writing tools do you use the most? (You can choose more than one choice)

a) ChatGPT

b) Grammarly

c) Quillbot

d) Google translation

Other(s), would you please specify? .....

**Table 3.11**

*AI writing tools most used*

		Responses	
		frequency	Percentage
AI tools most used	Chatgpt	94	38,1%
	Grammarly	34	13,8%
	Quillbot	40	16,2%
	Google translation	55	22,3%
	Others	24	9,7%

The sample's most used AI tool Chatgpt ranked first (38.1%), followed by Google Translation (22.3%). Moreover, Quillbot ranked third (16.2%) and Grammarly was fourth (13.8%). At the same time, a considerable amount of participants (9.7%) chose others and

added Gemini (Google Bard), perplexity, Cloud, Reverso, My AI, Open Xchange (OX), Booklet and Capilot. Therefore, students are well informed about various AI tools.

**Q12.** What do you usually focus on while using AI writing tools? (You can choose more than one

Choice)

- a) Spelling and punctuation
- b) Grammar checking.
- c) Content generation
- d) Paraphrasing
- e) Translation
- f) Plagiarism checking

If other(s), please specify?.....

**Table 3.12**

*Students' focus while using AI*

			Responses	
			Frequency	Percentage
Students focus while using AI	Spelling and punctuation		24	9,3%
	Grammar checking		44	17,1%
	Content generation		68	26,5%
	Paraphrasing		58	22,6%
	Translation		29	11,3%
	Plagiarism checking		33	12,8%
	Others		1	0,4%

When asked about the focus of the participants while using AI tools, as Table 3.12 shows, Content generation appears to have been the most focused process (26.5%), closely followed by 22.6% of respondents who chose paraphrasing, then grammar checking (17.1%), besides a portion of 12.8% of respondents who chose plagiarism checking. However, one student (0.4%) opted for others and added summarizing; this means students use AI tools to serve their different purposes.

**Q13.** How often do you use AI tools?

- a) Always

- b) often
- c) Sometimes
- d) Rarely
- e) Never

**Table 3.13**  
*Frequency of using AI tools*

		Frequency	Percentage
Frequency	Always	29	24,6
	Often	39	33,1
	Sometimes	42	35,6
	Rarely	8	6,8
	Total	118	100,0

As indicated in Table 3.13, 35.6% of learners use AI tools sometimes; it shows that they are not attached to such technology. The next following 33.1% often use AI tools that they can be limited in their use, while 24.6% of students use AI tools always which means they are fully dependent on such technology. Additionally, a noticeable portion (6.8%) of the sample use AI tools rarely which means they are not fully reliant on it.

**Q14.** On a scale of 1 to 5, how would you rate the effectiveness of AI tools in academic writing quality?

1      2      3      4      5

Not effective at all      ○○○○○      Extremely effective

**Table 3.14**  
*AI writing tools' effectiveness*

		Frequency	Percentage
Scale	Not effective at all	3	2,5
	2	7	5,9
	3	46	39,0
	4	39	33,1
	Extremely effective	23	19,5
	Total	118	100,0



As displayed in Table 3.14 above, 39.0% think the effectiveness degree of AI tools is medium. This means students are aware that they are beneficial but have drawbacks that eliminate their effectiveness. In addition, 33.1% of the sample agreed on the fourth degree of effectiveness, while 19.5% claimed AI tools to be extremely effective. However, a considerable amount of 5.9% opted for the second degree of effectiveness. Lastly, only 2.5% of the sample declared this technology as not effective at all. Hence, different perceptions were noticed about AI tools' effectiveness.

**Q15.** According to your perspective, what are the advantages of utilizing artificial intelligence tools in academic writing? (You can choose more than one choice)

- a) Improving efficiency
- b) Enhancing the quality of writing
- c) Reducing errors
- d) Saving time
- e) Providing feedback
- f) Giving suggestions

Other(s), would you please specify.....

**Table 3.15**  
*Benefits of AI writing tools*

		Responses	
		frequency	Percentage
Benefits of using AI academic writing	Improving efficiency	37	11,2%
	Enhancing writing Quality	57	17,3%
	Reducing errors	66	20,0%
	Saving time	90	27,3%
	Providing feedback	28	8,5%
	Giving suggestions	52	15,8%

As shown in Table 3.15, 27.3% of the students chose saving time as the major benefit of such tools. 20.0% agreed on reducing errors, 17.3% of students selected enhancing writing

quality, while 15.8% of them agreed on giving suggestions, followed by 11.2% who believed it improved efficiency. Finally, a considerable percentage (8,5%) opted for providing feedback. This indicates that most students acknowledged the benefits of AI tools.

**Q16.** According to your perspective, what are the disadvantages of utilizing artificial intelligence tools in academic writing? (You can choose more than one choice)

- a) Decreased your creativity
- b) Provides Misleading information
- c) No control over your writing
- d) Difficult terms
- e) Non-accurate responses

Other(s), would you please specify .....

**Table 3.16**

*Drawbacks of using AI writing tools*

		Responses	
		frequency	Pourcentage
Drawbacks of Using AI in Academic Writing	Decreased creativity	86	39,6%
	Provides misleading information	41	18,9%
	No control over your writing	25	11,5%
	Difficult terms	37	17,1%
	Non accurate responses	26	12,0%
	Others	2	0,9%

As it was mentioned in the Table3.16, more than one-third of the sample (39.6%) responded in favor of decreased creativity as a drawback. 18.9% believed that AI tools provide misleading information. Close percentage (17.1%) saw difficult terms as a disadvantage. 12.0% said AI tools give inaccurate responses. Finally, 0.9% opted for others, and added other drawbacks such as the absence of source and reliability. This indicates that students are aware of the negative side of using AI tools in their academic writing.

**Q17.** Do you feel prepared to use AI responsibly in your academic writing work?

- a) Yes
- b) No

**Table 3.17***Using AI tools responsibly in students' work*

		Frequency	Percentage
Choices	Yes	84	71,2
	No	34	28,8
	Total	118	100,0

When asked about their readiness to use AI tools responsibly in their future academic work, as Table 3.17 shows, the majority of the students (71.2%) answered “Yes”, while only 28.8% stated “No.”

**Q18.** How satisfied are you with the use of artificial intelligence tools for academic writing purposes?

- a) Very dissatisfied
- b) Dissatisfied
- c) Neutral
- d) Satisfied
- e) Very satisfied.

**Table 3.18***Students satisfaction while using AI tools for academic writing*

		Frequency	Percentage
degree	Very dissatisfied	10	8,5
	Dissatisfied	8	6,8
	Neutral	46	39,0
	Satisfied	44	37,3
	Very satisfied	10	8,5
	Total	118	100,0

The above Table 3.18 shows that 39.0% of learners are neutral with the use of AI tools on academic writing. This denotes that these learners were unsure about their feelings about whether to benefit from the brilliant services or to feel wrong for its potential drawbacks. Closely similar 37.3% of learners declared that they were satisfied with its use. This implies that these learners enjoy AI tools. From another point, 6,8% of students showed dissatisfaction

with the use of this technology, which denotes the fear of the respondents from AI challenges, Moreover, 8,5% were very dissatisfied which means they may have had a bad experience with AI writing tools in their academic writing. Similar percentage (8, 5%) was very satisfied due to the facilities this tools offers.

**Q19.** Do you think artificial intelligence tools could replace traditional writing assistance methods?

a) Yes

b) No

**Table 3.19**

*Thoughts on replacing AI with traditional methods*

		Frequency	Percentage
Choices	Yes	77	65,3
	No	41	34,7
	Total	118	100,0

As demonstrated in Table 3.19, the majority of students (65,3%) thought that AI tools could replace traditional assistance methods. This suggests that a significant portion of the student population sees the potential benefits of AI technology in enhancing various aspects of their academic work. In contrast 34.7%thought that AI could not replace traditional assistance methods. This indicates that there is a notable segment of students who value traditional methods and have concerns about the reliability or ethical implications of relying too heavily on AI technology in their writing.

**Q20.** What guidelines do you think should be in place for using AI in academic writing?

**Table 3.20**

*Role of AI tools according to students*

		Frequency	Percentage
Role	Essential	55	46,6
	Limited	56	47,5
	Not necessary	7	5,9
	Total	118	100,0

Based on the provided data, it is evident that students perceive the role of AI tools in their academic lives differently. 46.6% of students viewed AI tools as essential, indicating that nearly half of the student population believed that AI tools play an important role in their educational journey. This suggests that these students rely heavily on AI tools for various aspects of their academic work. On the other hand, 47.5% of students perceived AI tools as limited in their role, implying that they acknowledge the usefulness of AI tools to some extent but may not rely on them as heavily as the first group. A small percentage of students (5.9%) considered AI tools as not necessary. This indicates that there is a minority of students who either do not find AI tools useful or prefer traditional methods for their academic tasks.

**Q20.** What guidelines do you think should be in place for using AI in academic writing?

**Table 3.21**

*Guidelines provided*

		Frequency	Percentage
Choices	Not answered	42	35,59
	Answered	76	64.41
	Total	118	100,0

Table 3.20 above reveals that 35.59%, did not answer this question. While the other 64.41%, provided a variety of insights regarding the use of AI in academic writing. Instead, participants emphasized the importance of conscious and controlled utilization of AI, particularly in asking precise questions and maintaining ethical standards in writing to prevent plagiarism and uphold academic integrity.

AI was viewed as a helpful tool but not as a substitute for independent thinking and writing. Suggestions included using AI to enhance writing style, preparing outlines, checking grammar, and gathering additional information, but not to simply copy and paste content. It was recommended to utilize AI only when necessary, also they emphasized avoiding errors and misleading information that are provided by AI. Additionally, Learners must be well acquainted with how AI chat bots work, and which type of questions they best respond to.

Furthermore, one participant ensured simplification of the information provided by AI tools since most of the time they provide sophisticated language. Overall, the general agreement among participants was to use AI as a complementary tool in academic writing rather than relying on it exclusively. It means to limit the role of AI during writing.

### **3.5. Summary of Results and Findings from students' Questionnaire**

Based on the precedent findings gathered from the students' questionnaire, the analysis of the first section revealed that the majority of the students have been studying English for 11 years. Moreover, more than half of students claimed that they had a good English level. Other students said that they had a very good level and average level. Therefore, this variety in students' levels could lead to varied responses in the questionnaire.

According to the findings in the second section which was entitled “ Students' Perspectives towards Academic Writing,” approximately half of the students have defined academic writing as formal writing for academic purposes used in universities and colleges like essays and research papers. They also defined it as the writing used in academic disciplines characterized by formal tone and adhered to scholarly conventions. This indicates that those students who have defined the term academic writing know the exact meaning, and this helped in enhancing the reliability of the responses.

Additionally, the highest percentage of students stated that students are often asked to write academically. Other students stated that they were always asked to write academically. Also, another small portion claimed that they sometimes write academically and only a few students reported that they rarely receive academic writing assignments. This suggests that a considerable number of students regularly participate in academic writing assignments, whereas a minority encounter such assignments. Thus, they are assigned essays, followed by research projects and reports. More precisely, essays were the most common type of academic writing assignment that students were instructed to write. Besides, the majority of respondents

were familiar with the features of academic writing. This means that there was a high level of familiarity with academic writing features among the students. The features that have the highest familiarity among students were coherence, cohesion, objectivity, and formality. Followed by Evidence that falls in the middle range. On the other hand, students have a low familiarity with the features Explicitness, and Complexity. While only a few respondents had a familiarity with the feature Hedging.

Based on the data provided in this section, it appeared that a significant portion of respondents reported that they had serious difficulties in academic writing, while only a few of them did not. Vocabulary and Grammar were the most common difficulty cited by respondents. Cohesion and Coherence were also significant concerns, and students faced challenges in these areas. Punctuation and Spelling were mentioned and a few students had difficulty in finding ideas.

In the last section of this questionnaire entitled “Students’ perspectives towards Artificial Intelligence tools,” the analysis of respondents' familiarity with the concept of Artificial Intelligence (AI) indicated that all participants were familiar with AI. More precisely, the most used AI tool by students in their writing was ChatGPT; it ranked first, followed by Google Translation. Quillbot ranked third and Grammarly fourth. Many other students have mentioned other tools that they use including Gemini (Google Bard), perplexity, cloud, Reverso, My AI, Open Xchange (OX), Booklet, and Capilot. Therefore, students were well informed about various AI tools. Besides, when asked about the focus of the participants while using AI tools, Content generation appeared to have been the most focused process, closely followed by other respondents who chose Paraphrasing, then Grammar Checking and Plagiarism Checking. However, one student declared the focus on summarization, this means that students use AI tools to achieve their different purposes.

As indicated in the findings, many of the students declared that they use AI tools sometimes in their writing. Some admitted that they often used it and many others were using it always, while only a few of them rarely use it. Moreover, the highest percentage of students reported that AI tools had a moderate level of effectiveness in improving academic writing quality. Following approximately, other students indicated that AI tools were highly effective in improving academic writing quality.

Concerning the benefits of AI in writing, students emphasized saving time as the major benefit of such tools, and then they emphasized reducing errors and enhancing writing quality. Other students agreed to give suggestions, improve efficiency, and provide feedback. However, students emphasized the drawbacks of utilizing AI in writing including decreased creativity, providing misleading information, difficult terms, inaccurate responses, and added other drawbacks such as the absence of sources and reliability. When asked about the students' readiness to use AI tools responsibly in their future academic work, the majority of the students answered Yes, while many others stated No.

Furthermore, the highest percentage of students said that they were neutral with the use of AI tools in academic writing. Followed by an approximate percentage of students who stated that they were satisfied with its use. Also, the majority of students thought that AI tools could replace traditional assistance methods; this suggested that those students saw the potential benefits of AI in enhancing their academic work. In contrast, other students thought that AI could not replace traditional assistance methods. Besides that, nearly half of the students viewed AI tools as essential. While the others (nearly half of students) perceived AI tools as limited in their role.

Lastly, the majority of participants have provided a variety of insights regarding the use of AI in academic writing. More precisely, participants emphasized the importance of conscious and controlled utilization of AI, particularly in asking precise questions and



maintaining ethical standards in writing to prevent plagiarism and uphold academic integrity. AI was viewed as a helpful tool but not as a substitute for independent thinking and writing. Additionally, learners must be well acquainted with how AI chatbots work, and which type of questions they best respond to. Overall, they emphasized limiting the role of AI in writing.

### **3.6. Description of Teachers' Questionnaire**

The current research questionnaire was established according to the various concepts and ideas covered in the theoretical chapters. It mainly consisted of three basic sections with a total of fourteen questions. Most of the questions were close-ended in nature (multiple-choice and yes or no questions). Therefore, this would facilitate both answering and analyzing them. Additionally, a few questions were open-ended questions that required short responses and other suggestions, which would minimize ambiguities and generate accurate responses. Additionally, to ensure the reliability of the adapted questionnaire in the setting of this study, the data was inserted in the SPSS, as binary data, then Cronbach' Alpha was calculated concerning each question as a whole section. The results indicated that the questionnaire is reliable, with an Alpha coefficient of 0.81. The detailed results are presented in the appendix 4.

#### **3.6.1. Section One: General Information (Q1-Q3)**

This section contained three questions that were aimed at gathering information about teachers' background information. It consisted of questions about teachers' qualifications, fields of specialty, and years of teaching English at the university.

#### **3.6.2. Section Two: Teachers' perspectives on academic writing (Q4-Q8)**

The second section aimed at investigating the viewpoints of EFL teachers about the academic writing of their students. More precisely, it comprised questions concerning academic writing components, types of students' writing assignments, and students' writing difficulties. Beginning with question number four (4), they are asked to describe their students' level in their writing. Additionally, in question number five (5), teachers were asked to indicate

the frequency of assigning writing assignments to their students. Moreover, in question number six (6), teachers were required to choose the type(s) of academic writing assignment they typically assign to their students. Further, in question number seven (7), they were asked to choose the writing components that they focus on when correcting students' writing assignments. Besides, in question number eight (8) they were required to specify the writing difficulties that students encounter when completing their writing assignments.

### **3.6.3. Section Three: Teachers' perspectives toward the impact of AI tools on Academic Writing (Q9-Q14)**

This section of the questionnaire aimed at investigating teachers' perspectives on the impact of AI tools on Academic Writing. Firstly, in question number nine (9), teachers were requested to specify how familiar they are with the concept of Artificial Intelligence tools for academic writing assistance. Secondly, in question number ten (10), they were asked to say yes or no if they differentiate between students' original writing and content generated by AI tools. Thirdly, in the eleventh question (11), participants were requested to choose the benefits of utilizing artificial intelligence tools in academic writing. Fourthly, in question number twelve (12), participants were required to state the drawbacks of utilizing artificial intelligence tools in academic writing. Besides, via question number thirteen (13), teachers were asked to specify how satisfied they are with the use of artificial intelligence tools for academic writing purposes. This section ends with question number fourteen (14), teachers were required to say they support their students in developing a balance between using artificial intelligence tools and developing their writing skills.

### **3.7. Aims of Teachers' Questionnaire**

The current questionnaire aimed at:

- 1) Exploring the difficulties that face EFL students in their academic writing.

- 2) Figuring out the extent to which EFL teachers are familiar with the concept of Artificial Intelligence tools for academic writing assistance.
- 3) Revealing EFL teachers' opinions regarding the benefits and drawbacks of using AI in academic writing.
- 4) Exploring the satisfaction of teachers regarding the use of artificial intelligence tools for academic writing purposes.

### **3.8. Administration of Teachers' Questionnaire**

The current questionnaire was administered to fifteen EFL English teachers who are teaching master one students at the Department of Letters and English, at 08 Mai 1945 Guelma University. The questionnaire took place from May 4<sup>th</sup> to May 18<sup>th</sup>, 2024. As promised, teachers' answers remained highly confidential and were used for academic purposes. Moreover, the language used in the questionnaire was straightforward, simple, and clear to avoid any ambiguity. Therefore, an adequate number of participants contributed with valuable responses which were crucial for ensuring the research's validity.

### **3.9. Analyzing Data from the Questionnaire for the Teachers**

#### **Section One: General Information**

**Q01.** What Degree do you hold?

- a) Magister degree.
- b) Ph.D. degree.
- c) Master degree.

**Table 3.22***The teachers' degree*

		Frequency	Percentage
Degree	Magister degree	6	40,0
	Master degree	1	6,7
	PhD degree	8	53,3
	Total	15	100,0

The results obtained from Table 3.22 revealed that more than half of the teachers (53.3%) hold a Ph.D. degree, a notable portion(40.0%) hold a Magister degree, and only a small percentage (6.7%) hold a master's degree. Based on their responses, it was demonstrated that the qualified individuals are highly present, with the presence of some novice teachers within the sample. Hence, they would provide reliable and credible data.

**Q02.** What is your field of specialty?

- a) Linguistics and language teaching
- b) Literature
- c) Civilization
- d) Translation

**Table 3.23***Teachers' specialty*

		Frequency	Percentage
Specialty	Linguistics and languageteaching	10	66,7
	Literature	3	20,0
	Civilization	2	13,3
	Total	15	100,0

According to the findings demonstrated in Table 3.23, 60.0% of respondents are specialized in linguistics and language teaching, 20.0% are specialized in literature, (13,3%) are specialized in civilization, and (6.7%) are specialized in translation. This implies that

various teachers with expertise in different specialties participated in responding to the questionnaire, thereby strengthening the trustworthiness and credibility of the gathered data.

**Q03.** How long have you been teaching English at university? ..... Years.

**Table 3.24**

*Teaching experience*

		Frequency	Percentage
Years	1	1	6,7
	7	1	6,7
	10	2	13,3
	11	1	6,7
	12	2	13,3
	13	1	6,7
	14	1	6,7
	15	1	6,7
	16	2	13,3
	19	2	13,3
	20	1	6,7
	Total	15	100,0

According to the above-mentioned results, the majority of teachers (86.6%) have an experience from 10 to 20 years. While 13.4% of them have experienced teaching English between 1 and 7 years. Therefore, based on these results, it can be concluded that the sample comprises highly experienced educators who have gathered significant knowledge about the teaching and learning process.

**Section Two:** Teachers' perspectives on academic writing

**Q04.** How can you describe your students' level in their writing?

- a) Very good
- b) Good
- c) Average
- d) Bad
- e) Very bad

**Table 3.25***Students' level according to teachers*

		Responses	
		Frequency	Pourcentage
Level	Very good	1	6,7
	Average	11	73,3
	Bad	3	20,0
	Total	15	100,0

As noticed, the majority of teachers (73.3%) said that their students have an average level of EFL writing. This suggests that most students, according to the informants, perform at a moderate level in their writing skills. Additionally, 20.0% of teachers revealed that their students have a bad level. Furthermore, 6.7% of teachers mentioned that only a few students have a very good level in their writing.

**Q05.** How often do you ask your students to provide writing assignments?

- a) Always
- b) Often
- c) Sometimes
- d) Rarely
- e) Never

**Table 3.26***Frequency of providing writing assignments*

		Responses	
		Frequency	Percentage
Frequency	Always	4	26,7
	Sometimes	7	46,7
	Rarely	4	26,7
	Total	15	100,0

As shown in Table 4.5, the majority of teachers (46.7%) claimed that they sometimes give their students writing assignments, indicating an occasional use of writing assignments in their teaching, suggesting a consistent integration of writing tasks into their curriculum. Further, four teachers (26.7%) responded that they always give their students writing assignments. Also, the same percentage (26.7%) stated that they rarely assign writing assignments to their students, highlighting a minimal role of writing tasks in their instructional activities. Consequently, this indicates variability in the frequency of writing assignments given by teachers. Additionally, it means that teachers regularly include writing assignments in their teaching methods. This likely helps them understand their students' abilities and areas for improvement in writing.

**Q06.** In your teaching career of Master One students, what type of academic writing assignment do you typically assign to your students? (You can choose more than one answer)

- a) Essays
- b) Research project
- c) Reports

Other(s), please specify.....

**Table 3.27***Types of academic writings provided*

		Responses	
		Frequency	Percentage
Academic writing types provided	Essay	11	52,4%
	Report	6	28,6%
	Research Project	4	19,0%

According to the findings displayed in Table 3.27, 45.8% of the respondents selected a research project. 37.5% of teachers have selected reports. 16.7% of teachers selected essays. This highlights the variety of writing assignments used by teachers for master one students.

**Q07.** When correcting your students' writing assignments, what do you focus more on? (You can choose more than one answer)

- a) Grammar
- b) Vocabulary
- c) Spelling and punctuation
- d) Coherence and cohesion
- e) Content

If other(s), please specify .....

**Table 3.28***Features of Academic Writing*

		Responses	
		Frequency	Percentage
Features of Academic Writing	Grammar	14	24,6%
	Vocabulary	10	17,5%
	Spelling and punctuation	12	21,1%
	Coherence and cohesion	10	17,5%
	Content	11	19,3%



The analysis of Table 3.28 indicates that 24.6% of respondents concentrate on grammar, while 21.1% of them focus on spelling and punctuation. This means that they focus more on linguistic accuracy. Additionally, there is a significant attention given to content (19.3%). Moreover, Vocabulary (17.5%) and coherence/cohesion (17.5%) are also important reflecting a desire to enhance students' language proficiency and the logical flow of their writing.

**Q08.** In your opinion, which of the following writing difficulties do students encounter when completing their writing assignments? (You can choose more than one answer)

- a) Lack of vocabulary
- b) Poor Grammar knowledge
- c) Spelling and punctuation
- d) Coherence and cohesion

If other(s), please specify.....

**Table 3.29**

*Difficulties encountered by students according to teachers*

		Responses	
		Frequency	Percentage
Difficulties of students	Lack of vocabulary	10	22,2%
	Poor grammar knowledge	13	28,9%
	Spelling and punctuation	11	24,4%
	Coherence and cohesion	10	22,2%
	Others	1	2,2%

This question shed light on the kind of obstacles students encountered with writing. Teachers were asked to pick up the most persistent problems their students had. According to the results, 28.9% of the sample declared poor grammar knowledge as the major difficulty. Then the next portion (24.4%) opted for spelling and punctuation, while 22.2% chose the lack of vocabulary. The same portion of informants (22.2%) selected cohesion and coherence. One of the informants (2.2%) opted for “others”. S/he added critical and analytical thinking. On the whole, these results show that many problems affect students' writing.

**Q09.** How familiar are you with the concept of Artificial Intelligence tools for academic writing assistance?

### Table 3.30

		Frequency	Percentage
Scale	Not familiar at all	2	13,3
	2	1	6,7
	3	4	26,7
	4	3	20,0
	Extremelyfamiliar	5	33,3
	Total	15	100,0

**Q10.** Do you differentiate between students' original writing and content generated by AI tools?

- ### Table 3.30.1

		Frequency	Percentage
Opinions	yes	15	100,0

81

-If yes, have you noticed an increase in students using artificial intelligence tools in their academic writing assignments?

- a) Yes                      b) No

**Table 3.30.2**

*Teachers who notice an increase*

		Responses	
		Frequency	Percentage
Opinions	Yes	15	100,0

Following the previous question (Q10) where all teachers could differ between human and AI writing. Also 100% of teachers noticed an increase in the number of students using AI tools. As all teachers could differentiate between human and AI writing they are also aware of the increase in the number of students using AI.

**Q11.** According to your perspective, what are the benefits of utilizing artificial intelligence tools in academic writing? (You can choose more than one choice)

- a) Increased accessibility for students with diverse learning needs
- b) Improved efficiency
- c) Improved clarity
- d) Enhanced grammar
- e) Learner's autonomy
- f) Improved writing quality
- g) Enhanced productivity

If other(s), please specify.....

**Table 3.31***Benefits of using AI tools*

		Responses	
		frequency	Percentage
Benefits of using AI tools	Increased accessibility for students with diverse learning needs	4	14,8%
	Improved efficiency	4	14,8%
	Improved clarity	4	14,8%
	Enhanced grammar	3	11,1%
	Learners autonomy	2	7,4%
	Improved writingskills	7	25,9%
	Enhanced productivity	2	7,4%
	Others	1	3,7%

Table 3.31 above indicates teachers' answers concerning the benefits they mostly notice in their students. Accordingly, 25.9% of teachers claimed that AI improved writing skills. Then 14.8% opted for AI to increase accessibility for students with diverse needs. The same portion of teachers (14.8%) admitted that it improved efficiency. Also the same share (14.8%) opted for improved clarity. The next percentage of teachers (11.1%) agreed that AI-enhanced grammar. While 7.4% chose the advantage of learners' autonomy. The same percentage 7.4% admitted that AI enhanced productivity. Finally, 3.7% of participants selected others and added that AI gave more precise data. These results showed that AI tools have a beneficial impact on students' academic writing according to the teachers' perspectives.

**Q12.** According to your perspective, what are the drawbacks of utilizing artificial intelligence tools in academic writing? (You can choose more than one choice)

- a) Reliance on AI tools over critical thinking skills
- b) Potential for plagiarism or academic dishonesty
- c) Lack of understanding of writing principles and mechanics
- d) AI tools might make all writing look the same, taking away students' ability to be unique and creative
- e) The use of AI tools may discourage students from seeking feedback or guidance from teachers

If other(s), please specify.....

**Table 3.32**

*Drawbacks of using AI tools*

		Responses	
		Frequency	Percentage
Drawbacks of using AI tools	Reliance on AI tools over critical thinking skills	13	21,3%
	Potential for plagiarism or academic dishonesty	13	21,3%
	Lack of understanding of writing principles and mechanics	13	21,3%
	AI tools may make all writings look the same	13	21,3%
	Discourage students from seeking feedback or guidance from teachers	8	13,1%
	Others	1	1,6%

In response to the question on the drawbacks of utilizing AI in academic writing, 21.3% of teachers believed that learners rely on AI tools over critical thinking skills. The same portion of respondents (21.3%) chose the potential for plagiarism or academic dishonesty. In addition, the same share (21.3%) opted for the lack of understanding of writing principles and mechanics. Besides, an equal number (21.3%) declared that AI tools may make all the writings look the same. Moreover, 13.1% of participants agreed on the drawback of discouraging students from

seeking feedback or guidance from their teachers. Lastly, one teacher (1.6%) selected others and added another drawback related to the impossibility to check the reliability of the information. According to these results, it can be understood that AI has various drawbacks that affect students' academic writing according to teachers' perspectives.

**Q13.** How satisfied are you with the use of artificial intelligence tools for academic writing purposes?

- a) Very dissatisfied
- b) Dissatisfied
- c) Neutral
- d) Satisfied
- e) Very satisfied

**Table 3.33**

*Teachers satisfaction*

		Frequency	Percentage
Degree	Very dissatisfied	4	26,7
	Dissatisfied	9	60,0
	Neutral	2	13,3
	Total	15	100,0

According to the findings presented, more than half of the participants (60.0%) were dissatisfied with the use of AI tools for academic writing purposes. 26.7% of the respondents were very dissatisfied. Then, some teachers (13.3%) stood neutral. However, no one was satisfied or very satisfied among the sample. This implies that teachers' perspective on the use of such tools is negative despite the advantages the tools give to the students.

**Q14.** How do you support students in developing a balance between using artificial intelligence tools and developing their academic writing?

Almost all the teachers (99.85%) offered varied beneficial supports for their students to balance between using AI tools and develop their academic writing as follows:

- 0.3% of them recommend their students not to use AI at all.
- Through improving their critical thinking skills and teaching them about the importance of learning the basics of academic writing.
- I always advise my students to take only information and data but I insist on them to paraphrase each detail taken from AI applications. When they come to the classroom they have to read their assignments to check.
- I advise my students to rely on such tools after fulfilling their assignments and not before for the sake of impression and quality enhancement and not to rely on them negatively.
- Students use AI tools without thinking. They just copy and paste. If they use them consciously aiming to learn more about correcting errors. It would be more effective. In terms of writing students can use AI tools to develop an outline to proofread to consider coherence and to find some supporting ideas.
- By forcing them to write in class to show their mistakes.
- I always advise my learners to use AI smartly. By considering these tools as a helper and means to simplify the work but not as a unique source of information.
- I always encourage them to use these tools to enhance the quality and quantity of what they write. However, I ask them to make sure they read carefully and make a literature review before they accept the ideas suggested by AI. I also drive their attention to the fact that total reliance on AI may give them a fake idea about their real writing capabilities in terms of form, style and content.
- Students should rely on themselves to enhance their academic level in general and writing in particular, and rely on AI only to check what is written and how to use it.
- AI tools should be only a guide and facilitator, not the main tool. Autonomy is needed as well as self-reliance.

- To be autonomous and rely 50% on AI.
- Do not rely on AI only. Write and use your competencies / try to create meaning in different contexts

### **3.10. Summary of Results and Findings from Teachers' Questionnaire**

The first section of this questionnaire aimed at gathering general information about teachers. Therefore, results revealed that more than half of teachers hold a Ph.D. degree. Also, more than half of them are specialized in linguistics and language teaching. Further, the majority of teachers have an experience of more than 10 years. Thus, all of these results would lead to enhance the reliability of responses.

Based on the results of the second section entitled "Teachers' Perspectives on Academic Writing," the majority of teachers claimed that their students had an average level of EFL writing. Additionally, there was variability in the frequency of writing assignments given by teachers. It means that teachers regularly included writing assignments in their teaching methods. This could help them understand their students' abilities in writing. Furthermore, teachers reported that they gave many writing assignments to their students such as essays, research projects, and reports. This indicated the variety of writing assignments used by teachers for master one students. For the correction of students' writings, teachers claimed that they focused more on grammar, spelling, and punctuation, than they focused on vocabulary, coherence, and cohesion. On the other hand, teachers have mentioned many difficulties that students encounter when completing their writing assignments including poor grammar knowledge as the major obstacle, then spelling and punctuation followed by lack of vocabulary, cohesion, and coherence; they also added critical and analytical thinking.

In the last section of the teachers' questionnaire, entitled "Teachers' perspectives toward the impact of AI tools on Academic Writing," it has been deduced that the majority of teachers were familiar with the concept of AI in different degrees. Besides, all teachers admitted that



they could differ between human and AI writings. All teachers have declared that they noticed an increase in the number of students using AI tools in their writing. Teachers said that AI had many benefits in students' academic writing such as: increasing accessibility for students with diverse needs, improving clarity, enhancing grammar, efficiency, learner's autonomy, enhancing productivity, and giving more precise data. This means that AI tools had a beneficial impact on students' academic writing according to teachers' perspectives. However, teachers claimed that AI also has many disadvantages in students' writing. Teachers agreed that learners relied on AI tools over critical thinking skills. Also, AI directed to the potential for plagiarism or academic dishonesty. In addition, it led to a lack of understanding of writing principles and mechanics. Besides, others declared that AI tools may make all the writings look the same and they agreed on the drawback of discouraging students from seeking feedback or guidance from their teachers. Lastly, another drawback was that students cannot check the reliability of the information. According to these results, AI has different drawbacks that affect students' academic writing according to the teachers' perspectives. For the satisfaction of teachers towards AI, more than half of the participants were dissatisfied with the use of AI tools for academic writing purposes. A small portion of the respondents were very dissatisfied with it. Some others with a very small number claimed that they were neutral.

Lastly, almost all the teachers offered varied beneficial supports for their students to balance between using AI tools and develop their academic writing. Teachers declared that learners must use AI smartly by considering these tools as helpers and means to simplify the work but not as a unique source of information. They ensured that the use behind using these tools was to enhance the quality and quantity of what they write. Besides, they advised their students to make sure they read carefully and make a literature review before they accept the ideas suggested by AI. Autonomy is needed as well as self-reliance. One of the teachers said

that students should rely on such tools after fulfilling their assignments and not before for the sake of impression and quality enhancement and not to rely on them negatively.

### **3.11. Pedagogical Implications and Recommendations**

After conducting a detailed practical analysis, it is clear that the findings have significant pedagogical implications for EFL students regarding the impact of Artificial Intelligence tools on academic writing, for EFL teachers regarding the balance between writing powered by AI tools, and students' authentic writing, and for future researchers interested in exploring a similar topic. These implications aim to improve the practical aspects of the research and deepen the personal understanding of the subject being studied.

Academic writing is considered as writing in another culture due to the different styles and language the learner must provide in his writing. In this essence, AI tools prove to overcome the difficulties faced by students while also these tools possess potential drawbacks. On the one hand, the frequent use of diverse writing assignments by teachers (essays, research projects, and reports) help students practice different academic writing. This variety can support the development of good academic writing ability in students. By practicing different forms of writing, students can improve their ability to articulate thoughts clearly and cohesively in various contexts.

On the other hand, Teachers' focus on correcting grammar, spelling, and punctuation is another critical aspect of enhancing academic writing. These foundational elements are essential for producing clear and professional writing. Emphasizing these areas helps students develop accuracy and attention to detail, which are crucial for academic success. Moreover, Poor grammar, limited vocabulary, and issues with cohesion and coherence are frequently cited by both teachers and students. These challenges suggest the need for targeted instructional interventions. Grammar exercises, vocabulary-building activities, and structured writing prompts that focus on coherence and cohesion can help students overcome these obstacles.

Furthermore, difficulties with critical and analytical thinking in writing highlight the need for pedagogical strategies that encourage deeper analysis and synthesis of ideas. Teachers can design assignments that require students to engage in critical evaluation and argumentation, thereby fostering higher-order thinking skills.

Nevertheless, the integration of AI tools into the writing process offers both opportunities and challenges. The findings indicated that both teachers and students recognized the benefits of AI tools, such as improved grammar, increased efficiency, and enhanced accessibility. These tools can assist students in producing higher-quality writing and managing their time more effectively. For instance, AI-powered grammar checkers can help students identify and correct errors, leading to cleaner and more polished final drafts.

However, there are significant concerns regarding the drawbacks of AI tools. Teachers express worries about the potential for plagiarism, reduced creativity, and a lack of understanding of writing principles. These concerns suggest the need to guide students on the ethical and effective use of AI tools. It is essential to emphasize that AI should be a supplement to, rather than a replacement for, critical thinking and original writing.

Moreover, to maximize the benefits of AI tools while mitigating their drawbacks, a balanced approach is necessary. Teachers recommend that students use AI tools as aids, not as primary sources of information. This approach involves teaching students to critically evaluate AI-generated content and to use AI for specific tasks such as grammar checking rather than content generation. On the other hand, fostering learner's autonomy is also crucial. Students should be encouraged to complete their assignments independently before using AI for refinement. This practice ensures that students develop their ideas and writing skills first, and then use AI tools to enhance, rather than replace, their work.

In the field of higher education, teachers need to stay updated about recent and newly emerging teaching methods and techniques. In this digital age, digital programs play a crucial

role in fostering advancements in language skills, particularly academic writing. Hence, given the widespread familiarity of students with various AI tools, integrating AI literacy into the curriculum is essential. Teachers should teach students how to understand the capabilities and limitations of AI tools, including how to ask precise questions and interpret AI-generated responses. This knowledge will enable students to use AI tools more effectively and ethically. In addition, maintaining academic integrity is another critical aspect of using AI tools. Educators must emphasize the ethical use of AI, reinforcing the importance of academic integrity and the consequences of plagiarism. By promoting responsible AI use, teachers can help students navigate the ethical complexities of AI in academic writing.

Concerning future researchers who are interested in investigating the same or a similar topic, the following are some pedagogical recommendations and suggestions that can be taken into consideration:

- It is recommended to undertake an experimental study to further explore the current issue. This examination seeks to offer additional insights and a deeper understanding of the topic under investigation.
- It is suggested to carry out a similar study with a different focus. This study examined various AI tools in general. Hence, future researchers can explore a specific AI tool.
- This study examined academic writing in general. Thus future researchers can explore specific types like literature review, etc.

### **3.12. Limitations of the Study**

Several challenges faced the researchers during this study. Some of these obstacles include:

- Since the topic of research is a new one, it was difficult to find reliable and authentic sources.

- The researchers struggled to assemble a sufficient number of students because some of them refused to answer the questionnaire.
- Some of the students refused to provide other suggestions and to answer the last question that is related to giving their opinions and advice.

## **Conclusion**

This chapter discussed the practical elements of the study. It focused primarily on the analysis and interpretation of the results. Therefore, the analysis of questionnaires of teachers and students highlighted the mixed impact of AI tools on academic writing. While AI enhances accessibility, efficiency, and grammatical accuracy, there is a concern over its potential to reduce critical thinking and increase academic dishonesty. Teachers and students appreciate the benefits of AI, such as time savings and error reduction, but are careful about its drawbacks, including reduced creativity and unreliable information. The general agreement emphasizes a careful use of AI, suggesting it should complement but not replace traditional academic skills. The overall opinion supports a balanced integration of AI, maintaining high standards of academic integrity and fostering independent critical analysis.

## **General Conclusion**

The current study aimed to thoroughly explore EFL teachers and students' perspectives on the impact of AI tools on academic writing. It also sought to delve into the research topic both theoretically and practically to provide answers to the research questions and test its hypotheses. Therefore, the research was divided into three chapters: two theoretical and one practical. The theoretical chapters focused on examining each variable and providing detailed descriptions of related concepts, factors, and ideas. The practical chapter was designed to answer the research questions and achieve the objectives of the study, by using one data-gathering tool: the questionnaire.

To evaluate the impact of using AI on academic writing, it was necessary to emphasize both the benefits and drawbacks of this technology. Accordingly, one-hundred eighteen (118) questionnaires were administered to master one students at the Department of Letters and English Language at the University of 08 Mai 1945 Guelma. Ninety-seven (97) were in hand and twenty-one (21) were delivered online. Additionally, to figure out EFL teachers' perceptions, attitudes, and opinions regarding the impact of AI tools on academic writing, fifteen (15) questionnaires were administered to their teachers, fourteen (14) were in hand and one (1) was online. Both questionnaires were collected and analyzed by using SPSS software.

The findings from the data analysis have greatly aided in addressing the research questions and testing the hypothesis. The first two questions are closely related. They were set to examine whether AI has a positive or negative impact on students' academic writing; thereby, highlighting its strengths and weaknesses in this regard. As a result, the data that was gathered from analyzing students' and teachers' questionnaires implied that AI tools have both positive and negative effects on students' academic writing. Based on the strengths of this technology, it has been collected that, teachers frequently highlighted the improvement in grammatical accuracy, efficiency in writing processes, and increased accessibility for students

with diverse needs. Students also appreciated these benefits, noting the time-saving aspect and the reduction of errors in their writing. These positive aspects emphasized the role of AI tools in supporting students to produce higher-quality writing and manage their workloads more effectively. However, the findings also shed light on several concerns regarding the use of AI tools. Teachers expressed apprehensions about the potential for plagiarism, the risk of reduced creativity, and a lack of understanding of fundamental writing principles. Students similarly acknowledged these drawbacks, citing issues such as decreased originality, the provision of misleading information by AI tools, and difficulties in verifying the reliability of AI-generated content.

Finally, the questionnaires' results contributed to addressing the last research question. The latter was set to figure out the ways AI tools can be effectively integrated into the academic writing process to enhance student learning and writing. Consequently, it has been inferred that the mixed impact of AI tools calls for a balanced and nuanced approach to their integration into academic writing. Teachers are encouraged to guide students in the ethical and effective use of AI, emphasizing the importance of critical thinking and independent writing. AI tools must be used as supplements to enhance writing skills rather than as replacements for traditional academic practices.

To sum up, based on the precedent research findings gathered from teachers' and students' questionnaires, it can be concluded that the findings of this study highlight the need for a careful and balanced integration of AI tools in academic writing. While AI tools offer significant benefits in terms of efficiency and accuracy, they also present challenges that must be addressed through targeted instructional strategies and ethical guidance. By adopting a balanced approach, educators can help EFL students leverage the advantages of AI tools while maintaining high standards of academic integrity and fostering independent critical thinking skills. This study highlights the importance of a nuanced perspective on the use of AI in

academic writing, advocating for its role as a complementary tool in the development of proficient and ethical academic writers. As a result, the research hypothesis, proposed at the beginning of this study has been confirmed.



## References

- Abdaoui, M. (2010). *Teaching lexical collocations to raise proficiency in foreign language writing*. [Magister dissertation, Mentouri-Constantine University].
- Ahmed, A. H. (2010). Students' problems with cohesion and coherence in EFL essay writing in Egypt: Different perspectives. *Literacy Information and Computer Education Journal*, 1(4), 211–221. <https://doi.org/10.20533/licej.2040.2589.2010.0030>
- Almaleki, W. S. A. (2021). Saudi international students' perceptions of the utility of artificial intelligence and intelligent personal assistant tools in EFL learning. In *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 82(4).
- Alpaydin, E. (2009). *Introduction to machine learning*. The MIT Press.
- Badger, R. G., & White, G. (2000). A process genre approach to teaching writing. *ELT Journal*, 54(2), 153-160.
- Bailey, S. (2006). *Academic writing: A handbook for international students* (2nd ed.). Routledge.
- Balta, N. (2023). Ethical considerations in using AI in educational research. *Journal of Research in Didactical Sciences*, 2(1), 51-53. <https://doi.org/10.51853/jorids/14204>
- Bancha, W. (2013). What causes spelling errors in Thai EFL students? *ARECLS*, 10, 107–129. Retrieved from [http://research.ncl.ac.uk/ARECLS/volume\\_10/bancha\\_vol10.pdf](http://research.ncl.ac.uk/ARECLS/volume_10/bancha_vol10.pdf)
- Belkhir, A. (2016). *Identifying EFL learner's essay writing difficulties and sources: A move towards solutions* [Master's thesis, University of Tlemcen]. Retrieved from <http://dspace1.univ-tlemcen.dz/handle/112/8987>
- Benesch, S. (2001). *Critical English for academic purposes: Theory, political and practice*. Lawrence Erlbaum Associates.
- Bezdek, J. C. (1992). On the relationship between neural networks, pattern recognition, and intelligence. *International Journal of Approximate Reasoning*, 6(2).

- Buddhima, N. W., & Keerthiwansha, S. (2018). Artificial intelligence education (AIEd) in English as a second language (ESL) classroom in Sri Lanka. *International Journal of Conceptions on Computing and Information Technology*, 6(1).
- Bughin, J., Hazan, E., Ramaswamy, S., Chui, M., Allas, T., Dahlström, P., Henke, N., & Trench, M. (2017). *Artificial intelligence: The next digital frontier?* McKinsey Global Institute. <https://apo.org.au/node/210501>
- Carroll, J. A., & Wilson, E. E. (1993). *Acts of teaching: How to teach writing*. Teacher Ideas Express.
- Caulfield, J. (2020, March 26). What is a dissertation? | 5 essential questions to get started. *Scribbr*. <https://www.scribbr.co.uk/thesis-dissertation/what-is-a-dissertation/>
- Chang, T. S., Li, Y., Huang, H. W., & Whitfield, B. (2021). Exploring EFL students' writing performance and their acceptance of AI-based automated writing feedback. *ACM International Conference Proceeding Series*. <https://doi.org/10.1145/3459043.3459065>
- ChatGPT (OpenAI). (2024, April 17). Definition of ChatGPT. Retrieved from <https://chat.openai.com/c/8681da24-3614-4495-a48c-f93691dbfb94>
- Church, K., & Rau, L. (1995). Commercial applications of natural language processing. *Communications of the ACM*, 38(11), 71-79. <https://doi.org/10.1145/219717.219778>
- Coffin, C., Curry, M. J., Goodman, S., Hewings, A., Lillis, T., & Swann, J. (2002). *Teaching academic writing: A toolkit for higher education*. Retrieved from <http://www.gbv.de/dms/goettingen/353843121.pdf>
- Crystal, D. (2019). *The Cambridge Encyclopedia of The English language* (3rd ed.). Cambridge University Press.
- Dergaa, I., Chamari, K., Zmijewski, P., & Ben Saad, H. (2023). From human writing to artificial intelligence generated text: Examining the prospects and potential threats of ChatGPT in

academic writing. *Biology of Sport*, 40(2), 615-622.

<https://doi.org/10.5114/biolsport.2023.125623>

Djaber, A., & Boutebbakh, Y. (2020). Perceptions about the place of literature-based instruction in teaching and learning academic writing [Master's thesis, University of Mohammed Seddik Ben Yahia - Jijel]. Retrieved from <http://dspace.univ-jijel.dz:8080/xmlui/handle/123456789/7507>

Filali, S. (2019). *Identifying academic writing challenges encountered by EFL Learners to develop their academic writing skills* [Master's thesis, Mohamed Khider University of Biskra]. Retrieved from <http://archives.univ-biskra.dz/handle/123456789/15173>

Fischer, M., Heim, D., Hofmann, A., Janiesch, C., Klima, C., & Winkelmann, A. (2020). A taxonomy and archetypes of smart services for smart living. *Electronic Markets*, 30(1), 131–149. <https://doi.org/10.1007/s12525-019-00384-5>

Fitria, T. N. (2021). QuillBot as an online tool: Students' alternative in paraphrasing and rewriting of English writing. *Englisia: Journal of Language, Education, and Humanities*, 9(1). <https://doi.org/10.22373/ej.v9i1.10233>

Gallardo, M., Heiser, S., & Arias McLaughlin, X. (2017). Developing pedagogical expertise in modern language learning and specific learning difficulties through collaborative and open educational practices. *The Language Learning Journal*, 45(4), 518-529. <https://doi.org/10.1080/09571736.2015.1010447>

Geyte, E. V. (2013). *Writing: Learn to write better academic essays*. HarperCollins UK.

Ghareeb Ahmed Ali, S. (2020). Using an artificial intelligence application for developing primary school pupils' oral language skills. 75) 75 (بسوهاج التربية لكتية التربوية المجلة, 75). <https://doi.org/10.21608/edusohag.2020.97643>

Gillett, A. (n.d.). Features of academic writing. *Academic writing style*. Retrieved March 11, 2024, from

<http://www.uefap.com/writing/feature/intro.htm#:~:text=Complexity,phrases%20than%20verb%2Dbased%20phrases>

Halliday, M. A. K., & Hasan, R. (1976). *Cohesion in English*. Longman.

Han, B. (2019). Application of artificial intelligence in autonomous English learning among college students. *International Journal of Emerging Technologies in Learning*, 14(6).  
<https://doi.org/10.3991/ijet.v14i06.10157>

Hordri, N., Yuhaniz, S., & Shamsuddin, S. M. (2017). Deep learning and its applications: A review. *Research gate*.  
[https://www.researchgate.net/publication/317185136\\_Deep\\_Learning\\_and\\_Its\\_Applications\\_A\\_Review](https://www.researchgate.net/publication/317185136_Deep_Learning_and_Its_Applications_A_Review)

Hyon, S. (1996). Genre in three traditions: Implications for ESL. *TESOL Quarterly*, 30(4), 693–722.

Hyland, K. (1998). *Hedging in scientific research articles*. John Benjamins Publishing.

Ivić, M. (2019, August 21). Artificial intelligence and geospatial analysis in disaster management. *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, XLII(3/W8), 161-166. <https://doi.org/10.5194/isprs-archives-xlii-3-w8-161-2019>

Jordan, R. R. (1997). *English for academic purposes: A guide and resource book for teachers*. Cambridge University Press.

Joseph, S. R., Hlomani, H., Letsholo, K., Kaniwa, F., & Sedimo, K. (2016). Natural language processing: A review. *International Journal of Research in Engineering and Applied Sciences*, 6(3), 207-210.  
[https://www.researchgate.net/publication/309210149\\_Natural\\_Language\\_Processing\\_A\\_Review](https://www.researchgate.net/publication/309210149_Natural_Language_Processing_A_Review)

Kılıçkaya, F. (2020). Using a chatbot, Replika, to practice writing through conversations in L2 English. <https://doi.org/10.4018/978-1-7998-2591-3.ch011>

- Kim, H.-S., Cha, Y., & Kim, N.-Y. (2020). Impact of mobile interactions with AI on writing performance. *Modern English Education*, 21(2).  
<https://doi.org/10.18095/meeso.2020.21.2.1>
- Kumar, A. (2012). Machine translation in Arabic-speaking ELT classrooms: Applications and implications. *International Journal of Social Science and Humanity*, 2(6), 442-445.  
<https://doi.org/10.7763/IJSSH.2012.V2.141>
- Kumar, C. P. (2013). The eclectic method-theory and its application to the learning of English. *International Journal of Scientific and Research Publications*, 3(6), 1-4.  
<https://www.ijsrp.org/research-paper-0613/ijsrp-p1844.pdf>
- Kumar, S. K. D., Vikash, R., Mohith, S. M., & Ajayaganesh, V. (2023). Evolution of artificial intelligence (AI). *International Journal of Research Publication and Reviews*, 4(5), 678-686. <https://ijrpr.com/uploads/V4ISSUE5/IJRPR12715.pdf>
- Latifi, M., Ketabi, S., & Mohammadi, E. (2020). Scaffolding academic writing through a process-genre approach: EFL students' writing performance and perceptions. *Cogent Education*, 7(1). <https://doi.org/10.1080/2331186X.2020.1779506>
- Lea, M. R., & Street, B. V. (1998). Student writing in higher education: An academic literacies approach. *Studies in Higher Education*, 23(2), 157-172.  
<https://doi.org/10.1080/03075079812331380364>
- Leung, C. (2005). *Convivial communication: Recontextualizing communicative competence*. *International Journal of Applied Linguistics*, 15(2), 119-144. <https://doi.org/10.1111/j.1473-4192.2005.00084.x>
- Li, M. (2019). Writing comments: Understanding EFL learners' performance and use of online resources. *International Journal of Educational Technology in Higher Education*, 16(1).  
<https://doi.org/10.1186/s41239-019-0158-4>

- Malik, A., Pratiwi, Y., Andajani, K., Numertayasa, I., Suharti, S., Darwis, A., & Marzuki. (2023). Exploring artificial intelligence in academic essay: Higher education student's perspective. *International Journal of Educational Research Open*, 5(2), 1-11. <https://doi.org/10.1016/j.ijedro.2023.100296>
- Mansoor, H. S., & Muhammad, F. (2022). Artificial intelligence in education: A tool for learning Arabic and its effects on students' motivation. *Education and Information Technologies*, 27(3), 3283-3300. <https://doi.org/10.1007/s10639-021-10625-5>
- Martin, J. R., & Rose, D. (2007). *Working with discourse: Meaning beyond the clause* (2nd ed.). Continuum.
- Matlabovich, M. X. (2022). Features of Eclectic Approach to Teaching English Language. *Eurasian Research Bulletin*, 4, 8–8. <https://www.geniusjournals.org/index.php/erb/article/download/344/304>
- McCarthy, J. (2007, November 12). *What is AI?* Stanford.edu. <http://jmc.stanford.edu/articles/whatisai.html>
- Medhat, S., & Karam, O. A. (2018). Artificial intelligence and ELT: A systematic review. *International Journal of Computer Applications*, 179(26), 1-10. <https://doi.org/10.5120/ijca2018916466>
- Melbroune, M., (2021). Grammarly INC: Introducing Grammarly for Windows and Mac.
- Mijwel, M. M. (2015). History of artificial intelligence. *Computer Science, College of Science*, 1(1), 1-6. [https://www.researchgate.net/publication/322234922\\_History\\_of\\_Artificial\\_Intelligence](https://www.researchgate.net/publication/322234922_History_of_Artificial_Intelligence)
- Mishra, R., & Mishra, R. (2017). Artificial intelligence and its future prospects in teaching and learning English. *Research Journal of English Language and Literature*, 5(3), 239-243.

- Nabhan, M. A., & Hamm, Y. (2023). AI-based automated writing evaluation in EFL contexts: Perceptions and challenges. *International Journal of English Language and Literature Studies*, 12(3), 160-169. <https://doi.org/10.18488/journal.23.2023.123.160.169>
- Nandi, A. (2020). The role of artificial intelligence in English language teaching. *Journal of Literature, Languages, and Linguistics*, 69, 16-22. <https://doi.org/10.7176/JLLL/69-03>
- National Geographic. (n.d.). Artificial intelligence. Retrieved February 15, 2024, from <https://www.nationalgeographic.org/encyclopedia/artificial-intelligence/>
- Nazari, N., Shabbir, M. S., & Setiawan, R. (2021). Application of Artificial Intelligence powered Digital Writing Assistant in higher education: Randomized Controlled Trial. *Heliyon*, 7(5). <https://doi.org/10.1016/j.heliyon.2021.e07014>
- Nilsson, N. J. (2010). *The Quest for Artificial Intelligence: A History of Ideas and Achievements*. Cambridge University Press.
- Ng, P. P. (2003). *Effective Writing: A Guide for Social Science Students*. Chinese University Press.
- Nguyen, T. T. T. (2018). Artificial intelligence in language education: A study of the effectiveness of AI-based translation tools. *VNU Journal of Foreign Studies*, 34(2). <https://doi.org/10.25073/2525-2445/vnufs.4255>
- Nunan, D. (1989). *Designing tasks for the communicative classroom*. CUP.
- Oshima, A., & Hogue, A. (2007). *Introduction to academic writing* (3rd ed.). Pearson Education.
- O'Sullivan, N., & Cleary, M. R. (2014). Using artificial intelligence to improve writing. *The Writing Center Journal*, 34(1), 32-45.
- Paltridge, B. (2007). 'Approaches to the genre in ELT'. In J. Cummins and C. Davison (eds), *International Handbook of English Language Teaching*, Part II, pp. 931–943, Springer.
- Pavlik, P. I., Yudelso, M. V., & Koedinger, K. R. (2011). Using contextual factors to assess the utility of educational resources for learning. *International Journal of Artificial Intelligence in Education*, 21(3), 327-346.

- Perelman, L. (2020). Automated writing instruction: Its promises, limitations, and perils. *College Composition and Communication*, 71(2), 298-327.
- Qiu, Y., & Winters, F. (2019). Using artificial intelligence in foreign language learning: A review of empirical studies. *Journal of Technology and Chinese Language Teaching*, 10(1), 1-15.  
<https://doi.org/10.1177/2158244019855857>
- Rahayu, Weda, S., Muliati, & De Vega, N. (2024, January). Artificial Intelligence in writing instruction: A self-determination theory perspective. *XLinguae*, 17(1), 234-244.  
<https://doi.org/10.18355/xl.2024.17.01.16>
- Rahimi, M., & Zhang, L. J. (2018). Writing task complexity, students' motivational beliefs, anxiety and their writing production in English as a second language. *Reading and Writing*, 32(3).  
<https://doi.org/10.1007/s11145-018-9887-9>
- Raimes, A., (1983). *Techniques in teaching writing*. Honk Kong: Oxford American English.
- Ragusa, G., & Yang, J. (2017). The impact of artificial intelligence on education: A literature review. *International Journal of Education and Development using Information and Communication Technology*, 13(1), 113-129.
- Reinders, H., & White, C. (2016). Twenty-first-century language teaching and learning: The challenge of complexity. *Language Learning Journal*, 44(2), 183-201.  
<https://doi.org/10.1080/09571736.2015.1053862>
- Reshamwala, A., Mishra, D., & Pawar, P. (2013). Review on natural language processing. *IRACST Engineering Science and Technology: An International Journal (ESTIJ)*, 3(1), 113-116.  
[https://www.researchgate.net/publication/235788362\\_REVIEW\\_ON\\_NATURAL\\_LANGUAGE\\_PROCESSING](https://www.researchgate.net/publication/235788362_REVIEW_ON_NATURAL_LANGUAGE_PROCESSING)
- Rivers, W. M. (1981). *Teaching Foreign-Language Skills*. The University of Chicago Press.
- Richards, j. c., & Miller, s. k. (2005). *Doing Academic Writing in Education: Connecting the Personal and the Professional*. Lawrence Erlbaum Associates, Inc.



- Rugg, G., & Petre, M. (2004). *The Unwritten Rules of PhD Research*. Open University Press
- Russell, S. & Norvig, P. (2010). *Artificial Intelligence: A Modern Approach* (3rd ed.). Pearson Education, Inc.
- Sadiku, L. M., & Topalli, M. (2017). The effect of artificial intelligence on teaching and learning: A review. *Journal of Education and Practice*, 8(10), 121-127.
- Sarifa, N. (2018). Techniques of Teaching Professional Vocabulary with Special Reference to Vocabulary Used in Media. *International Journal of Linguistics, Literature and Translation*, 1(4), 42–42. <https://doi.org/10.32996/ijllt.2018.1.4.6>
- Scardamalia, M., & Bereiter, C. (2006). Knowledge building: Theory, pedagogy, and technology. In *Cambridge Handbook of the Learning Sciences* (pp. 97-115). Cambridge University Press.
- Selim, A. S. M. (2024). The Transformative Impact of AI-Powered Tools on Academic Writing: Perspectives of EFL University Students. *International Journal of English Linguistics*, 14(1), 14-29. <https://doi.org/10.5539/ijel.v14n1p14>
- Smith, B., & West, J. (2020). Artificial intelligence in language learning: Current trends and future directions. *Computer Assisted Language Learning*, 33(5-6), 483-508. <https://doi.org/10.1080/09588221.2020.1757022>
- Sokolik, M. (2003). Writing. In D. Nunan (Ed.), *Practical English Language Teaching* (pp. 87-108). McGraw Hill.
- Sokolova, A. (2018). Challenges of implementing AI in education. *International Journal of Emerging Technologies in Learning*, 13(12), 171-186. <https://doi.org/10.3991/ijet.v13i12.9041>
- Srivastava, A., & Kumar, D. (2016). Natural language processing: An introduction. *Computer Science and Information Technology*, 4(1), 1-10. <https://doi.org/10.5120/csit201691266>
- Stone, P., Brooks, R., Brynjolfsson, E., Calo, R., Etzioni, O., Hager, G., Hirschberg, J., Kalyanakrishnan, S., Kamar, E., Kraus, S., Leyton-Brown, K., Parkes, D., Press, W.,

- Saxenian, A., Shah, J., Tambe, M., & Teller, A. (2016). Artificial Intelligence and Life in 2030 One Hundred Year Study on Artificial Intelligence: *Report of the 2015-2016 Study Panel*. Stanford University.
- Swan, M. (2005). *Practical English usage* (3rd ed.). Oxford University Press.
- Tai, M. C.-T. (2020, August 14). The impact of Artificial Intelligence on Human Society and Bioethics. *Tzu chi medical journal*, 32(4), 339-343.  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7605294/>
- Tagg, C., & Hewings, A. (2017). Creating and interpreting visual images: Issues in teaching academic writing to international students. *Journal of English for Academic Purposes*, 26, 79-92. <https://doi.org/10.1016/j.jeap.2016.10.004>
- TeachOnline. (2018). Ten Facts About Artificial Intelligence in Teaching and Learning. Contact North Nord - Tools and Trends.
- Teng, F. (2019). The effectiveness of group work and peer feedback on EFL learners' self-efficacy and writing performance. *TESOL Quarterly*, 53(2), 555-581.  
<https://doi.org/10.1002/tesq.480>
- Terryberry, K. (2005). *Writing for the health professions*. Thomson Delmar Learning Books.
- Ventayen, R. J. M. (2023). OpenAI ChatGPT Generated Results: Similarity Index of Artificial Intelligence-Based Contents. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.4332664>
- Verma, M. (2018). Artificial intelligence and its scope in different areas with special reference to the field of education. *International Journal of Advanced Educational Research*, 3(1), 05-10.  
[https://www.researchgate.net/publication/340886150\\_Artificial\\_intelligence\\_and\\_its\\_scope\\_in\\_different\\_areas\\_with\\_special\\_reference\\_to\\_the\\_field\\_of\\_education](https://www.researchgate.net/publication/340886150_Artificial_intelligence_and_its_scope_in_different_areas_with_special_reference_to_the_field_of_education)
- Wade, C., & Tavris, C. (2008). *Invitation to psychology* (4th ed.). Pearson Prentice Hall.

- Wang, X. (2019). AI-based automated writing evaluation: Teachers' and students' perceptions. *Journal of Educational Technology Development and Exchange*, 12(1), 101-120.  
<https://doi.org/10.18785/jetde.1201.08>
- Whitaker, A. (2009). Academic writing guide: A step-by-step guide to writing academic Papers.  
<http://www.vsm.sk/Curriculum/academicsupport/academicwritingguide.pdf>
- White, R. & Ardnt, V. (1991). *Process Writing*. Longman.
- Williams, J. (2005). *Style: Toward clarity and grace*. University of Chicago Press.
- Xue, J. (2021). On the Innovation of Foreign Language Teaching in the Era of Artificial Intelligence. *The 5th International Conference on Innovation in Artificial Intelligence*. 140-144
- Yang, C. (2016). Using artificial intelligence to support English language learning: A review. *Journal of Interactive Learning Research*, 27(3), 243-260.
- Yassaf, H., & Laib, O. (2023). *Investigating the effects of Texting on students' Academic Writing* [Master's thesis, University of Mohammed Seddik Ben Yahia -Jijel]. Retrieved from <http://dspace.univ-jijel.dz:8080/xmlui/handle/123456789/13543>
- Yin, X. (2017). Applications of artificial intelligence in second language learning: A review. *International Journal of Learning and Teaching*, 9(2), 85-95.  
<https://doi.org/10.18844/ijlt.v9i2.1922>
- Zhang, J. (2020). AI in education: The changing face of classroom interaction. *Computer-Assisted Language Learning*, 33(4), 366-384. <https://doi.org/10.1080/09588221.2020.1743669>
- Zhang, Q., & Luo, W. (2018). Using artificial intelligence to analyze students' writing: A case study. *Interactive Technology and Smart Education*, 15(3), 231-243.  
<https://doi.org/10.1108/ITSE-12-2017-0062>

## APPENDICES

## Students' Questionnaire

Dear students,

You are kindly asked to answer the following questionnaire, which is part of a research work undertaken as a part of the Master's degree in language and culture program at the Department of English, University of 08 May 1945 Guelma. It is important because it aims to collect data about **EFL teachers' and students' perspectives toward the impact of Artificial Intelligence tools on academic writing**. Therefore, we would appreciate your collaboration if you could answer this questionnaire by putting a tick (✓) or provide a full statement(s) when necessary.

Please be sure that it is highly confidential since no personal information is required and you will go through it anonymously. Moreover, your answers are crucial for this research's validity. May we thank you in advance for your cooperation.

Ms. Annabi Soundous

Ms. Souadkia Rayyene

Department of English

Faculty of Letters and Languages

University of 08 Mai 1945, Guelma

2024

**Section one:** General information

**Q01.** How long have you been studying English?

..... years.

**Q02.** How could you describe your level of English proficiency?

- a) Very good ☐
- b) Good ☐
- c) Average ☐
- d) Bad ☐
- e) Very bad ☐

**Section two:** Students' perspectives towards Academic Writing.

**Q03.** Could you define the term academic writing?

.....  
.....

**Q04.** How often are you asked to write academically?

- a) Always ☐
- b) Often ☐
- c) Sometimes ☐
- d) Rarely ☐
- e) Never ☐

**Q05.** Select the type of academic writing you are instructed to write. (You can choose more than one choice)

- a) Essay ☐
- b) Report ☐
- c) Research project ☐

**Q06.** Are you familiar with the features of academic writing?

Yes ☐

No ☐

**Q07.** If yes, among the following features of academic writing, choose the ones that you are familiar with. (You can choose more than one choice)

a) Complexity ☐

b) Formality ☐

c) Coherence ☐

d) Cohesion ☐

e) Objectivity ☐

f) Explicitness ☐

g) Hedging ☐

h) Evidence ☐

**Q08.** Do you find serious difficulties in academic writing?

A) Yes ☐

b) No ☐

**Q09.** If yes, what are the difficulties you face in academic writing? (You can choose more than one answer)

a) Vocabulary ☐

b) Grammar ☐

c) Cohesion ☐

d) Coherence ☐

e) Punctuation ☐

f) Spelling ☐

Other(s), would you please specify.....

**Section Two:** students' perspectives towards Artificial Intelligence tools

**Q10.** Are you familiar with the concept of “Artificial Intelligence (AI)”?

Yes ☐ b) No ☐

If yes, which AI writing tools do you use the most? (You can choose more than one choice)

- a) ChatGPT ☐
- b) Grammarly ☐
- c) Quillbot ☐
- d) Google translation ☐

Other(s), would you please specify? .....

**Q11.** What do you usually focus on while using AI writing tools? (You can choose more than one choice)

- a) Spelling and punctuation ☐
- b) Grammar checking ☐
- c) Content generation ☐
- d) Paraphrasing ☐
- e) Translation ☐
- f) Plagiarism checking ☐

If other(s), please specify?.....

**Q12.** How often do you use AI tools?

- a) Always ☐
- b) Often ☐
- c) Sometimes ☐
- d) Rarely ☐
- e) Never ☐

**Q13.** On a scale of 1 to 5, how would you rate the effectiveness of AI tools in academic writing quality?

1      2      3      4      5

Not effective at all      ○      ○      ○      ○      ○      Extremely effective

**Q14.** According to your perspective, what are the advantages of utilizing artificial intelligence tools in academic writing? (You can choose more than one choice)

- a) Improving efficiency ☐
- b) Enhancing the quality of writing ☐
- c) Reducing errors ☐
- d) Saving time ☐
- e) Providing feedback ☐
- f) Giving suggestions ☐

Other(s), would you please specify.....

**Q15.** According to your perspective, what are the disadvantages of utilizing artificial intelligence tools in academic writing? (You can choose more than one choice)

- a) Decreased your creativity ☐
- b) Provides Misleading information ☐
- c) No control over your writing ☐
- d) Difficult terms ☐
- e) Non-accurate responses ☐

Other(s),                      would                      you                      please                      specify

.....



**Q16.** Do you feel prepared to use AI responsibly in your academic writing work?

Yes ☐                      b) No ☐

**Q17.** How satisfied are you with the use of artificial intelligence tools for academic writing purposes?

a) Very dissatisfied ☐

b) Dissatisfied ☐

c) Neutral ☐

d) Satisfied ☐

e) Very satisfied ☐

**Q18.** Do you think artificial intelligence tools could replace traditional writing assistance methods?

A) Yes ☐                      b) No ☐

**Q19.** How do you perceive the role of artificial intelligence tools in the future of your academic writing?

a) Essential ☐

b) Limited ☐

c) Not necessary ☐

**Q20.** What guidelines do you think should be in place for using AI in academic writing?

.....  
.....  
.....

*Thank you for your time & contribution.*

## Teachers' questionnaire

Dear teachers,

This questionnaire has been designed as part of a Master's degree in language and culture in the Department of English, University 08 Mai 1945-Guelma. This study aims to explore the **perspectives of EFL teachers and students regarding the impact of Artificial Intelligence tools on academic writing**. We would be so grateful if you could answer the following questions by putting a tick (✓) in the appropriate choice or by providing detailed statements. Your answers are very important for the validity of this research and the collected data will be used for academic purposes only. Ensure that the answers you provide will be kept anonymously and used only for research.

Thank you in advance for giving us your time to answer this questionnaire.

Ms. Annabi Soundous

Ms. Souadkia Rayyene

Department of English

Faculty of Letters and Languages

University of 08 Mai 1945, Guelma

2024

### Section One: General Information

**Q01.** What degree do you hold?

- a) Magister degree
- b) PhD degree
- c) Master degree

**Q02.** What is your specialty?

- a) Linguistics and language teaching
- b) Literature
- c) Civilization

**Q03.** How long have you been teaching English at university? ..... Years.

### Section Two: Teachers' perspectives on academic writing

**Q04.** How can you describe your students' level in their writing?

- a) Very good
- b) Good
- c) Average
- d) Bad
- e) Very bad

**Q05.** How often do you ask your students to provide writing assignments?

- a) Always
- b) Often
- c) Sometimes
- d) Rarely
-

e) never

**Q06.** In your teaching career of Master One students, what type of academic writing assignment do you typically assign to your students? (You can choose more than one answer)

- a) Essays ☐
- b) Research project ☐
- c) Reports ☐

Other(s), please specify.....

**Q07.** When correcting your students' writing assignments, what do you focus more on? (You can choose more than one answer)

- a) Grammar ☐
- b) Vocabulary ☐
- c) Spelling and punctuation ☐
- d) coherence and cohesion ☐
- e) Content ☐

If other(s), please specify .....

**Q08.** In your opinion, which of the following writing difficulties do students encounter when completing their writing assignments? (You can choose more than one answer)

- a) Lack of vocabulary ☐
- b) Poor Grammar knowledge ☐
- c) Spelling and punctuation ☐
- d) Coherence and cohesion ☐

If other(s), please specify.....

### Section Three: Teachers' perspectives toward the impact of AI tools on Academic Writing

**Q09.** How familiar are you with the concept of Artificial Intelligence tools for academic writing assistance?

1      2      3      4      5

Not familiar at all      ☐   ☐   ☐   ☐   ☐      Extremely Familiar

**Q10.** Do you differentiate between students' original writing and content generated by AI tools?

a) Yes                       b) No

-If yes, have you noticed an increase in students use of artificial intelligence tools in their academic writing assignments?

a) Yes                       b) No

**Q11.** According to your perspective, what are the benefits of utilizing artificial intelligence tools in academic writing? (You can choose more than one choice)

- a) Increased accessibility for students with diverse learning needs
- b) Improved efficiency
- c) Improved clarity
- d) Enhanced grammar
- e) Learner's autonomy
- f) Improved writing quality
- g) Enhanced productivity

If other(s), please specify.....

**Q12.** According to your perspective, what are the drawbacks of utilizing artificial intelligence tools in academic writing? (You can choose more than one choice)

- a) Reliance on AI tools over critical thinking skills ☐
- b) Potential for plagiarism or academic dishonesty ☐
- c) Lack of understanding of writing principles and mechanics ☐
- d) AI tools might make all writing look the same, taking away students' ability to be unique and creative ☐
- e) The use of AI tools may discourage students from seeking feedback or guidance from teachers ☐

If other(s), please specify.....

**Q13.**How satisfied are you with the use of artificial intelligence tools for academic writing purposes?

- a) Very dissatisfied ☐
- b) Dissatisfied ☐
- c) Neutral ☐
- d) Satisfied ☐
- e) Very satisfied. ☐

**Q14.** How do you support students in developing a balance between using artificial intelligence tools and developing their writing skills?

.....

.....

.....

*Thank you for your collaboration*

### Appendix 3

Reliability statistics	
Cronbach <sup>a</sup> Alpha	Elements number
0,753	3

Elements statistics			
	Number of items	Cronbacha Alpha	N
General introduction	2	,751	118
Academic writing	7	,823	118
Artificial Intellignce	11	,652	118

### Appendix 4

Reliability statistics	
Cronbach <sup>a</sup> Alpha	Elements number
0,811	3

Elements statistics			
	Number of items	Cronbacha Alpha	N
General introduction	3	,943	15
Academic writing	5	,854	15
Artificial Intellignce	7	,721	15

الكتابة الأكاديمية هي مطلب أساسي لطلاب اللغة الإنجليزية كلغة أجنبية لتعكس تجاربهم حيث يستخدمون أسلوبًا مختلفًا عن الكتابات الأخرى. ثم إن استخدام الأدوات المدعومة بالذكاء الاصطناعي في اللغة الإنجليزية الأكاديمية يتزايد بسرعة. وفقًا لذلك، هدفت الدراسة الحالية إلى استكشاف وجهات نظر أساتذة وطلاب اللغة الإنجليزية كلغة أجنبية نحو تأثير أدوات الذكاء الاصطناعي على الكتابة الأكاديمية. وبشكل أكثر تحديدًا، بحثت الدراسة في تأثير أدوات الذكاء الاصطناعي على جودة الأعمال الكتابية الأكاديمية التي ينتجها طلاب اللغة الإنجليزية كلغة أجنبية. بالإضافة إلى ذلك، كان لهذا البحث هدف كشف العيوب التي قد يواجهها طلاب اللغة الإنجليزية كلغة أجنبية عند دمج أدوات الذكاء الاصطناعي في الكتابة الأكاديمية. لتحقيق الأهداف المخططة لهذا الاستكشاف، اخترنا النهج الوصفي الكمي الذي تضمن أداة لجمع البيانات؛ الاستبيان. و تم تقديم استبيان، استقصى وجهات النظر تجاه الكتابة الأكاديمية المتأثرة بأدوات الذكاء الاصطناعي، إلى طلاب السنة الأولى ماستر في لغة وثقافة الإنجليزية في جامعة 8 ماي 1945 (قالمة)، و تم تقديم استبيان آخر إلى الأساتذة في نفس القسم. تم جمع البيانات الكمية من استبيانات الطلاب و الأساتذة ثم تحليلها بواسطة برنامج SPSS ، الإصدار 25. أظهرت النتائج الطبيعية المزدوجة لتأثير الذكاء الاصطناعي على الكتابة الأكاديمية. تشمل الفوائد تحسين الدقة النحوية، وتعزيز كفاءة الكتابة، وزيادة إمكانية الوصول لتلبية احتياجات الطلاب المتنوعة. ومع ذلك، تنشأ مخاوف كبيرة بشأن السرقة الأدبية، وانخفاض الإبداع، وعدم الفهم الكافي لمبادئ الكتابة الأساسية.

**الكلمات المفتاحية:** أدوات الذكاء الاصطناعي؛ الكتابة الأكاديمية.