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**The Impact of AI Tools along with Conventional Methods on EFL  
Student's Academic Writing: Case of Third Year Students at the  
University of Ain Temouchent**

*An Extended Essay Submitted in Partial Fulfillment of the Requirement for a Master's  
Degree in Didactics and Applied Languages*

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## **Dedication**

With heartfelt gratitude and deep appreciation, I dedicate this humble work to my beloved parents, their presence in my life is a blessing beyond measure.

This work is also dedicated to my dear sisters and my brother, whose encouragement, kindness, and moral support have uplifted me throughout this journey. Their belief in me has always been a source of motivation. .

May Allah protect and reward you all.

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## **Abstract**

Academic writing is a crucial skill for English Foreign Language learners, yet many students face significant challenges in mastering its various components. The present study aimed to examine the impact of combining artificial intelligence tools with conventional writing methods on the academic writing proficiency of EFL learners. This study was conducted within the context of third-year EFL learners at Belhadj Bouchaib University. The main objectives were to identify learners' academic writing difficulties, assess their views on AI tools, and examine if combining technology with traditional methods improves writing. To achieve these aims, a mixed-methods approach was adopted, utilizing a questionnaire administered to students and interviews conducted with experienced EFL teachers. Data were analyzed both quantitatively and qualitatively. The findings revealed that while learners struggled with coherence, vocabulary, and grammar in academic writing, many demonstrated a positive attitude towards the use of AI tools. Furthermore, results suggested that combining AI with traditional strategies offered a more effective approach to developing writing skills. The study contributes to the field of EFL education by offering insights into how integrating AI tools with traditional writing methods can enhance academic writing and inform more effective, technology-supported teaching practices.

**Keywords:** *Artificial Intelligence, Academic Writing, Traditional Methods, EFL, Educational Tools.*



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## **List of Abbreviations and Acronyms**

**EFL:** English as a Foreign Language.

**AI:** Artificial Intelligence.

**L1:** First Language/Native Language.

**GT:** Google Translate.

**BBU:** Belhadj Bouchaib University.

**ACTFL:** American Council on the Teaching of Foreign Languages.

# **General Introduction**



## General Introduction

Acquiring proficiency in the English language is a developmental process that entails the systematic cultivation of various linguistic skills essential for effective communication and academic success. The skills that English foreign language learners have to focus on are speaking, listening, reading and writing. Writing is a key language skill that EFL learners need to master throughout their learning journey since it allows them to be able to express their thoughts through writing pieces of paragraphs or essays. Academic writing can be a challenging task for EFL learners as it requires a good proficiency level in the English language. These challenges often hinder their ability to produce coherent and well-organized written work, highlighting the need for effective methods to enhance their writing skills.

The recent and rapid rise of technology has significantly changed human lives and impacted their ways of living in various domains, including education. In language learning, technology plays a crucial role in facilitating the learning process and increasing learners' motivation to overcome challenges related to different skills, particularly writing. Artificial Intelligence has become the center of attention in foreign language learning, and many researchers have investigated it from different angles due to its impact on language learning. It has developed new tools that facilitate language learning in different ways, including academic writing tools such as grammar checkers and writing assistants. On the other hand, conventional writing methods remain foundational in teaching academic writing skills, as they play an essential role in helping learners understand the fundamentals and build a solid foundation in academic writing. This, in turn, enables EFL learners to think critically about their own writing and improve its quality.

In this regard, this dissertation attempts to investigate the combination of AI tools with conventional writing methods. This idea is relatively new, especially when considered together. AI tools in writing have been researched in different context, such as grammar

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checkers, AI-assisted writing platforms, and feedback mechanisms. The direct combination to conventional writing methods is a less common focus. Thus, this investigation will shed light on this gap by examining how traditional methods and AI tools can be combined effectively to address the challenges EFL learners face when writing academic texts. In addition, the sample population chosen to address this gap consists of third-year EFL learners at Belhadj Bouchaib University in Ain Temouchent. Since, they are going to be graduating at the end of the academic year , they will be asked to write different academic essays in different modules such as Linguistics, Didactics, Literature and written expression, so the sample was chosen to address the various challenges faced during the process of academic writing journey and to test the effectiveness of combining both conventional writing methods with AI tools for the sake of overcoming their difficulties.

In account for this, the current study is highlighting a set of primary objectives to be reached by the end of the investigation which are as follows

- To investigate the difficulties encountered by EFL learners in academic writing.
- To evaluate the impact of using AI tools alongside conventional writing methods.
- To examine EFL learners perceptions and attitudes toward the use of AI tools for academic writing.
- To investigate the role of AI tools in fostering academic writing performance.

The mentioned objectives lead to developing two main research questions that cover the main aims of the research in hand which are:

1. What challenges do EFL learners face when using conventional writing methods compared to AI tools for academic writing?

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2. To what extent using AI tools in conjunction with conventional writing methods impact the performance of academic writing?

To answer those research questions, the researcher develops the following hypotheses:

1. EFL learners could face more challenges in their academic writing when using conventional writing methods compared to AI tools, particularly in areas like grammar mistakes, coherence and academic vocabulary usage.
2. The use of AI tools in conjunction with conventional writing methods may impact the performance of academic writing positively by improving grammar accuracy, coherence and vocabulary usage compared to using conventional methods alone.

To clearly explain the impact of combining conventional methods with AI tools on EFL learners' academic writing, and to answer the research questions, this investigation is organized in a structured manner, divided into three main chapters. The first chapter provides a comprehensive theoretical foundation by exploring the challenges EFL learners face in academic writing, the conventional methods used in writing instruction, the emergence of AI tools, and the impact of combining both approaches. The second chapter outlines the methodological framework of the study, detailing the research design, instruments used, including questionnaires and interviews and the procedures followed for data collection and analysis. Chapter three focuses on analyzing and interpreting the collected data, highlighting key findings and providing pedagogical recommendations to enhance EFL learners' academic writing by integrating AI tools with traditional writing strategies.

# Chapter One

## Theoretical Framework and the Literature Review

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### 1.1 Introduction

Learning a foreign language in an academic context requires the development of multiple skills, including reading, writing, listening and speaking, in order to achieve mastery. English language learners, in particular, are required to write academic texts throughout their learning journey. However, it could be a challenging task for some learners to produce well-structured essays or paragraphs for several reasons. The rapid advancement of technology has led to changes in various areas of human life, including the field of education. Artificial Intelligence plays a crucial role in overcoming several challenges related to education using new tools that help learners learn easily and effectively. Academic writing is particularly challenging for EFL learners, but with the help of AI tools, it can become less difficult. On the other hand, EFL learners receive various lectures throughout their learning journey in different modules focused on mastering academic writing, using a range of methods and techniques that help them build a solid foundation in academic writing.

The research in hand will shed light on the gap of combining both AI tools with conventional writing methods and their impact on students' academic writing. This chapter aims to provide readers with theoretical foundations of various themes related to artificial intelligence and conventional writing. It highlights the challenges faced by EFL learners in academic writing, the role and impact of AI tools on students' writing, and the integration of both approaches. Finally, the chapter highlights the significance of the study and discusses previous studies.

### 1.2 Challenges EFL Learners Face in Academic Writing

Academic writing was defined by various authors stating its types, role, and importance in the academic learning. In academic writing, EFL learners usually face different challenges in producing well-structured writing pieces. The researcher will provide its definition, types, and common challenges in academic writing.

#### 1.2.1 Definition and Types of Academic Writing

Academic writing refers to writing formal pieces in an academic context, well-structured and using formal language. Oshima and Hogue (2007) state that “Academic writing is a formal style of writing used in universities and scholarly publications. It involves presenting a reasoned argument supported by evidence, using clear and coherent language” (p.3). The latter refers to use formal expressions in writing academically and supports ideas with evidence in order to convince readers and reach to write well-structured pieces of writing. Students, researchers, and professors across disciplines use academic writing to express their thoughts and arguments in an academic context and to communicate ideas effectively. It takes the form of paragraphs, essays, articles, and theses.

Academic writing can be divided to different types, each with its own unique structure, specific language, and purpose aimed at conveying meaning to readers. According to research and different authors there are six types of academic writing which are as follow:

**a.Descriptive writing:** Involves describing a topic using descriptive language such as adjectives. According to Murray and Hughes (2008), descriptive writing is often used in summarising research, defining concepts, or outlining processes.

- b. **Analytical writing:** In this type, writers break down information and ideas into several parts, evaluate the relationships between them, and critically analyse them to produce a well-developed piece of writing on a particular topic. As noted by Cottrell (2011), "analytical writing requires not just presenting information but restructuring it into categories, groups, or relationships and interpreting its meaning in a logical manner" (p.85).
- c. **Persuasive writing:** Is a form of academic writing where writers tend to convince readers about a particular topic using arguments and evidence to support their ideas and points of view. Swales and Feak (2012) argue that persuasive writing is central to argumentative essays and research proposals.
- d. **Critical writing:** Involves systematically evaluating information and arguments, questioning assumptions, and presenting a well-reasoned perspective on a particular topic. As stated by Moore and Morton (2005), "Critical writing involves making judgments about what you read and expressing these judgments in a clear, well-structured arguments"(p.12).
- e. **Narrative writing:** Is broadly defined as the art of storytelling, where the writer presents events or experiences in a coherent sequence to engage the readers. It includes characters, a setting, a conflict, and often a moral. It aims to convey a message or to entertain the readers.
- f. **Reflective writing:** Involves critically analyzing experiences or events to gain insights derive and develop deeper understanding. In the words of Moore and Morton (2006), "Reflective writing is more personal than other kinds of academic writing and is intended to show the writer's learning process"(p.192). It focuses on connecting personal insights to theoretical knowledge and practical application. More recent research emphasizes its role in

academic and professional development, requiring structured reflections that analyze contexts and synthesise learning (University of Edinburgh, 2024).

Although other types of academic writing exist alongside with the previous ones which are expository, report writing, proposal writing, creative, technical, argumentative and comparative but the researcher highlighted the most used ones among EFL learners.

### **1.2.2 Common Challenges EFL Learners Face in Academic Writing**

English as a foreign language (EFL) learners face various difficulties in academic writing. The common challenges are grammar mistakes, lack of vocabulary, coherence and cohesion, writing under time constraints, cultural differences in writing, over-reliance on translation and mistakes in punctuation. EFL learners often fall in these errors for several reasons, among them lack of knowledge about the language, since EFL learners are foreign learners and their mother tongue is the Arabic language, which is different from the English language that, it can be challenging for them to avoid falling in these errors.

On the other hand, errors are different from mistakes. The latter occurs due to a lack of language knowledge, which often goes unnoticed by learners, making it difficult for them to correct their own mistakes. Meanwhile, errors refer to learners' competence in the target language. It may happen because the learner did not pay attention to it, and it can be immediately corrected by the learner if he or she notices it. As stated by Gass, Behney, and Plonsky (2020) "errors are viewed as essential indicators of the learning process, reflecting how learners internalize and experiment with the rules of a new language". Analyzing these errors provides insight into their developing interlanguage system and helps guide effective teaching strategies (p.26). Thus, EFL learners often make errors in their academic writing.

## Chapter One: Theoretical Framework and Literature Review

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First of all, grammar mistakes in academic writing are a common challenge for EFL learners as they influence the professionalism of their writing. Common issues include verb tense inconsistencies, subject-verb agreement errors, misuse of articles and problems with sentence structure and word order.

- **Verb tense issues:** EFL learners often make mistakes in verb tenses in their writing.

According to Swales and Feak (2004), “Academic writing often requires consistent and appropriate use of Tenses, especially when discussing past studies (past tense) or making general claims (present tense). Inconsistencies can confuse readers (pp.344-345). The latter shows that EFL learners often mix tenses in their writing, which can confuse the reader, for example using present tense instead of past tense in descriptive academic writing.

- **Subject-verb agreement errors:** refer to the incorrect matching of the subject and verb, failing to consider whether the subject is singular or plural. As noted by the Edmonds Community College Writing Center (n.d.),” Subject and verbs need to agree in number, which is known as singular or plural”(p.1).

Singular Subject +Singular Verb= Agreement

Plural Subject+ Plural Verb= Agreement

To illustrate here is an example: Error: There is many mistakes in your paragraph (agreement error: mistakes= plural/is= singular) Correction: There are many mistakes in your paragraph.

- **Misuse of articles:** articles are an essential part of sentence structure, and there are two main types. First one is the definite article “The” refers to specific things. The second type is the indefinite article, which is used to refer to something general. “A” is used before words that begin with a consonant sound, and “An” is used before words that

begin with a vowel sound. They often come at the beginning of noun phrases to help the reader understand whether things are known or unknown. Walker (2018) explains that article errors are common in English writing but can be avoided with practice and proper guidelines. EFL learners often make mistakes in using the appropriate article in the correct situations.

- **Problems in sentence structure:** In the English language, sentence structure is the arrangement of words and phrases in order to form correct and well-structured sentences. The basic sentence structure is subject-verb-object (SVO) order, but it can be complex depending on the type of sentence.

Sentences can be divided into several types which, are as follow.

-**Declarative sentence:** a statement. For example, I write the lesson.

- **Interrogative sentence:** a question. Did you revise your lessons?

- **Imperative sentence:** a command or request. Please close the door.

-**Exclamatory sentence:** a strong emotion or exclamation. What a beautiful day!

- **Compound sentence:** it includes two independent clauses joined by a conjunction (and, but, or). Example: She wanted to go to the park, but it started raining.

- **Complex sentence:** it includes independent clause and dependent ones. Example: Although it was raining, I went for a walk.

-**Compound-complex sentence:** it includes two or more independent clauses and at least one dependent clause. Such as: I went to the bank to retrieve money because I needed them to pay my bills, and I bought some books.

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EFL learners often make mistakes in sentence structures. Based on the work of Yale Graduate School Writing Center (n, d.), the most common sentence structure problems are as follows:

**a. Sentence fragment:** An incomplete sentence that is often missing a subject, a verb, or both, making it grammatically incorrect. It can also occur when a dependent clause is used alone.

For example:

- Incorrect: Studying very hard on weekends.
- Correct: Studying on weekends is very hard.

**b. Run-on sentence:** This occurs when two or more independent clauses are improperly joined, either without any punctuation (a fused sentence) or with incorrect punctuation, such as a comma splice. For example:

- Incorrect: his family went to Australia then they immigrated to Canada.
- Correct: his family went to Australia, and then they immigrated to Canada.

**c. Choppy sentences:** short sentences can make writing feel abrupt or poorly connected.

They are common in writing but should be used sparingly in academic contexts. For example:

□ Incorrect: Wind is an enduring source of power. Water is also an unlimited energy source.

- Correct: Both wind and water are enduring sources of power.

**d. Sprawl sentences:** these are overly long sentences filled with excessive phrases, clauses, or unnecessary subordination and coordination. For example:

- Incorrect: In the event that we get the contract, we must be ready by June 1 with the necessary personnel and equipment to get the job done, so with this end in mind a staff meeting, which all group managers are expected to attend, is scheduled for February 12.

- Correct: A staff meeting including all group managers is scheduled for February 12 to plan for the contract, if received, and ensure readiness by June1.

**e. Non-parallel structures:** Parallelism means that items in a list or comparison follow the same grammatical structure. The lack of parallel structure makes sentences confusing. For example:

- Incorrect: this report is an overview of the processes involved, the problems encountered, and how they were solved.
- Correct: this report is an overview of the processes involved, the problems encountered, and the solutions devised.

**f. Word order errors:** Refer to the incorrect arrangement of sentence elements .EFL learners often make such errors, which can affect the clarity and meaning of their sentences. As mentioned by Alexopolou et al. (2020)” these errors frequently occur when learners encounter sentence constructions that are unfamiliar in their native language”. For example, English uses a fixed subject-verb-object (SVO) order, which can confuse learners from languages with different word order rules, such as subject-object-verb (SOV)”.(p.5).Since the mother tongue of EFL learners in this context is Arabic, which follows a different word order than English , typically verb-subject-object ( VSO), learners may struggle with arranging words correctly in English sentences. This structure is commonly used in formal and literary contexts such as

Kataba al-waladu ad-darsa (VSO), it is translated as the boy wrote the lesson (SVO). However, subject-verb-object (SVO) order is widely used, especially in modern spoken Arabic (dialects) and informal contexts. For example: Al-waladu kataba ad-darsa (SVO)

translated as the boy wrote the lesson. Arabic word order is relatively flexible; relying on a system of grammatical roles where changing the word order can emphasize certain elements in a sentence. It often depends on the context in which the language is used.

Therefore, EFL learners face different grammatical challenges in writing academically, for example subject-verb agreement, verb tense issues, misuse of articles, problems with sentence structure and word order errors, which can be due to several reasons, such as lack of knowledge or due to differences of languages (Arabic as the mother tongue and English as the learned language) other reasons can appear depending on each student states and knowledge.

The second common challenge that EFL learners can face in their academic writing can be a lack and limited vocabulary when writing about a particular topic. As mentioned by Gonzalez-Fernandez&Schmitt (2015), many EFL learners lack exposure to discipline-specific vocabulary necessary for academic writing. This shortage impacts their ability to express complex ideas clearly and concisely. Academic writing demands precise terminology, which often beyond the general vocabulary taught in EFL settings (p.96). In addition, cultural and contextual gaps are an obstacle to many EFL learners in which, they often struggle to understand and use words with cultural or contextual nuances common in academic discourse. For instance, idiomatic expressions or specific collocations are critical in academic writing but are challenging for learners to master without authentic practice (Lu & Dand, 2023). Thus, EFL learners can enhance their vocabulary using different strategies and emphasizing reading academic texts to enhance their limited knowledge.

The third common challenge EFL learners face in their academic writing is the lack of coherence and cohesion in their written work. Coherence refers to the logical flow of ideas in a text. EFL learners frequently struggle to structure their essays, making it difficult for readers

to follow their arguments. These problems arise due to limited understanding of discourse markers, weak organization of paragraphs, and a lack of clarity in presenting ideas. Research highlights that repetition, over-generalization, and inappropriate transitions contribute to incoherent writing (Ariyanti&Fitriana, 2017; Salem, 2022). On the other hand, cohesion deals with how sentences and paragraphs are linked using grammatical and lexical devices like pronouns, conjunctions, and synonyms. Many EFL learners misuse or overuse these devices, leading to ambiguity or redundancy in their writing. A significant challenge is mastering using pronouns, parallel structures, and transitional expressions, which are critical for maintaining sentence and paragraph unity (Aguieb&Bouaziz, 2017; Ahmed, 2010).

Coherence and cohesion require the learners to use the language correctly in terms of arrangement of ideas logically and to link them using correct grammatical and lexical devices to make the piece of writing easy for the reader to understand it. Thus, EFL learners often struggle to achieve producing well-structured essays.

Among the common challenges EFL learners can encounter in their academic writing is writing under time constraints. Particularly in exams or tests where the teacher gives the instructors to write about and limits the time to stop and return the papers, students may feel pressure and more stress, which will affect their writing quality. Limited time can lower students' motivation to produce well-structured essays. Lee,2017; Lim&Phua,2019 argue that limited time affects learners 'confidence and motivation, discouraging them from investing effort into refining their work. This often results in incomplete or underdeveloped essays, impacting their overall performance. In other words, limited time puts pressure on students and results in poor writing quality. Therefore, EFL learners need to manage their time effectively by using various strategies to reduce stress and produce well-structured essays.

Thus, EFL learners can organize their time during the exams and use different strategies to produce good pieces of writing.

Cultural differences between English and Arabic writing pose significant challenges for learners, especially Algerian students whose mother tongue is Arabic. These differences can make it difficult for them to produce well-written essays in a foreign language. Hamzaoui Elachachi (2015) highlighted that language reflects the culture of its speaking community, making foreign language learning challenging when cultures are significantly different, as with English and Arabic. Written texts and conventions differ based on cultural backgrounds. She added that Algerian EFL students face challenges in conforming to English writing norms due to cultural transfer from Arabic. Key areas of difficulty include morphology, syntax, rhetorical styles, and cultural expressions. For morphology, Arabic's root-based word formation leads to confusion in English word usage (e.g., verbs and nouns). Syntax, differences in word order, auxiliary verbs, articles, and prepositions create frequent errors. For instance, students often misplace adjectives or misuse articles. Rhetorical styles differ between English and Arabic. Arabic tends to favour coordination (linking ideas using words like 'and'), while English prefers subordination, using complex sentence structures to show relationships between ideas. Repetition, valued in Arabic rhetoric for emphasis, is seen as redundant in English writing. Metaphoric style, Arabic writing often includes proverbs and culturally specific idioms that do not translate well into English, leading to misunderstandings or awkward phrasing (Hamzaoui Elachachi, 2015). All in all, cultural differences between learners' mother tongue and the target language play a crucial role in influencing the quality of EFL learners' academic writing.

Another common challenge that EFL learners face in academic writing is an over-reliance on translation. Since their mother tongue is Arabic, they often translate words from English to Arabic to understand the meaning. This technique can help learners acquire new vocabulary however over-reliance on it can have negative impact on students writing. EFL learners often tend to use Google translate as a tool to translate. As noted by Abdou and Aziz (2021), Google Translate (GT) has been found to improve the writing performance of EFL learners. For low-proficiency learners, GT helps with spelling, grammar, and vocabulary acquisition, allowing them to produce more complex texts; however, its reliance on literal translation often results in errors with idiomatic expressions and cultural nuances, highlighting its limitations for academic writing. Thus, using translation as a tool to enhance vocabulary knowledge can support learners in academic writing; but over-reliance on it can negatively affect the quality of their writing.

All in all, EFL learners face various difficulties that make academic writing a challenging task. Therefore, learners need to be more attentive in choosing the correct words within the appropriate context to produce well-structured pieces of writing.

### **1.3 Conventional Writing Methods**

They refer to the formal writing style used in academic settings, which follows the standard rules of grammar, punctuation, and language use. According to Soka University of America (2023), conventional writing methods are typically formal and structured, adhering to established norms for grammar, syntax, and organization. These methods are often used in academic and professional settings to ensure clarity and precision in communication. In other

words, conventional writing methods refer to using a structured approach that includes specific strategies such as drafting, outlining, and revising to produce well – structured essays.

According to Graham et al.(2023), conventional writing methods encompass strategies such as brainstorming, where writers generate ideas freely; outlining, to organize content in a logical sequence ;draughting, which involves creating an initial version of the text; and revising and editing, where the focus shifts to refining ideas and improving grammatical accuracy. These methods emphasise a step-by-step approach to ensure clarity and coherence in writing. In other words, EFL learners are taught to follow conventional writing methods and use various techniques, such as brainstorming, where they generate different ideas about the topic using their drafts. After that, they can organise their ideas logically by using an outline. Then, they start writing the initial version of the essay. Also, they revise their initial writing by reorganizing and improving it. Reaching the step of editing, in which learners will focus on grammar, punctuation, and clarity of their writing. Finally, producing an error-free version of their writing by adding final touches.

### **1.4 Technology in Language Learning and Writing**

Technology in language learning refers to the application of digital tools and resources to facilitate language acquisition and writing. As defined by the British Council (2023), it enables learners to interact with authentic materials, access personalized practice, and receive real-time feedback, significantly enhancing language proficiency. This includes tools like language learning apps, online writing platforms, and multimedia resources. Similarly, ACTFL (2023) highlights that technology plays a supportive role in language instruction by offering tools for practising interpersonal communication, accessing culturally relevant content, and enhancing assessment processes. These technological methods aim to improve

learners' overall linguistic competence and intercultural understanding. Thus, using technology in language learning can positively impact the quality of learning and motivate learners by creating a more engaging learning environment.

### **1.4.1 Technology as a Means to Support Academic Writing**

The rapid rise of technology in the field of education has changed the way learners acquire their knowledge since new tools appeared that play a significant role in supporting learners, particularly learning foreign languages like English. The latter helps learners to enhance different skills, such as writing in the academic context. EFL learners tend to use technology to improve the quality of their writing. As claimed by Hyland (2013), technologybased tools such as grammar checkers, spell checkers, and automated feedback systems play a significant role in improving EFL students' writing accuracy. These tools provide immediate corrections and explanations, which help learners identify and address their errors. In addition, Chapelle and Voss (2016), they argue that technological tools can be personalised to meet individual learner's needs. Writing software that includes artificial intelligence, like Grammarly or AI-powered platforms, allows learners to work at their own pace while receiving tailored feedback. All in all, using technological tools for enhancing the quality of academic writing can be both helpful and practical.

### **1.5 AI Tools and Academic Writing**

Integrating AI tools alongside academic writing can be seen as a challenging task. The latter has been defined by different authors who highlight various types of tools that can improve academic writing quality, discuss their impact, and examine the challenges EFL learners may face when using them alongside traditional writing methods.

### 1.5.1 Definition and Types of AI Tools of Academic Writing

Artificial Intelligence (AI) tools in academic writing are defined as computer-based systems that assist learners in producing, editing, and refining their texts through automated processes. These tools use algorithms to analyse writing for errors, provide feedback, and enhance overall writing quality. As observed by Ranalli (2021), AI tools such as grammar checkers, style analyzers, and plagiarism detectors have transformed the way students approach writing by providing real-time suggestions and reducing the effort required during revisions. Thus, in the context of academic writing, AI tools are used for specific purposes, such as grammar error checkers, to enhance the quality of written work.

AI has various types that help learners to assist their writing skills; among them:

- a. Content generation tool:** the example of the application ChatGPT, which has multiple functions, particularly in learning foreign languages, can help learners develop their skills, such as writing. It generates ideas, texts, essays, articles, blogs, and reports. It helps develop stories, poems, or dialogues. It summarises lengthy texts into brief points. It adapts tone to formal, informal, or conversational to suit different writing needs. Moreover, it assists by supporting writing in multiple languages and simplifying complex language.
- b. Grammar and style checkers:** Grammarly is widely used among learners to check their grammar mistakes, punctuation, and style issues. It is designed to enhance writing by correcting learners' errors and mistakes. It can be used across platforms, such as email, Word, and mobile devices. It can also be used for plagiarism detection. Therefore, using Grammarly is helpful for EFL learners to improve their grammar and writing style, enhancing the overall quality of their work when used regularly.

c. **Paraphrasing and rewriting tool:** QuillBot is designed to enhance writing by rephrasing content, improving clarity, and helping in vocabulary selection. Many learners tend to use it to paraphrase original content, as it offers different modes, such as standard, fluency, and formal, to suit different styles of writing depending on the learner's preferences.

Thus, there are various AI tools; each designed for a particular purpose. These tools are widely used by learners to support different stages of the writing process, which is why their features and functions are important to highlight.

### **1.5.2 The Benefit of AI Tools in Academic Writing**

Using AI tools (ChatGPT, Grammarly, and QuillBot) among EFL learners has many benefits for their academic writing. First, these tools improve language accuracy. For example, Grammarly corrects grammar, punctuation, and spelling errors, helping learners identify their weaknesses in writing and work on improving them. Second, using ChatGPT offers explanations for grammar rules and provides suggestions on any topic. It can help learners use appropriate academic vocabulary in the correct context, which will help them learn new words to be used in different topics, and it can assist with organizing ideas or outlines logically to structure writing pieces. The third tool is QuillBot, which can be beneficial by refining sentences and improving fluency. It can help learners paraphrase different ideas, find alternative expressions, and restructure paragraphs or sentences to improve coherence and cohesion. Using these tools can reduce time spent revising drafts since they provide immediate feedback. Moreover, these tools are flexible and accessible across different devices and platforms to learners anytime, facilitating independent and autonomous learning. Thus, these tools by EFL learners can significantly enhance their academic writing skills by developing a deeper understanding of the English language.

### 1.5.3 The Challenges of Using AI in EFL Academic Writing

Although AI tools like ChatGPT, Grammarly, and QuillBot offer numerous advantages and benefits for EFL learners by integrating them into the academic writing process, it has several challenges:

- **Over-reliance on AI:** EFL learners may become overly dependent on AI tools, which can undermine their critical thinking and writing skills (Bhowmik, 2021). In other words, they over-relied on using AI tools, which can result in reducing their critical thinking and their ability to analyse ideas that, will harm their writing skills.
- **Difficulty understanding feedback:** Many learners struggle to understand AI-generated corrections due to limited language proficiency or technical knowledge, reducing the effectiveness of these tools (Li et al., 2020; Zhao & Mehlhorn, 2019). EFL learners often face difficulties understanding the explanations offered by different AI tools due to the lack of knowledge in the learning language, which can act as a barrier to understanding the feedback of the AI tools.
- **Ethical Concerns and Academic Integrity:** The use of AI tools raises concerns about plagiarism and originality, as some learners might misuse these tools to produce academic content (Ellis, 2023; Green et al., 2023). In other words, EFL learners often fall into plagiarism issues because they did not acknowledge the source of the content or issues of originality by copying the provided explanations by AI tools and presenting them as their own words, so that learners will be used to this, repeating it several times, they will be less effective in critically analyzing ideas.

- **Digital Literacy Barriers:** Many learners lack the digital skills needed to use AI tools effectively (Kohne, 2021). This means that some learners do not have enough knowledge to use AI tools properly, making it difficult for them to find the appropriate information.
- **Financial Constraints:** The cost of premium AI tools limits access for learners with limited financial resources (Prérez & Baralt, 2020). While AI tools can be used to some extent for free, full access often requires payment by card, which can be a barrier for many users.

Thus, using AI tools can be challenging for many EFL learners due to several obstacles they may face. However, these tools also offer numerous benefits that can help learners improve the quality of their academic writing if used wisely.

### 1.6 The Impact of AI Tools on Writing Skill

The use of AI tools among EFL learners can bring various benefits and positively contribute to enhancing their academic writing. According to Aljuaid (2024), AI tools offer several benefits to EFL learners in academic writing. These include enhanced efficiency and automation. “AI tools can enhance efficiency by automating tasks like grammar and syntax checks, allowing students to focus on higher-order aspects of writing” (p.37). The second benefit is providing instant feedback on writing mechanics and coherence: “AI-driven writing tools favourably impact students writing skills by delivering prompt and personalized feedback” (p. 3). Moreover, it offers greater accessibility. “AI tools such as Grammarly and Word Tune offer writing support for a broader spectrum of students, including non-native English speakers” (p. 2). In addition to helping students overcome cognitive challenges, “Tools like ChatGPT facilitate the generation of text-based material, making writing more accessible for students and saving time” (p. 2). Finally, AI tools provide personalized learning

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experiences tailored to individual needs (p.38). In other words, AI tools can facilitate the process of academic writing by checking their grammar errors and correcting them immediately by providing the feedback needed to produce coherent and cohesive pieces of writing. Thus, using AI tools can facilitate academic writing and positively impact its overall quality.

The impact of AI tools can be damaging, particularly when learners misuse them. According to Aljuaid (2024), the drawbacks include reduced critical thinking and creativity, which may lead to over-reliance, reducing student's capacity for critical analysis and creativity in writing (p.28). In addition, plagiarism and ethical concerns arise because AI tools generate content, which may lead students to fail to properly attribute original authors or rely too heavily on AI without fully understanding the material, thus increasing the risk of plagiarism (p.30). Also, students may develop a superficial understanding of academic writing concepts due to over-dependence on automated corrections rather than manual effort (p. 38), This means learners might rely solely on AI tools for corrections without making their own efforts. In addition to limited access to technology among disadvantaged students, which can be a barrier for them, there are some learners who cannot use technological devices due to limited access. Moreover, a lack of subject-matter expertise in which AI tools may lack the ability to understand complex academic topics, leading to inaccuracies and shallow analysis (p. 40). Since, learners have a lack of knowledge about the learning language, there are some topics precisely need to be explained by the teacher himself to clarify them to the learners, although AI tools can provide explanations but not like human teachers do. Finally, using of AI systems to process sensitive data raises concerns about privacy and data protection (p.38). In other words, these tools can be targeted by hackers who may gain access to sensitive academic or personal data, thus compromising students 'privacy.

All in all, using AI tools has both advantages and disadvantages, depending on how learners use them. Therefore, learners must be aware that overusing these tools can harm their writing quality rather than improving it.

### **1.7 Combining Conventional Methods with AI Tools in EFL Academic**

#### **Writing**

Academic writing can be a challenging task to be achieved by EFL learners; producing cohesive and coherent texts requires mastering conventional writing methods specific to each type of academic writing. However, sometimes using those methods alone is not enough, so integrating AI tools can have a positive impact on learners' writing quality. As argued by Choukaier (2024), integrating AI tools with traditional writing methods is discussed with the following points: First, it enhances personalisation since AI tools can adapt learning content to individual learners needs, offering personalized support while traditional strategies provide foundational understanding (p.3813). The second point is that AI tools provide instant feedback on grammar and writing quality, which can reinforce traditional practices like brainstorming and drafting (p. 3815). In addition to efficiency in error correction, combining AI-driven feedback with teacher guidance enables more efficient identification and correction of errors, reducing the time spent on repetition tasks (p. 3816). Also, integrating AI tools with traditional pedagogy ensures that technological advancements complement rather than replace human interaction and critical thinking development (p. 3819). Thus, integrating AI tools with conventional writing methods helps EFL learners improve their academic writing quality and motivates them to be more autonomous learners.

#### **1.7.1 Challenges of Combining Conventional Writing Methods and AI**

### Tools

Although the idea of combining conventional writing methods with AI tools can positively develop learners writing skills and meet their needs, it can be a challenging task to be achieved due to several problems. According to Choukaier (2024), several challenges can arise, which are as follows:

**-Digital divide:** Not all learners have equal access to advanced technological tools, which creates challenges among different groups of learners (p. 3816). This means that if a teacher combines conventional writing methods with AI tools, some students may face difficulties due to a lack of technological resources.

**-Teacher training needs:** Many teachers require significant training and professional development to effectively use AI technologies and integrate them with traditional teaching methods (p. 3816). This highlights the crucial role teacher's play in ensuring the successful implementation of AI tools alongside conventional practices.

**-Over-reliance on technology:** There is concern that dependence on AI could diminish the human element of teaching and reduce critical thinking and interpersonal communication (p. 3819). Using AI tools can hinder learners' critical and analytical thinking skills, which presents a challenge when integrating them with traditional writing methods.

**-Technical issues:** challenges such as the steep learning curve for educators, the need for ongoing technical support, and potential technical failures can hinder AI integration (p.3816). The latter means integrating AI tools with conventional writing methods can be associated with different technical challenges, like misunderstanding the effective use without proper guidance or failure in the systems of the tools suddenly so that it needs consistent technical support, which can disrupt the learning process and reduce trust in technology, and technical

glitches, updates, and maintenance of AI systems require technical support, which might not always be available. Thus, these challenges can hinder the learning process using technology.

**-Bias in AI algorithms:** AI tools can perpetuate biases present in their training data, which may disadvantage certain groups of learners if not addressed properly (p. 3819). This represents a significant challenge in integrating AI tools into academic writing, as it may lead to unequal learning outcomes if not properly addressed. This can lead to an unfair or unequal outcome, disadvantaging certain groups of learners. Ensuring fairness requires diverse training data and continuous evaluation.

**-Privacy and data security:** The collection and use of personal data by AI systems pose privacy risks and require adherence to stringent data protection (p. 3819). The latter involves the risks associated with collecting and using learner's personal data in AI systems. Ensuring compliance with data protection laws and maintaining transparency about data usage is crucial to addressing these concerns.

**-Ethical considerations:** Long-term dependence on AI could impact the autonomy of teachers and learners, as well as shift educational priorities in potentially undesirable ways (p.3819). It concerns the long-term effects of relying on AI tools in education. Overdependence could reduce teacher and learner autonomy and shift focus away from critical skills like problem-solving and interpersonal communication.

### 1.8 Significance of the Study

The present research aims to investigate the impact of combining AI tools with conventional writing methods on EFL learners' academic writing. It offers insights into how technology can complement conventional teaching strategies to enhance the academic writing quality of the learners.

Through engaging in the study, many researchers focus separately on traditional writing methods or using technology as a tool to enhance the writing quality. However, the present study fills the gap by examining the practical implications of using AI tools alongside traditional writing strategies, offering a comprehensive view of the impact of the combination of them.

The current study focuses on the practical implications for teachers and students since teachers can use the findings to design more effective teaching methods that integrate AI tools and conventional techniques in order to improve students' writing skills. On the other hand, learners can benefit from a blended approach that helps them overcome specific challenges, such as lack of vocabulary or cohesion issues, making writing more accessible and engaging.

The advancement of technology in the field of education has impacted the way students learn foreign languages in particular. The current investigation emphasizes the importance of integrating modern technology like AI into education, showcasing its potential to transform the learning experience. Integrating AI tools alongside conventional writing methods can motivate learners to learn in an engaging environment and facilitate their challenges of producing well-structured and cohesive writing pieces. Exploring the effectiveness of combining AI tools with traditional methods offers practical solutions to help EFL learners overcome challenges in academic writing.

The study can inspire future researchers to explore other combinations of AI tools and conventional teaching methods across different skill areas or learner groups. Thus, it may lead to further investigations into how AI can address diverse language learning needs.

### **1.9 Conclusion**

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In conclusion, literature review chapter highlighted key areas related to AI tools and conventional writing methods by presenting a wide range of concepts and previous studies aligned with the research objectives, thereby offering a clear understanding of the various elements involved. It has explored the challenges EFL learners face in academic writing. It also examined the role of conventional writing methods and the increasing use of AI tools in supporting writing development. While AI tools offer significant benefits such as immediate feedback and personalized learning, they also present challenges like over-reliance and ethical concerns. The review highlighted the importance of combining traditional and technological approaches to enhance EFL learners' academic writing, setting the foundation for the current study.

# **Chapter Two**

## **Research Design and Methodology**

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### **2.1 Introduction**

The second chapter of this research will highlight the methodology used to collect data from the sample population chosen to fulfil the research needs. It was conducted with third-year EFL Algerian learners and English teachers from the Department of Letters and Language at the University of Ain Temouchent. Moreover, this chapter will offer a detailed description of the research design, research approaches, aims and motivations of the study, sample population, data collection instruments, data analysis, and validity and reliability of the research. Finally, ethical considerations are highlighted to respect the rights, dignity, and confidentiality of the participants involved in this study.

### **2.2 Research Aims and Motivation**

The growing role of AI in the field of education inspires the researcher to explore its application in enhancing academic writing skills among EFL learners since many of them face various challenges in producing well-structured pieces of writing, particularly for third-year EFL learners as they are preparing for their bachelor's degree in the English language, they are asked in the majority of the module to write essays so that they struggle to write coherent and cohesive ones. This study aims to explore the potential of integrating AI tools with traditional writing methods to enhance learners' academic writing. Additionally, it seeks to address the challenges learners face in academic writing and evaluate the effectiveness of AI tools in improving them. Throughout this study, the researcher aims to provide insights into both learners' and teachers' attitudes toward the use of AI tools and their integration into traditional writing practices. Lastly, by examining the integration of AI tools and traditional methods, this research contributes to the ongoing discourse on modernizing language teaching practices.

### 2.3 Research Design

Research design refers to a structured framework or blueprint that guides the process of conducting research, including the collection, measurement, and analysis of data. It involves a comprehensive plan that includes decisions about the research problem, objectives, and questions, as well as the methodology to be used. It answers a set of critical questions such as what data is needed, where and how can this data be collected, which techniques will be employed to analyze the data, and how will validity and reliability be ensured. It was defined by different authors, among them Creswell (2024), who defined it as the specific procedures used by the researcher in data collection, data analysis, and report writing. Moreover, Mouton noted that « a research design is a plan or a blueprint of how you intended to construct a research » (p.55). Thus, research design facilitates the research process across various fields.

#### 2.3.1 Research Approaches

Research approaches are strategies and procedures encompassing the plans and methods employed for collecting, analyzing, and interpreting data. According to Creswell (2018), research approaches can be categorized into three main types: quantitative, qualitative, and mixed methods, each aligning with specific philosophical worldviews and research problems. In other words, it provides a framework that guides the entire research process, including how to collect, analyze, and interpret data. Based on the research needs and objectives, the researcher determines the most suitable research approach to achieve the objectives of the study. Each type of approach is characterized by its characteristics, which make it unique from the other one, and each one serves particular needs of the research using different tools and instruments to collect data so that deciding about the research approach used to conduct

any research will facilitate the process of collecting the needed data using the suitable instrument to end up with accurate results.

### 2.3.2 Qualitative Approach

The qualitative approach is a research methodology seeks to explore, understand, and interpret phenomena in their natural settings. It emphasized subjective experiences, points of view and perspectives. According to Creswell (2013) defines it as:

Qualitative research is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. It involves emerging questions and procedures, data typically collected in the participant's setting, data analysis inductively building from particulars to general themes, and the researchers making interpretations of the meaning of the data. (p.4)

Qualitative approach has several characteristics that make it unique compared to others, including its focus on subjective experiences to capture participants' perspectives. Researchers often follow an open-ended design, allowing them to adjust their questions based on participant's responses. The qualitative approach includes various data collection methods, among which interviews are commonly used. In this method, the researcher meets with participants and asks a set of questions (structured, semi-structured, or unstructured) to encourage them to elaborate on their experiences and perspectives. Another data collection instrument is the focus group. It involves a small group of participants discussing a specific topic guided by a researcher, where he/she will observe group dynamics and their shared ideas. Moreover, the researcher can use observation as a data collection method within the research setting, either as a participant by actively engaging with the subjects, or as a nonparticipant by observing their behaviors without direct involvement. In addition,

document analysis can be used, which involves examining written or visual materials such as reports, letters, diaries, photographs, or videos, depending on the research objectives and needs.

Finally, using a case study. Yin (2014) defines it as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (p.16). The latter means it provides a comprehensive exploration of a single case or multiple cases using various data sources such as interviews, observations, and documents to develop a holistic understanding of the research. All in all, using the qualitative approach requires collecting information and data from the participants to fulfil the research needs and objectives.

### **2.3.3 Quantitative Approach**

The quantitative approach is a systematic investigation seeks to gather measurable and statistical data. It is used to test hypotheses, identify patterns, make predictions, and establish cause-and-effect relationships. It focuses on objectivity and reliability, making it useful for generalizing findings to larger populations. The researcher remains detached to minimize bias and ensures that data collection methods are standardized. Creswell (2014) defines it as:” An approach for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, that numbered data can be analyzed using statistical procedures”(p.4). This definition emphasizes that quantitative research is theory-driven and seeks to establish relationships between variables. It focuses on identifying, measuring, and interpreting relationships between variables to derive meaningful conclusions. Also, it prioritises neutrality and minimizes researcher bias. In addition, using numerical data to ensure generalizability.

In the quantitative approach, researchers use various tools and instruments to collect numerical data. Questionnaires and surveys are structured sets of questions designed to collect data from a large number of respondents, aiming to gather diverse opinions and perceptions from various segments of the population regarding the research topic. Thus, the quantitative approach focuses on collecting numerical and statistical data with the aim of capturing various perspectives and points of view from different participants in order to fulfill the research objectives.

### **2.3.4 Mixed Approaches**

Using both qualitative and quantitative approaches together results in a mixed-approach, which is widely employed to provide a comprehensive perspective on the research through the use of diverse tools. Creswell and Plano Clark (2018) define it as a research methodology that combines elements of both qualitative and quantitative research approaches to provide a better understanding of research problems than either approach alone. It integrates data collection, analysis, and interpretation within a single study or series of studies. The latter means mixing both approaches provides more details to the study and more explanations of the research questions, needs and objectives so that the reader will have a clear explanation about the topic being studied.

This research adopts a mixed methods design to thoroughly examine the combined effects of AI tools and conventional writing methods on academic writing among EFL learners . For the qualitative approach, the researcher conducted interviews with teachers at the University of Ain Temouchent to gather their perspectives and viewpoints on the integration of AI tools with traditional writing methods and their impact on learners' academic writing. Furthermore, the quantitative approach, the researcher administered an online

questionnaire to third-year EFL learners in order to collect extensive information about their experiences, perspectives, and opinions regarding the use of AI tools alongside conventional writing methods. Therefore, combining both approaches and employing two different instruments to collect data from the participants enhances the validity and generalizability of the current research study.

### 2.4 The Present Case Study

A case study is a research approach that involves an in-depth investigation of a particular phenomenon within its real-life context. Robert K. Yin, a prominent figure in this field, defines a case study as “an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin, 2018, p.15). It allows researchers to explore complex issues, providing rich insights that might not be achievable through other methods. Several scholars have categorized case studies based on their purposes and methodologies. Notable classifications include those by Robert K. Yin (2018), there are three main types:

**a.Exploratory case study:** Yin (2018) explains that this type is advantageous when researchers are in the early stages of investigating a phenomenon and need to refine research questions before conducting broader studies. It is used to investigate situations with little prior knowledge, aiming to develop hypotheses and define future research questions.

**b.Descriptive case study:** According to Yin (2018), a descriptive case study requires a preexisting theoretical framework to guide the research, ensuring that the study systematically describes the case. It aims to provide a detailed, in-depth account of a phenomenon within its real-life context.

**c.Explanatory case study:** Yin (2018) highlights that explanatory case studies are often used in complex situations where multiple variables interact, making them useful for examining cause and effect relationships. It seeks to explain causal relationships and analyze “how” or “why” certain events occur.

In the present research, the researcher adopted an exploratory case study to investigate integrating traditional writing methods with AI-powered tools to enhance academic writing among EFL learners. Given the evolving role of technology in education, this research aims to explore how combining structured writing techniques with advanced AI assistance can improve cohesion, coherence, and overall writing quality. By examining student’s experiences, challenges, and perceptions, the study seeks to uncover insights that can inform more effective writing instruction in EFL contexts.

### **2.5 Sample Population**

In research methodology, the sample is a subset of individuals selected from a larger population to represent that population in a study. This selection allows researchers to conclude the entire group without examining every member. As defined by Bhandari (2020),” A sample is the specific group that you will collect data from. The sample size is always less than the total size of the population”.

In the present case study, the sample population consisted of third-year EFL learners from the Department of English Language, Faculty of Letters Languages, and Social Sciences at Belhadj Bouchaib University of Ain Temouchent. There are four groups, each consisting of approximately 35 members. The purpose behind choosing this sample was due to the fact that those students have dealt with different modules that instruct them about writing academic pieces about different topics from the first year till the third year .Since, they are about to graduate with a bachelor’s degree in the English language they are asked to write different

essays in different modules such as Linguistics, Didactics, literature...ect. Yet, they still face problems about writing quality so that an online questionnaire is designed to them to collect as much data as possible in order to come up with an adequate solution. In addition, three teachers of third-year EFL learners were selected as participants in the data collection process.

A semi-structured interview was designed to gather information from this sample, as these teachers regularly engage with students' written work across various modules, providing valuable insights into their academic writing.

### **2.6 Data Collection Instruments**

Data collection instruments are tools or methods used to gather information for research purposes. These instruments help researchers systematically collect, record, and analyze data to answer research questions, test hypotheses, and evaluate outcomes. Common examples include questionnaires, interview, observation, checklists, and tests. The selection of an appropriate data collection instrument is crucial to ensure the accuracy and reliability of the data obtained. The instruments are classified into two main categories: qualitative, quantitative data collection tools. The choice of an adequate instrument depends on the objectives of the research conducted.

#### **2.6.1 Questionnaire**

Questionnaires are research instruments consisting of a series of questions designed to gather information from respondents in a particular topic. It is a quantitative tool since the researcher is interested about gathering as much data as possible from the participants. It is widely used across various fields, including education, psychology, and social sciences. It was defined by several authors, among them Brace (2018), as a set of questions used for collecting

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data, designed to obtain specific information from a target group, either through self-administration or interviewer administration”(p.5).

Questionnaires can be classified into several types based on their structure and mode of administration:

**-Structured questionnaire:** consists of predetermined, closed-ended questions allowing easy analysis.

**-Unstructured questionnaire:** contains open-ended questions that enable respondents to provide more detailed and subjective responses.

**-Self-administered questionnaire:** completed by respondents without direct intervention from the researcher.

**-Interviewer-administered questionnaire:** conducted with an interviewer who records responses.

A good questionnaire should adhere to a set of features in order to be well-constructed. First of all, clarity and simplicity in which questions should be clear, concise, and easy to understand so that the participants can provide their answers easily. Second, each question must be directly related to the research objectives to ensure relevance, and the arrangement of questions should follow a logical sequence to maintain coherence. In addition, the choice of questions must be made carefully and aligned with the predetermined objectives. The questions should be free from bias, well-structured, and logically arranged. Finally, the researcher needs to create balanced response options. When using closed-ended questions, the response choices should comprehensively cover all possible answers without leading the respondents.

In light of what have been tackled, the researcher has opted this data collection tool in her research in order to gather as much information as possible from the sample population chosen. The researcher took into consideration all the mention data about the form and the choice of the questions in order to make it easy for the participants to answer easily and to align with the set objectives of the questionnaire.

### 2.6.2 Interview

An interview is a qualitative research method to gather in-depth information from participants through direct verbal interaction. It allows researchers to explore opinions, experiences, and insights that may not be easily captured through other data collection methods. According to Kvale and Brinkmann (2015), an interview is “a conversation with a purpose, where the interviewer seeks to understand the meaning of central themes in the life world of the interviewee” (p.3).

Interviews can be categorized based on their level of structure and mode of administration:

- Structured interview:** consists of a predetermined set of standardized questions asked in the same order for all participants, ensuring uniformity and comparability.
- Semi-structured interview:** includes a set of key questions but allows for flexibility in probing deeper based on the respondent’s answers.
- Unstructured interview:** based on open-ended and conversational, allowing the interviewer to explore topics in a fluid and spontaneous manner.
- Focus group interview:** involves multiple participants discussing a topic, guided by a facilitator.

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**-Online interview:** conducted remotely via phone or digital platforms, allowing for greater accessibility.

A high- quality interview should adhere to a set of principles which are as follows:

- ✓ Clear objectives: researchers must set clear purposes for the interview to align with the research questions and primary objectives.
- ✓ Well-designed questions: researchers should begin with general topics and gradually move toward more specific areas. This approach helps interviewees feel more comfortable and encourages them to provide detailed responses.
- ✓ Active listening: during the interview, the researcher should engage with the respondent, showing attentiveness and encouraging elaboration to create a comfortable atmosphere for the interviewee to engage and provide clear information about the discussed topic.
- ✓ Flexibility: particularly in semi-structured and unstructured interviews, allowing the conversation to adapt based on the participant's responses.
- ✓ Ethical considerations: require researchers to ensure confidentiality, obtain informed consent, and respect the privacy and autonomy of the interviewees throughout the research process.

Based on the preceding analysis, the researcher uses as a qualitative instrument a semi-structured interview with the teachers in the University of Ain Temouchent for the sake of gathering as much data as possible about the use of traditional writing methods besides Artificial Intelligence tools in order to improve the writing quality of third year EFL learners. This tool provides the research in hand with valuable information since, the researcher takes into

consideration the mentioned principles to ensure the effectiveness of this instrument so that it can align with research questions and objectives since it deals with the sample population that faces the issue of having difficulties with producing well-structured pieces of writing so that using an interview with the teachers of the learners can help the researcher to reach practical answers and valuable data in order to come up with accurate suggestions to the research in hand.

### **2.7 Data Analysis**

Data analysis is a critical research component compassing various methodologies to interpret and derive meaning from data. It has been defined by various authors, including John Creswell, as an ongoing process that involves continually reflecting on the data, asking analytic questions, and writing memos throughout the study. This process encompasses organizing and preparing the data for analysis, reading through all the data, coding it systematically, generating themes or categories, interpreting the findings, and validating the accuracy of the results. John W. Tukey(1962), a pioneering statistician, defined data analysis as: “Procedures for analyzing data, techniques for interpreting the results of such procedures, ways of planning the gathering of data to make its analysis easier, more precise or more accurate, and all the machinery and results of (mathematical) statistics which apply to analyzing data.”(p.1). In recent literature, Islam (2020) defines it as:” a process of cleaning, transforming, and modelling data to discover helpful information for business decisionmaking” (p.10). This process involves reviewing and interpreting collected data to derive meaningful insights.

Data analysis is approached through qualitative, quantitative, or mixed-methods strategies, offering distinct techniques and insights. First, qualitative analysis focuses on understanding the depth and complexity of human experiences and social phenomena. It

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involves collecting non-numerical data, such as interviews, observations, and textual materials, to explore patterns, themes, and meanings. According to Creswell (2018), qualitative research is characterized by its emphasis on participants' perspectives, the researcher's role as a key instrument, and the use of inductive reasoning to build patterns or themes. Standard methods include thematic analysis, narrative analysis, and grounded theory.

The second approach is quantitative analysis. It involves the systematic investigation of phenomena through statistical, mathematical, or computational techniques. This approach quantifies variables and uses statistical models to test hypotheses and examine relationships. Creswell (2018) describes quantitative research as a method used to test objective theories by examining the relationships among variables, which are measured and analyzed through statistical procedures. Techniques such as descriptive statistics; inferential statistics, regression analysis, and hypothesis testing are commonly employed to analyze numerical data.

In addition, mixed-methods analysis integrates both qualitative and quantitative approaches to offer a comprehensive understanding of the research problem. This methodology combines the strengths of both qualitative and quantitative data, allowing for corroboration and a more nuanced perspective. Creswell (2018) defines mixed-methods research as an approach that combines or associates both qualitative and quantitative forms. This integration can occur at various stages of the research process, including data collection, analysis, and interpretation. Mixed-methods designs, such as convergent parallel, explanatory sequential, and exploratory sequential, facilitate the integration of diverse data types to enrich the analysis.

In the current study, the researcher will adopt the mixed method data analysis to examine the data collected through the questionnaire and the interview. The data analysis is divided

into two parts. In the first part, the students' questionnaire will be carefully examined using quantitative methods, and the results will be illustrated in the form of graphs to provide a clearer explanation and interpretation of the data.

On the other hand, the interview, which follows a qualitative approach, was conducted with teachers of the written expression module who have experience teaching third-year EFL learners. Their responses will be carefully analyzed to explore their perspectives, insights, and opinions regarding the students' writing challenges and the effectiveness of various instructional methods. Through this qualitative analysis, the researcher aims to gain a deeper understanding of the teachers' experiences and attitudes, offering valuable insights into the impact of using Artificial Intelligence tools besides the traditional strategies in academic writing development.

### **2.8 Reliability**

Reliability in research refers to the consistency and dependability of a measurement instrument or procedure. It indicates the extent to which the instrument yields the same results upon repeated applications under identical conditions. Reliability refers to the consistency and stability of a measurement or test. A highly reliable test ensures that respondents achieve similar results over repeated assessments, minimizing random errors. However, perfect reliability is rarely attainable in real-world conditions. (Segal&Coolidge, 2018). Reliability is crucial in research because it ensures the consistency and stability of measurements. According to Kothari (2004), the importance of reliability can be seen in the following points:

- ❖ **Consistency in results:** reliability ensures that research findings remain stable when the same study is repeated under similar conditions.

- ❖ **Minimization of errors:** a reliable research instrument reduces random errors, making the data more dependable.
- ❖ **Enhancement of validity:** while reliability does not guarantee validity, a study must be reliable before it can be valid. A measurement that fluctuates excessively cannot accurately reflect what it intends to measure.
- ❖ **Reproducibility of findings:** high reliability means that other researchers can replicate the study and obtain similar results, strengthening the credibility of the research.
- ❖ **Trustworthiness in decision-making:** reliable research ensures that policies, strategies, and recommendations based on the data are well-founded and applicable in practice.

To enhance the dependability of the current investigation, the researcher ensured that all data collection instruments were aligned with the same research objectives. The questionnaire was administered to L3 students to gather insights into their experiences and challenges using artificial intelligence tools alongside traditional methods to enhance their writing skills. Moreover, the interview was conducted with teachers of the written expression module to explore their opinions and perspectives on integrating AI tools in academic writing.

### **2.9 Validity**

Validity in research refers to the extent to which a study accurately measures what it intends to measure. Several authors have defined it, among them Kane (2013), validity is “the process of evaluating the degree to which evidence and theory support the

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interpretations of test scores entailed by proposed uses of the test” (p.1). Kane emphasizes that validity is not just about whether a test measures what it claims to measure, but also about how well the interpretations and decisions made based on the results are supported by empirical evidence and theoretical reasoning. “According to Creswell (2018), validity in research refers to the accuracy and trustworthiness of the results, ensuring that they truly represent the concept or phenomenon being studied” (p.195).

Validity in research plays a crucial role because it ensures the credibility and reliability of findings. Here are some key reasons why validity is significant:

- ✓ **Ensure accuracy:** validity confirms that research instruments accurately measure the intended variables, reducing errors and misinterpretations.
- ✓ **Enhance generalizability:** high validity allows research findings to be applicable beyond the study sample, making the results more relevant.
- ✓ **Strengthens research integrity:** studied with strong validity contributes to knowledge development by providing trustworthy and replicable results.
- ✓ **Improves decision-making:** in applied research, valid results lead to more effective policies, educational strategies, and technological advancements.

In this study, validity is essential in assessing the effectiveness of AI tools in conjunction with traditional writing methods in academic writing among EFL students. To ensure research validity, multiple types of validity are considered:

- 1- **Content validity:** It refers to the extent to which the research instruments, namely the questionnaire and the interview, adequately cover the key aspects of the study, In this research:

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- The questionnaire and interview questions were developed based on an extensive review of existing literature on academic writing and AI tools.
- The items were carefully selected for ensuring their alignment with the study's objectives, particularly focusing on students' attitudes, perceptions, and challenges related to academic writing.

### 2- **Construct validity:**

It determines whether the research instruments measure the theoretical concepts they are intended to assess. In this study the researcher focuses on the following instruments to ensure the validity of it:

- The questionnaire is structured to evaluate students' engagement with traditional writing methods and AI tools, ensuring that each item accurately represents these constructs.
- The interview questions are designed to written expression teachers to explore more profound insights about their perceptions and attitudes about alignment with theoretical frameworks on academic writing and technology use.

Ensuring validity in this study is crucial for the following reasons:

- ✓ It enhances the credibility of the findings by ensuring that the data collected reflects students' experiences with AI tools and traditional writing methods.
- ✓ It improves the generalizability of the results, making them applicable to broader EFL contexts.
- ✓ It ensures that conclusions drawn from the study are based on reliable and accurate interpretations of student responses.

By incorporating different types of validity, this research strengthens the accuracy and trustworthiness of its findings, ultimately providing valuable insights into the role of AI tools in academic writing for EFL learners.

### **2.10 Ethical Considerations**

In research, ethical considerations refer to the principles, guidelines, and moral responsibilities that researchers must uphold to protect participants' rights, dignity, and wellbeing, while also ensuring the integrity and credibility of the study. According to Resnik (2015), "Ethical considerations in research are the norms that help distinguish between acceptable and unacceptable conduct, ensuring trust, accountability, and fairness in scientific inquiry". The latter means that researchers must adhere to ethical guidelines that prevent misconduct, such as plagiarism, data falsification, and the exploitation of participants.

Ethical considerations are a crucial part of research, playing an important role as it encompasses a set of principles that ensure the successful and respectful collection of data from the participants. One of the fundamental principles is respect for autonomy. Participants must be fully informed about the purpose of the study and how their data will be used. They should also have the right to withdraw at any stage without facing any consequences. The second principle is protecting the confidentiality of participants, especially when collecting personal opinions or data that could affect their privacy. In addition, researchers must ensure that participants are not exposed to any emotional, psychological, or social harm, allowing them to respond freely without feeling pressured, judged, or anxious. Moreover, ethical research requires that findings are reported honestly and without distortion. Researchers must avoid manipulating data to fit preconceived hypotheses. Finally, ethical research enhances the credibility and reliability of findings.

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In the current research, the researcher has taken into consideration the aforementioned principles to ensure the ethical integrity and successful implementation of the study. For the purpose of data collection in this study, two research instruments were utilized: a questionnaire and a semi-structured interview. These instruments were designed to gather insights from EFL learners regarding their experiences with academic writing, particularly to conventional writing methods and AI-based tools. Before participants proceeded with the questionnaire, they were presented with an informed consent statement at the beginning. This statement outlined the purpose of the study, assured participants of their anonymity, and confirmed their informed consent. To complement the questionnaire data, a semi-structured interview was conducted with written expression teachers. This format allowed participants to elaborate on their responses while ensuring that the core research themes were thoroughly addressed. Prior to each interview, participants were provided with verbal consent procedures, and their consent was recorded at the beginning of the interview.

The researcher ensured that participants' identities remained anonymous and that their data was kept confidential to build trust and encourage honest responses. Additionally, the questions in both the interview and the questionnaire were carefully designed to be neutral and non-threatening, ensuring participants felt comfortable and respected throughout the data collection process.

Ethical considerations are essential for ensuring that research is conducted responsibly, with respect for participants and the integrity of the study. The research has taken different principles into account by securing voluntary participation, ensuring confidentiality, designing non-biased research tools, and maintaining academic integrity. By upholding these ethical standards, the present research contributes not only to the academic discourse on AI in EFL writing but also sets a strong ethical precedent for future research.

### **2.11 Conclusion**

In this chapter, the researcher outlined the research methodology used to investigate the impact of artificial intelligence tools in conjunction with conventional writing methods on academic writing among EFL learners. First, the researcher presented the research design, specifying the use of a mixed-method approach, as it was the chosen methodology for this study. Then, presenting a detailed description of the population and sampling techniques, highlighting the criteria for selecting participants.

Additionally, the chapter provided a detailed description of the data collection instruments used in the study, namely the questionnaire and the interview. The data analysis methods were also discussed to illustrate how the collected information will be processed and interpreted.

By establishing a well-structured methodological framework, this chapter reinforces the reliability and validity of the study. The next chapter will focus on presenting and analyzing the collected data to determine the effectiveness and perceptions of AI tools in enhancing academic writing.

# **Chapter Three**

## **Data Analysis, Interpretation and Research Conclusions**

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### **3.1 Introduction**

The current chapter presents the research methodology adopted to explore the impact of artificial intelligence tools in conjunction with conventional writing methods on academic writing among EFL learners at BBU. It provides a comprehensive overview of the research design, the participants, the instruments used for data collection, and the data analysis

techniques. First, the chapter begins by justifying the choice of the research approach, explaining the design of a mixed-method incorporating both qualitative and quantitative techniques was deemed the most appropriate to address the research objectives. The selection of participants and the sampling techniques employed are then discussed to ensure the reliability and generalizability of the findings. Additionally, the data collection methods, questionnaires and interviews, are thoroughly described, along with the rationale for their selection. Moreover, the chapter describes the data analysis procedures used to interpret the collected data and derive meaningful insights. By presenting a structured and transparent methodology, this chapter lays a solid foundation for the presentation and discussion of the results in the following chapter. Ultimately, it ends by providing suggestions and recommendations.

### **3.2 Data Analysis**

The analytical process of the research instruments in this study was divided into two phases. First, the questionnaire, which served as an effective tool for gathering students' perspectives on academic writing and the use of AI tools was quantitatively analyzed and interpreted. Second, the researcher provided an in-depth analysis of teachers' insights and experiences regarding students' writing practices and the integration of AI tools, based on the data collected through interviews.

#### **3.2.1 Results Obtained from the Questionnaire**

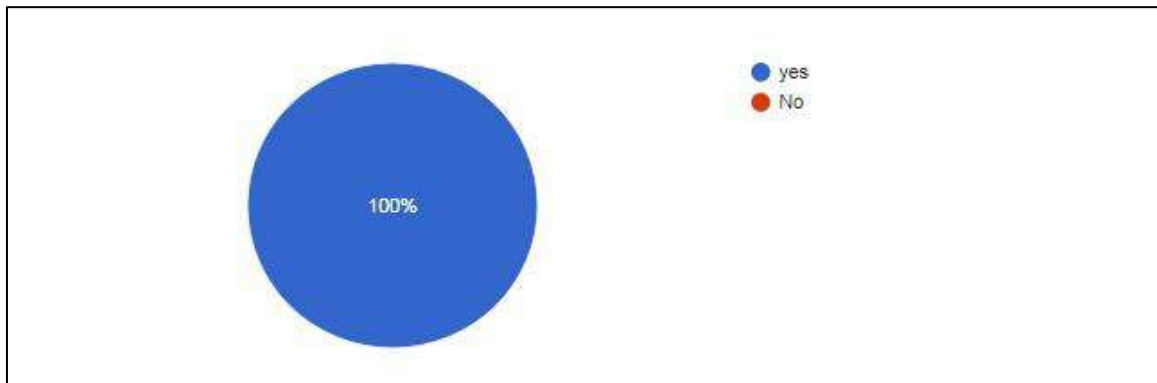
The online questionnaire was administered to third-year EFL learners in the Department of English at Belhadj Bouchaib University, with the aim of collecting their experiences and insights regarding the use of AI tools in conjunction with traditional writing methods to enhance their academic writing. The learners were divided into four groups, each consisting

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of approximately 25 students. The questionnaire was sent to the sample through emails and messenger groups. The researcher receives 60 answers, and the questionnaire consists of 11 questions; each one has its primary purpose, which can be analyzed as follows:

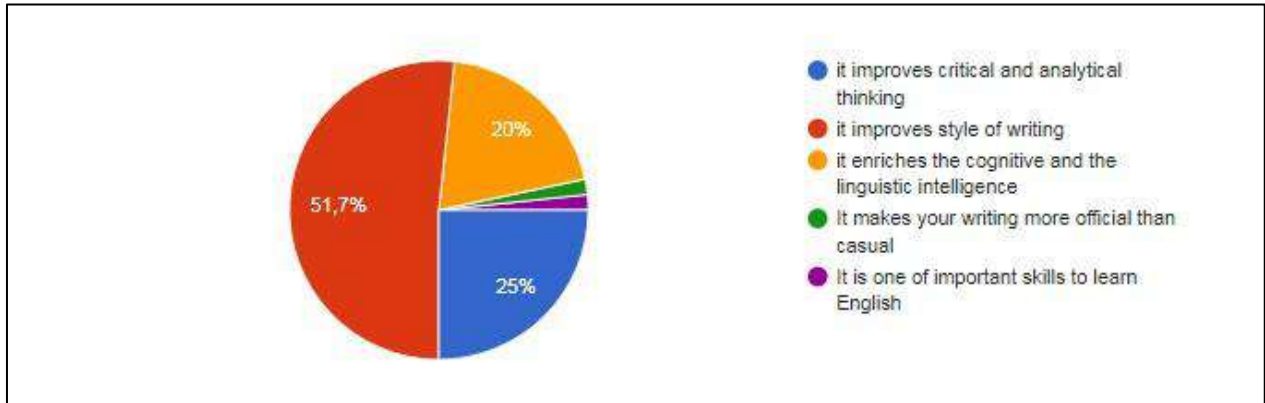
The first question was about the importance of academic writing in learning, which all the participants acknowledged its importance. The result can be illustrated in the following figure:



**Figure 3.1: The Importance of Academic Writing in EFL Context**

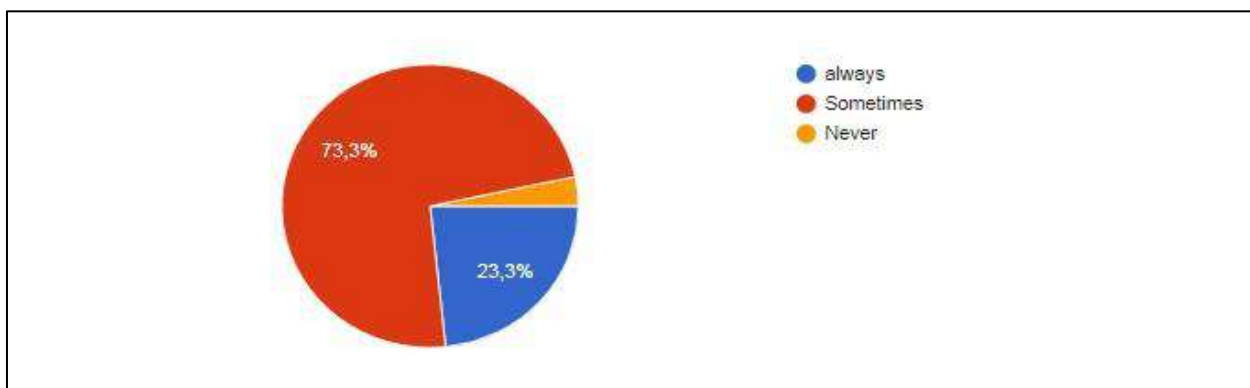
According to Figure 3.1, this unanimity suggests that students perceive academic writing as a fundamental skill in their learning process. Their justifications highlight two key aspects: critical and analytical thinking with 25% and improving writing style with 51,7%.the latter is illustrated in the second figure. These perspectives align with academic literature, emphasizing that writing fosters cognitive development and enhances communication skills.

The latter can be seen in Figure 3.2:



**Figure 3.2: The Significance of the Academic Writing**

The second question was about the frequency of academic writing practice in the classroom. The answers showed that most students (73.3%) indicated they practice academic writing ‘sometimes’, while a smaller proportion reported “never”. The results are shown in the following figure:

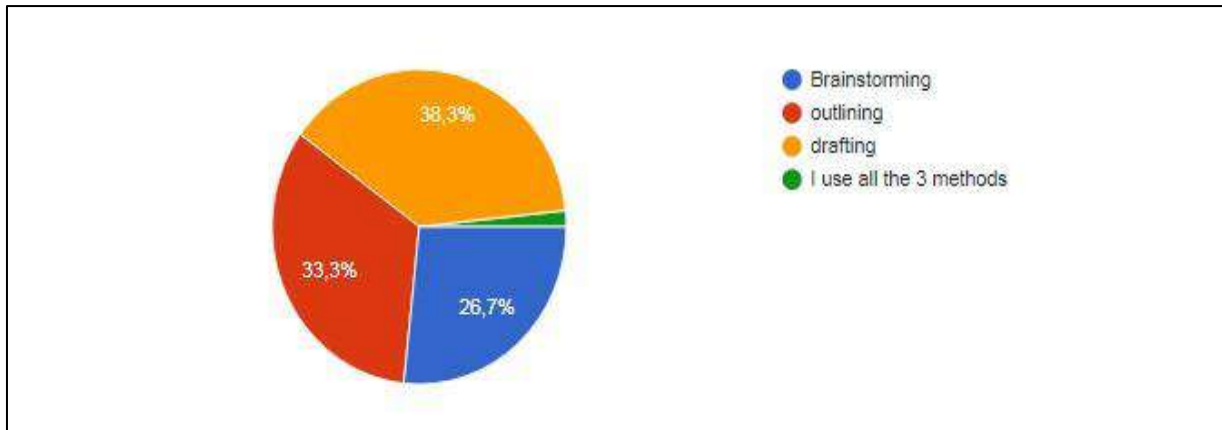


**Figure 3.3: The Frequency of Practicing Academic Writing in Classrooms**

According to figure 3.3, the inconsistency in practice frequency suggests that academic writing is not systematically integrated into classroom activities. This gap may hinder skill development, as regular practice is crucial for mastering writing conventions and improving coherence, cohesion, and argumentation.

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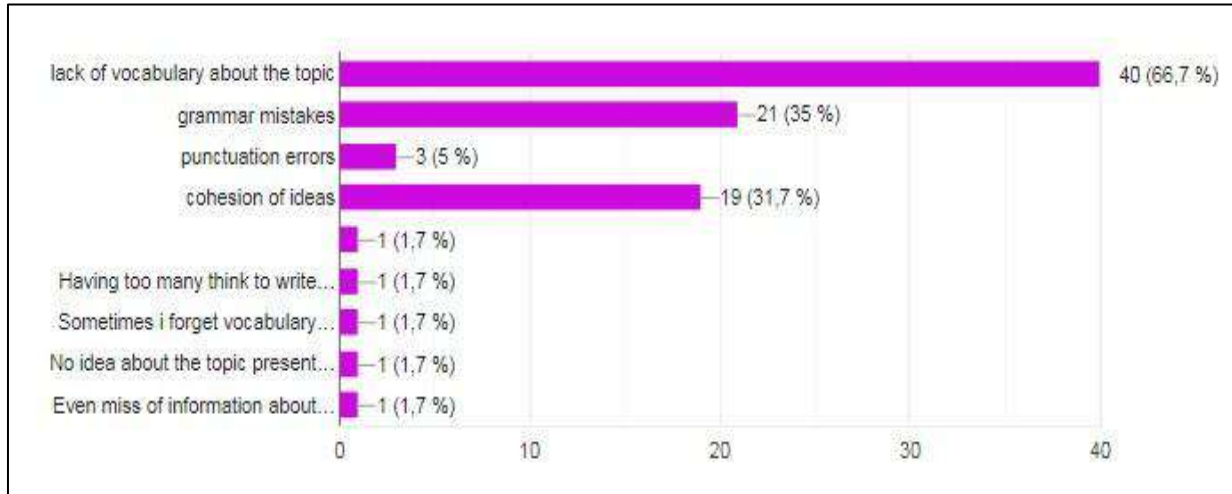
The coming question highlighted the purpose of selecting the traditional writing methods learners use most in their academic writing. Students reported using various methods, with drafting being the most commonly used (38.3%), followed by outlining (33, 3%) and brainstorming with (26, 7%). The latter can be illustrated in the following figure:



**Figure 3.4: Selection of the Traditional Writing Method**

As illustrated by Figure 3.4, the preference for drafting suggests that learners prioritize refining their ideas through multiple iterations rather than planning extensively before writing. However, the relatively lower use of brainstorming and outlining could indicate a lack of structured pre-writing strategies, which might contribute to difficulties in coherence and organization.

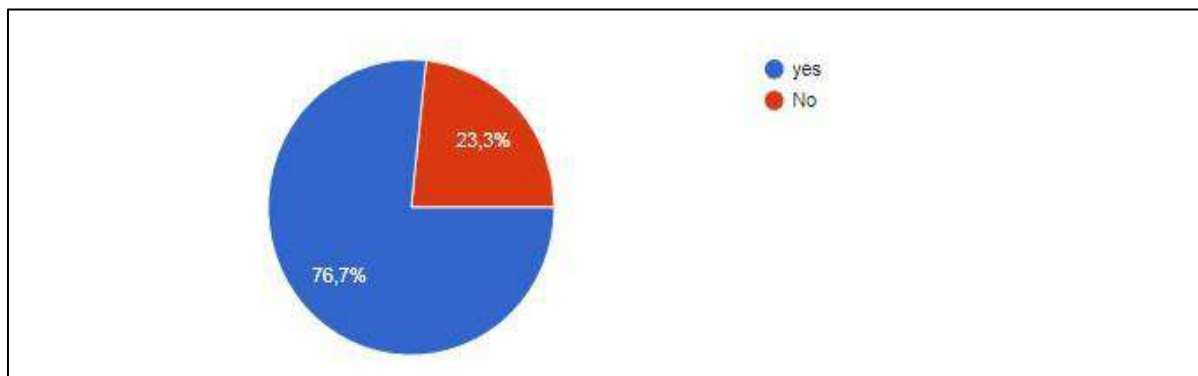
The fifth question aims to select the most common challenges learners encounter in their academic writing skills. The responses indicated that 40 students, representing 66.7%, identified lack of vocabulary related to the topic as a major challenge. Grammar mistakes were chosen by (35%) of the learners, cohesion of ideas (31, 7%) and punctuation errors (5%). The latter can be illustrated in the following figure:



**Figure 3.5: The Common Challenges EFL Learners encounter in their Academic Writing**

These challenges indicate that learners struggle with both linguistic and structural aspects of writing. The dominance of vocabulary-related difficulties suggests that lexical limitations constrain learners' ability to express complex ideas. Moreover, grammar mistakes can be a challenging task for the learners due to different reasons which may be lack of knowledge about the language, lack of focus during the writing process or due to time limit, pressure or stress. Finally, cohesion issues imply that students may not be fully equipped with strategies for organizing their arguments logically.

The coming question was about the effectiveness of Artificial Intelligence tools in academic writing. The responses were divided, with some students (76, 7%) affirming their effectiveness, while (23, 3%) disagreed. The latter can be represented in the following pie chart:



**Figure 3.6: The Effectiveness of Artificial Intelligence Tools in Academic Writing**

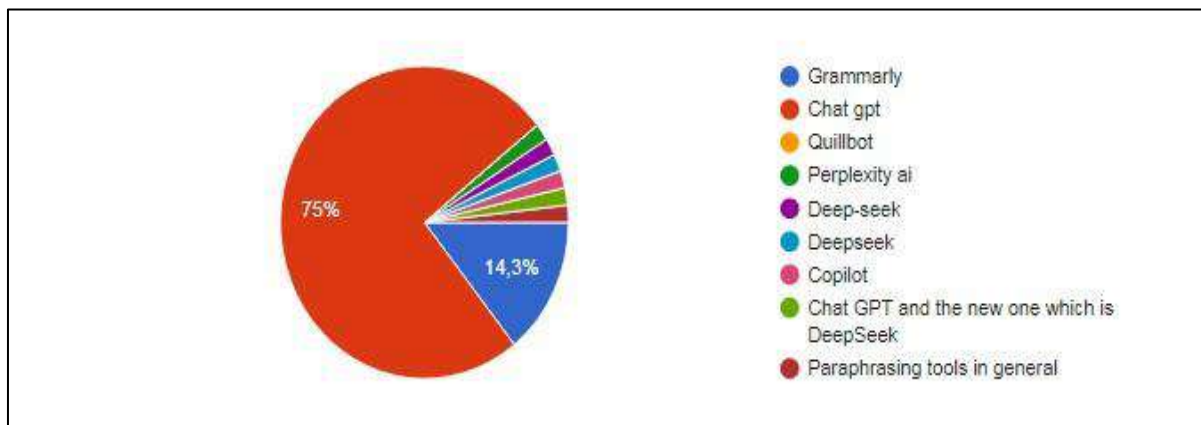
As figures by figure 3.6, the mixed responses highlight varying perceptions of AI's role in writing development. Those who view AI as beneficial cited ability to generate ideas and provide corrections. However, skepticism among some students may stem concerns about reliability, dependency, or ethical considerations, such as plagiarism risks.

The researcher added other open-ended question in order to allow the participants the opportunity to provide more examples illustrating the effectiveness of AI tools so that students who supported AI usage provided examples such as:

- AI tools suggest ideas for writing.
- AI tools assist grammar and spelling correction.

These examples confirm that AI is mainly used as a supportive tool rather than a replacement for independent writing skills. The finding suggests that AI can serve as a helpful assistant in academic writing but should be integrated cautiously to avoid over-reliance.

The following question aims to highlight the most frequently used AI tools among EFL learners. Students reported using various tools, including chatgpt (75%) and Grammarly (14, 3%). The latter can be seen in the following pie chart:



**Figure 3.7: The Most Common AI Tools among EFL Learners**

According to the figure, Learners tend to use diverse AI tools that have multiple functionalities, such as grammar correction (Grammarly), idea generation (ChatGPT), and content refinement (Copilot). This indicates that learners tailor AI use to their specific writing needs.

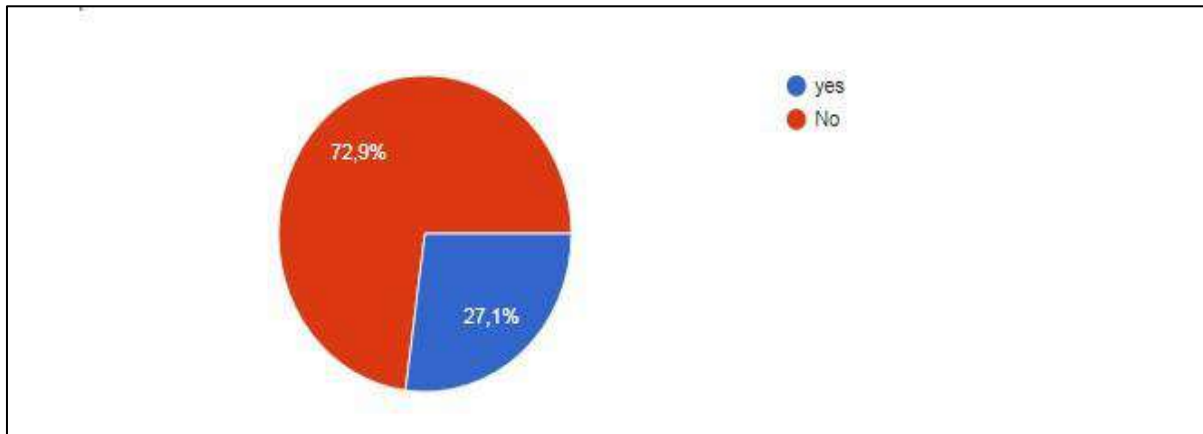
Then, the researcher added another open-ended question in order to give the learners the opportunity to explain their choice. The findings indicate that they select AI tools based on:

- Practicality
- Ability to generate diverse ideas
- Provision of additional examples

The latter means that the emphasis on practicality suggests that learners prioritize userfriendly tools that provide immediate assistance. Additionally, the preference for ideageneration tools indicates that AI is often used as a brainstorming aid rather than a proofreading tool.

Another question aiming to provide the learners with the chance to indicate any challenge they face using AI tools. The responds varied, 43 one which represented (72, 9%) was for

“No”, and 16 one which represented (27, 1%) was for “Yes”. The following pie chart will indicate the results.



**Figure 3.8: Facing Challenges in Using AI Tools**

The final question was open-ended to give the learners the chance to illustrate their challenges in using AI tools. The findings can be summarized as follows:

Plagiarism concerns, technical difficulties and incorrect information provided by AI

The latter indicates that these challenges highlight the limitations of AI tools. Plagiarism concerns indicate that students are aware of ethical risks, while technical difficulties and misinformation suggest that AI-generated content requires critical evaluation; this finding underscores the need for proper training on using AI tools effectively without compromising academic integrity.

### **3.2.2 Results Obtained from the Interview**

An interview was conducted with three experienced EFL teacher’s at BBU to provide the needed data for reaching deeper insights about the integration of AI tools in conjunction with conventional writing methods in order to improve academic writing which was the main topic in discussion during the interview.

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In addition to, the researcher designed the eight questions to gather information about how teachers feel about integrating AI tools with the traditional writing methods, the challenges they may have had encounter when using them, and suggestions for enhancing student's writing quality.

- The first question was about discussing teacher's experiences in teaching written expression to EFL learners.

Teachers	Responses
Teacher 1	I have been teaching written expression for more than 5 years, which allowed me to know more about this module. Although it seems easy to teach it but, when it comes to reality, it is very challenging.
Teacher 2	I have been teaching academic writing for nearly 10 years. It is a fascinating area of teaching because when we teach it to students; we teach them to be selective in the vocabulary used, particularly third-year EFL learners since they have had enough knowledge about the module so that they have to be careful about the choice of the words.
Teacher 3	Over the past few years, I have noticed that students often struggle with organizing their thoughts and expressing them clearly in English. To address this, I emphasize the importance of structure, coherence, and cohesion in writing. By providing constructive feedback and a supportive learning environment, I help learners gain confidence in their academic writing.

**Table 3.1: Teachers Experiences of Teaching Written Expressions to EFL Learners**

Teacher's experiences vary significantly; each of them observed that teaching the academic

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writing module is more challenging than it appears. The latter means that teaching academic writing to EFL learners requires using different techniques and methods that help learners build a solid background in academic writing.

- The second question was about the significance of academic writing for EFL learners.

Teachers	Responses
Teacher 1	Academic writing is important since learners will be evaluated based on their writing essays
Teacher 2	It allows learners to express themselves using academic vocabulary in an academic context. It is not all about how well they can write, but respecting the format of writing is of paramount importance.
Teacher 3	Attaining mastery in academic writing is highly significant for both personal and professional purposes. It enhances critical thinking and analytical skills; it also boosts confidence in expressing ideas clearly, which is valuable in everyday communication.

**Table 3.2. The Importance of Academic Writing for EFL Learners**

Teacher's responses highlight the importance of academic writing for EFL learners in both personal and professional contexts. They emphasized that academic writing is of paramount importance, as it enables learners to articulate their thoughts and viewpoints clearly within academic settings. In addition, improving analytical and critical thinking.

- The third question was about discussing the challenges teachers have observed that EFL learners encounter in the realm of academic writing.

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Teachers	Responses
Teacher 1	Learners tend to make mistakes in grammar and they rely a lot on their mobiles when we give them activities to write about any topic which causes a serious problem for the teacher to know the level of each one.
Teacher 2	The majority of the students face the problem of miss selecting the adequate vocabulary in their essays depending on different types(narrative, descriptive ,expository....).In addition to, miss respecting the correct size of academic writing ,many students write too much as others tend to write too little words .
Teacher 3	They face several challenges including: limited vocabulary and grammatical knowledge, writing unclear and miss organized ideas, using incorrect vocabulary for each type of essays and lack of cohesion and coherence in their pieces of writing.

**Table3.3.The Observed Challenges EFL learners face during Academic Writing**

Teacher's opinions highlight that EFL learners are facing several challenges, which can be summarized as follows

- Grammar mistakes
- Overuse of their mobile as a tool for writing
- Miss selecting the adequate vocabulary for each type of essay
- Miss respecting the correct length of the essays
- Miss-organizing their ideas, which leads to the absence of cohesion and coherence in their pieces of writing

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- Question four asked teachers to mention specific techniques that learners should develop in order to master academic writing.

Teachers	Responses
Teacher 1	Peer work can be an effective technique because they will share ideas and learn from each other's and the teacher only guides them.
Teacher 2	The technique is respecting the format of each type of essay since each one has specific one and using the adequate vocabulary for each type .For example, in descriptive essays they tend to use adjectives and the present tense so that respecting the format and the correct vocabulary choice surely will results in correct academic writing essays.
Teacher 3	Students should focus on mastering coherent structure by organizing ideas logically with clear introduction, body paragraphs, and conclusion. In addition to, using transition words, and regularly revising drafts to improve clarity, grammar, and adherence to academic standards.

**Table3.4. Techniques Learners can Use to Improve Their Academic Writing**

Teachers offer different techniques that learners can use in order to improve their academic writing quality.

- They encourage peer work, as it helps learners become more independent and allows them to learn from each other's mistakes.
- Respecting the format of each type of essay and using adequate vocabulary for each one.
- Organizing ideas logically results in coherence and cohesion essays.

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- Revising drafts so that they can correct their grammar mistakes.
- Question five discusses teacher’s opinion about the integration of AI tools as a complementary method for enhancing writing skills.

Teachers	Responses
Teacher 1	I think they can be beneficial and in the same time they can hinder the learning process. Beneficial since they can provide correct and information about different topics. On the other hand, learners tend to over use AI tools which can impact their writing negatively.
Teacher2	I am not against the use of AI tools as a complementary method because I think it is really helpful but learners tend to use as the only source that exist. Using it as support to help you then adapted to the content is the best way to use AI tools.
Teacher 3	It can be quite beneficial, since AI can help students by providing personalized and instant feedback, allowing them to correct grammar, style, and coherence mistakes. These tools can offer deeper explanations on various topics, but students should not rely on them entirely.

**Table3.5.The Integration of AI Tools in Academic Writing**

Teachers support the integration of AI tools besides conjunctive writing methods. They argue that AI tools can help learners improve their writing quality, but only if used correctly, as source of information on various topics and for correcting their writing, allowing learners to learn from their mistakes.

- Question six was about mentioning the most effective AI tools in enhancing writing quality and explaining the reasons behind the choice.

Teachers	Responses
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Teacher 1	The common tool is chatGPT, but they have to paraphrase the ideas instead of copying and calling them and presenting them as they have written them.
Teacher 2	For me, chatGPT is really good and the most common among learners.
Teacher 3	I think Grammarly is often considered one of the most efficient tools because it provides detailed feedback on grammar, punctuation, style, and tone, which helps students understand their mistakes and learn how to correct them. ChatGPT is also very helpful for brainstorming ideas so it helpful supplementary resource for students to enhance their writing skills and creativity.

**Table3.6: The Most Effective AI Tools for Enhancing Writing Quality**

Teachers provide two AI tools. The first one is ChatGPT; all the teachers agree that it is the most common one used by the learners. Since, it provides them personalized and instant feedback. In addition, Grammarly as the second tool, which corrects learners pieces of writing and provides them with correct of the grammatical mistakes, so they can learn from their mistakes.

- The seventh question was about discussing teacher's reflections on the potential merits or drawbacks of combining AI tools with traditional writing methods for EFL learners.

Teachers	Responses
Teacher 1	I think students tend to rely more on AI tools instead of using them for beneficial purposes.

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Teacher 2	I am with the combination of both traditional methods with AI tools because one can't be another especially in now a day's human intelligent has move to the second position so that I think it is very good, fruitful and effective but we use it adequately.
Teacher 3	Combing AI tools with traditional writing methods has both potential merits and drawbacks. For the merits, it can enhanced learning by identifying errors, personalized assistance by offering suggestions and exercises .For the drawbacks, I think over-reliance is the most common one because students may become too dependent on AI tools, potentially hindering the development of independent writing skills.

**Table 3.7. Teacher's Reflections on Combining AI Tools with Traditional Writing**

### Techniques

Teacher's opinions indicated that combining AI tools with traditional writing methods can have potential merits and drawbacks. They mentioned that AI tools can complete the learning process, as learners first receive instruction in the classroom and then practice through exercises such as writing academic essays. In this context, students may rely on AI tools for generating ideas and correcting their mistakes, making the tools a means to facilitate and reinforce learning. On the other hand, over-reliance on AI tools can be seen as a negative side since it hinders learner's creativity and critical thinking.

- The last question was about providing recommendations or strategies that could effectively enhance the academic writing competencies of EFL learners.

Teachers	Responses
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Teacher 1	I think it is better to encourage students to write even though they make mistakes, but through practice, they will improve their style, and they can work with their peers to develop their writing.
Teacher 2	It is better to use AI tools to take ideas after that it is better to rephrase them to the context you want to use.
Teacher 3	I would recommend EFL learners to practice academic writing because through practice they are going to be able to know their mistakes and their needs and I would like to encourage the learners to use AI tools but avoiding over-reliance and be independent learners.

**Table.3.8. Teacher’s Suggestion for Enhancing Academic Performance**

Teachers suggest that regular writing practice is essential for developing writing quality. Additionally, they recommended using AI tools to generate ideas related to the topic being discussed, and then rephrasing those ideas related to the topic being discussed, and then rephrasing those ideas in the students’ own words to suit the context.

### **3.3 Data Interpretation and Discussion**

In line with the main objectives of this research, this section discusses the findings gathered from both the student questionnaire and teacher interviews to explore the challenges EFL learners face in academic writing and evaluate the potential of AI tools as a complement to traditional methods.

The questionnaires and teacher interviews provide insights that either align with or diverge from previous research in the field of EFL academic writing. The high percentage of students reporting challenges with vocabulary and grammar supports the findings of AI Fadda (2012), who noted that EFL learners often struggle with limited lexical resources and grammatical accuracy, affecting coherence in writing. Similarly, the organizational issues

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highlighted by students and teachers resonate with Hyland's (2003) observations about the difficulty EFL learners face in structuring academic texts according to genre conventions.

The use of AI tools such as ChatGPT and Grammarly to address these issues aligns with studies like Zou et al. (2023), who reported that AI-assisted writing improves learner autonomy and reduces mechanical errors. However, the concerns raised about plagiarism and misinformation are consistent with Buchtik et al. (2023), who emphasized the need for critical thinking and digital literacy when integrating AI into learning. These connections suggest that while the potential of AI tools is recognized, responsible use remains a key concern, as echoed.

Furthermore, the teacher perspectives confirm findings by Lee (2016), who advocated for blended approaches combining technological tools with traditional instruction to support individualized feedback and scaffold learner development. Overall, the current results both confirm and extend previous research by highlighting the nuanced role of AI tools in improving EFL learner's writing when guided appropriately.

In light of the main objectives and hypotheses of this research, the discussion aims to synthesize the major findings and relate them directly to the study's aims. The first hypothesis proposed that EFL learners face notable challenges in academic writing when using conventional methods including grammar errors, limited vocabulary, and lack of coherence. The data confirmed this, with 66,7% of students citing vocabulary issues and 35% grammar problems. These results are consistent with the objectives of identifying major obstacles that hinder learners' academic writing proficiency.

The second hypothesis suggested that AI tools, when integrated with traditional methods, can enhance writing performance. This was supported by 76.7% of students who

acknowledged the benefits of tools like ChatGPT and Grammarly in idea generation and language correction. Teachers also affirmed this, emphasizing the role of AI in complementing instruction and offering personalized feedback. However, both groups cautioned against over-reliance, aligning with the study's objective to explore the benefits and limitations of AI assisted writing.

Ultimately, the convergence of student and teacher perspectives underscores the effectiveness of a hybrid model. Traditional instruction provides foundational knowledge, while AI tools offer immediate and tailored support. This model satisfies the research goal of evaluating the integration of AI with conventional methods to improve academic writing among EFL learners.

### **3.4 Limitations of the Study**

While this study offers valuable insights into the integration of artificial intelligence tools alongside conventional writing methods in academic writing among EFL learners, it is important to acknowledge several limitations that may have influenced the scope and depth of the findings.

First, the absence of classroom observation is a critical limitation, as the research relied exclusively on self-reported data collected through student questionnaires and teacher interviews. This reliance may have restricted the researcher's ability to observe learners' actual writing practices, classroom engagement, and real-time interactions with AI tools, which could have provided a more nuanced understanding of the learning process.

Second, although the questionnaire was distributed to four third-year EFL groups, the number of responses received (60 in total) did not fully represent the entire population, limiting the generalizability of the results. Furthermore, several participants provided minimal

responses to open-ended questions, particularly those requiring detailed illustrations of challenges or tool usage, which limited the depth of the qualitative analysis.

Lastly, only three teachers were interviewed for the qualitative component, which, although informative, may not sufficiently reflect the diversity of teaching experience, institutional practices, or pedagogical views related to academic writing and AI integration. These limitations suggest the need for broader participant samples and more diverse data collection methods in future research to enhance the validity and applicability of the findings.

### 3.5 Suggestions and Recommendations

The findings of this investigation highlight the pedagogical value of integrating artificial intelligence tools in conjunction with conventional writing strategies to improve academic writing among EFL learners. This section provides practical suggestions and recommendations for EFL learners, teachers, and educational institutions on how to effectively apply these tools and methods to support academic writing development:

- Encourage EFL learners to make regular use of AI tools, such as ChatGPT and Grammarly, as writing assistants to enhance idea generation, correct grammar and punctuation mistakes, and improve coherence and cohesion in their academic essays.
- Train learners on the ethical use of AI tools, emphasizing the importance of critical engagement, paraphrasing, and academic integrity to avoid plagiarism and overdependence on technology.
- Promote balanced writing instruction by combining traditional methods such as drafting, outlining, and brainstorming with digital tools, ensuring learners retain control over their learning process and build independent writing skills.

- Provide workshops or classroom activities that introduce the functionalities of AI tools, allowing learners to explore how these technologies can support various stages of the writing process, from planning to final revision.
- Develop a clear institutional policy or guideline that outlines best practices for incorporating AI tools in academic writing to ensure responsible and productive use in alignment with academic standards.
- Address common learner challenges identified in the study, such as limited vocabulary, grammatical errors, and weak organization through targeted lessons and feedback, supported by AI tools that offer personalized corrections and explanations.
- Encourage peer collaboration and teacher-led discussions about AI-generated content to foster critical thinking, reflection, and shared learning experiences among students.
- Finally, future research and curriculum development should continue exploring the evolving role of technology in language education, particularly focusing on how AI can complement human instruction and contribute to higher standards of academic writing proficiency.

### 3.6 Conclusion

This chapter presented a comprehensive analysis and interpretation of the data collected through student questionnaires and teacher interviews, with the aim of investigating the impact of integrating AI tools with conventional writing methods on academic writing among EFL learners at BBU. The findings revealed that while students recognize the importance of academic writing, they continue to face persistent challenges most notably in vocabulary use, grammatical accuracy, and the logical organization of ideas when relying solely on traditional instructional methods. However, integrating AI

tools such as Chatgpt and Grammarly emerged as a promising complement, offering practical support through instant feedback, idea generation, and personalized assistance.

Both learners and educators acknowledge the potential benefits of AI tools in enhancing writing quality and engagement, yet they emphasize the importance of maintaining a balanced approach to avoid over-reliance and to preserve learners' autonomy. The data also highlighted the need for pedagogical strategies that reinforce foundational writing skills while integrating technological advancements in meaningful ways. Despite certain limitations, such as the absence of classroom observation and a limited participant pool, the study offers valuable insights into how digital tools can be effectively combined with traditional methods to foster academic writing competence in EFL contexts. Overall, the chapter underscores the importance of embracing innovation while reinforcing pedagogical fundamentals to meet the evolving needs of EFL learners in the digital age.

# **General Conclusion**

## General Conclusion

Recently, the rapid advancement of artificial intelligence technologies has significantly transformed various sectors, including education. The integration of AI tools into the teaching and the learning environment has introduced new dynamics in instructional methodologies, particularly in the development of academic writing skills among English as Foreign Language (EFL) learners. This dissertation aimed to investigate the impact of combining AI tools with conventional writing methods to enhance academic writing among EFLs at Belhadj Bouchaib University. The study's main objective was to assess how the use of AI-based applications combined with traditional strategies such as brainstorming, outlining, and drafting, can support learners in overcoming common writing challenges and enhancing the quality of their academic essays.

The study is structured into three chapters. The first chapter presented a thorough review of the literature related to academic writing in EFL contexts, identifying key challenges such as lack of vocabulary, grammar issues, lack of organization, and limited exposure to effective writing strategies. It also highlighted the pedagogical significance of integrating technology to enhance academic writing. The second chapter outlined the research methodology, adopting a mixed-methods approach to offer depth and breadth in data collection. The quantitative component involved a questionnaire administered to third-year EFL learners, while the qualitative component consisted of semi-structured interviews with teachers of written expression. This approach ensured data triangulation, enhancing the credibility and reliability of the findings.

The third chapter provided a detailed analysis of the collected data. The results revealed a generally positive perception of AI tools, with students and teachers recognizing their potential to improve key aspects of academic writing, including grammatical accuracy,

## General Conclusion

coherence, and content development. When used alongside conventional methods, these tools were seen as valuable aids rather than replacements.

The investigation proposed two hypotheses around the assumption that integrating artificial intelligence tools with conventional writing methods would positively influence EFL learners' academic writing performance. It was hypothesized that using AI tools such as grammar checkers, paraphrasing aids, and language models would assist learners in overcoming common writing difficulties, including grammar errors, vocabulary limitations, and issues related to coherence and cohesion. Furthermore, it was suggested that AI tools, when used alongside traditional practices like outlining and drafting, could provide learners with immediate feedback, enhance their awareness of writing structures, and promote autonomy in the writing process.

The data obtained from the student questionnaires and teacher interviews strongly support these hypotheses. Most of students reported that AI tools helped them identify and correct errors, improve vocabulary use, and better organize their ideas. Likewise, teachers acknowledged that students who utilized AI applications demonstrated noticeable improvements in grammar accuracy and logical flow in their essays. However, students and teachers emphasized that AI tools were most effective when integrated with conventional writing strategies, rather than used in isolation. These findings confirm that the combination of AI support with traditional instructional methods significantly enhances learners' academic writing, thus validating the research hypotheses and highlighting the pedagogical value of a blended approach. This research contributes to the growing knowledge on educational technology and offers practical implications for advancing EFL writing instruction via a harmonized integration of traditional and modern methods.

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# **Appendices**

## Appendices

### Appendix A Students Questionnaire

Dear students

You are kindly asked to answer the following questionnaire for the purpose of gathering data to accomplish a master dissertation under the title “The Impact of AI Tools along with Conventional Methods on EFL Student’s Academic Writing: Case of Third Year Students at The University of Ain Temouchent”. The data provided will be used only for research purposes. Thank you for your time and collaboration.

**1- Does academic writing important in your learning process?**

- Yes
- No

**2- If yes, why?**

- It improves critical and analytical thinking
- It improves style of writing
- It enriches the cognitive and linguistic intelligence
- Other

**3- How often do you practice academic writing in classroom?**

- Always
- Sometimes
- Never

**4- Do you use any of the following methods when writing in the classroom?**

- Brainstorming
- Outlining
- Drafting
- Others

**5- What are the most common challenges you face in your academic writing?**

- Lack of vocabulary about the topic

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-Grammar mistakes

-Punctuation errors

-Cohesion of ideas

-Others

**6- Do you think that AI tools are effective and provide more improvement to your academic writing?**

-Yes

-No

**7- If yes, would you please provide examples to illustrate the effectiveness 8- Which AI tools do you use the most when writing?**

-Grammarly

-ChatGPT

-QuillBot -Others

**9- Why did you choose this tool specifically? Please explain your reasoning briefly.**

**10- Do you face any challenges when using AI tools?**

-Yes

-No

**11- If yes, would you please illustrate them?**

# Appendices

## Appendix B

### Teacher's Interview

Dear teachers,

This dissertation is a part of a master dissertation. It investigated the impact of AI tools alongside the traditional learning on academic writing of EFL learners. Your collaboration will help fulfilling this research so you are kindly requested to answer the following questions. Thank you for your time.

1-Would you elaborate on your experiences in teaching academic writing to EFL Learners?

2-In your opinion, what is the significance of attaining mastery in academic writing for scholarly and professional pursuits?

3-Would you please discuss the challenges you have observed that EFL students encounter in their academic writing?

4-In your view, which specific writing techniques should students endeavor to master producing academically rigorous and grammatically sound pieces of writing?

5-May I inquire about your perspective on the integration of AI-based tools as a complementary method for enhancing writing skill?

6-Among the various tools available, which one do you consider most officious, and could you explain the reasoning behind your choice?

7-Could you share your reflections on the potential merits or drawbacks of combining AI tools with traditional writing methods for EFL learners?

8-Might you propose any recommendations or strategies that could effectively enhance the academic writing competencies of EFL learners?

## Summary

### الملخص

تتناول هذه المذكرة تأثير استخدام ادوات الذكاء الاصطناعي الى جانب الطرق التقليدية على مهارات الكتابة الأكاديمية لدى طلاب اللغة الانجليزية في جامعة بلحاج بوشعيب عين تموشنت . تهدف الى تحديد التحديات التي يواجهها الطلاب في الكتابة الأكاديمية و تحليل مواقفهم تجاه ادوات الذكاء الاصطناعي و اكتشاف فعالية دمج هذه الادوات مع الاساليب التقليدية لتحسين جودة الكتابة. اعتمدت الدراسة على منهج مختلط يجمع بين الاستبيانات و المقبلات و توصلت الى نتائج تؤكد ان الجمع بين الادوات التكنولوجية و الاستراتيجيات التقليدية يعزز من جودة الكتابة الأكاديمية لدى الطلاب . كما تقدم الدراسة توصيات بيداغوجية لتعزيز دمج الذكاء الاصطناعي في تعليم الكتابة الأكاديمية.

**الكلمات المفتاحية** ادوات تعليمية; اللغة الانجليزية كلغة اجنبية; الاساليب التقليدية; مهارات الكتابة الأكاديمية; الذكاء

الاصطناعي

### Résumé

Ce mémoire traite de l'impact de l'utilisation des outils d'intelligence artificiel combinés aux méthodes conventionnelles sur l'écriture académiques des étudiants en anglais langue étrangère à l'Université Belhadj Bouchaïb d'Ain T'émouchent. Il vise à identifier les difficultés rencontrées par les étudiants, à analyser leurs attitudes envers les outils IA et à évaluer l'efficacité de leur intégration dans l'enseignement traditionnel. La recherche adopte une approche mixte basée sur des questionnaires et des entretiens. Les résultats révèlent que l'usage combiné des outils numériques et des méthodes classiques améliore les compétences en écriture académique. Des recommandations pédagogiques sont proposées pour intégrer efficacement l'IA dans l'enseignement de l'écriture.

**Mots clés:** Intelligence artificielle, écriture académique, méthodes traditionnelles, anglais langue étrangère, outils éducatifs.

### Summary

This dissertation explores the impact of using artificial intelligence (AI) tools in conjunction with conventional methods on the academic writing of EFL students at Belhadj Bouchaïb University in Ain Temouchent. It aims to identify the challenges faced by learners, evaluate their perceptions toward AI tools, and investigate the effectiveness of combining AI with traditional writing strategies. A mixed -methods approach involving questionnaires and teacher interviews were used. The findings indicate that integrating AI technologies with conventional approaches significantly enhances students' academic writing. The study concludes with pedagogical recommendations for effectively incorporating AI tools into academic writing instruction.

**Keywords:** Artificial Intelligence, Academic Writing, Traditional Methods, EFL, Educational Tools.