The Impact of AI Content Generator on EFL Students Writing Skills: Case study of Master 2 Students at Saida University

A thesis submitted as partial fulfilment of the requirements for the degree of *Master* in Didactics.

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I solemnly declare that this thesis/dissertation is the result of my own original work and has not been submitted, in whole or in part, for any degree or diploma at any other academic institution. I confirm that all sources of information have been properly acknowledged and cited, and that this research is free from plagiarism, except where appropriate reference has been made. This study represents my independent effort, unless otherwise stated.

Name: Atallah Abdelaziz

Date: 25/05/2025

Dedication

I dedicate this work to:

- ❖ My cherished parents, whose unwavering love, patience, and support have been the foundation of everything I have achieved. Your belief in me gave me the strength to keep going.
- ❖ My brother and sisters, who have stood by me through every trial and triumph — your presence has always been a source of comfort and courage.
- ❖ My dear friends, who shared in my joys, frustrations, and dreams — your companionship made this journey lighter and more meaningful.
- ❖ My dedicated teachers at Saida University, whose guidance, encouragement, and knowledge shaped my academic path and inspired me to strive for excellence.
- ❖ And to everyone who offered a word of encouragement, a gesture of kindness, or a moment of support

_____this work is a reflection of your impact on my life_____

- ❖ Thank you all, from the depths of my heart, for being part of this journey

Atallah Abdelaziz

Acknowledgments

Abstract

The use of Artificial Intelligence (AI) in education is becoming a regular part of learning, especially for students learning English as a Foreign Language (EFL) who aim to improve their writing. This study investigates the impact of AI writing tools on students' writing performance as well as their attitudes toward writing, particularly in terms of motivation, confidence, and anxiety. Focusing on second-year Master's students at the University of Saida, the research employed a case study approach. Data were gathered through questionnaires, classroom observations, and interviews with both students and their instructors. The findings reveal that AI tools such as ChatGPT and Grammarly provide substantial support in areas like grammar, vocabulary, and idea organization. However, the study also highlights concerns, including students' overreliance on these tools and questions regarding the authenticity of their submitted work. The study concludes that rather than avoiding AI, educators should guide students in using these tools responsibly. Integrating AI literacy into EFL instruction can help students enhance their writing while maintaining their individual voice and developing essential writing skills in a balanced and ethical manner.

Keywords: Artificial intelligence, EFL writing, AI content generators, academic performance, motivation, Saida University.

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Acronym	Full Form
AI	Artificial Intelligence
EFL	English as a Foreign Language
NLP	Natural Language Processing
LMS	Learning Management System
ITS	Intelligent Tutoring System
MALL	Mobile-Assisted Language Learning
MOOC	Massive Open Online Course
L1	First Language
L2	Second Language
CLT	Cognitive Load Theory

General Introduction

General introduction

In recent years, the incorporation of Artificial Intelligence (AI) into educational environments has introduced both promising opportunities and complex challenges, particularly in the area of writing skill development among English as a Foreign Language (EFL) learners. Writing, as a fundamental component of academic achievement, has traditionally been a central focus of language education. However, the growing use of AI-powered writing tools—such as ChatGPT, Grammarly, Quillbot, and Perplexity—is transforming how students' approach and engage with writing tasks. These technologies offer immediate feedback, advanced linguistic support, and structural enhancements, enabling students to produce written work more efficiently and with greater linguistic precision.

While these tools offer clear advantages, their integration into academic writing also raises important concerns. Key issues include the risk of overdependence on technology, the potential erosion of students' authentic writing voices, and ethical questions related to plagiarism and data privacy. Moreover, disparities in digital literacy among students and educators may lead to unequal access and inconsistent learning outcomes. These challenges are particularly pronounced in EFL contexts, where writing proficiency functions not only as a learning goal but also as a key indicator of language competence and academic progress.

At the University of Saida, a significant number of second-year Master's students in the EFL program have begun to rely on AI tools to support their writing tasks. While this trend reflects a growing interest in using digital resources to enhance academic performance, it also presents educators with the challenge of ensuring that students continue to cultivate critical thinking, originality, and core language skills. In this context, it becomes essential to assess the extent to which AI is influencing students' writing development—both positively and negatively.

The primary aim of this study is to examine the impact of AI-assisted writing on the writing abilities of second-year EFL Master's students at the University of Saida. In addition, the research seeks to understand teachers' perspectives on the integration of AI tools into the writing process and to explore the broader pedagogical and ethical considerations associated with this integration. The investigation isguided by the followingresearch questions:

- To what extent does the use of AI affect the writing performance of second-year EFL Master's students?
- What advantages and challenges and emotional responses do students encounter when using AI machine for writing ?
- How do instructors perceive the role of AI in academic writing instruction?
- What instructional strategies can be implemented to optimize the benefits of AI while mitigating its potential downsides?

In line with these questions, the study is based on the following hypotheses:

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1. AI tools are likely to have a positive effect on students' grammatical accuracy, vocabulary usage, and overall writing fluency.
2. Excessive reliance on AI tools may hinder the development of a personal writing voice and weaken students' critical thinking skills.
3. Instructors may face challenges in effectively incorporating AI tools into their teaching due to insufficient training and preparedness.
4. Integrating AI literacy and evidence-based pedagogical approaches can support the responsible and productive use of AI in writing education.

To explore these hypotheses, the study adopts a mixed-methods approach. Data were collected through student questionnaires, interviews with six EFL instructors, and classroom observations of AI-integrated writing sessions involving thirty-seven participants. Both quantitative and qualitative analysis techniques were employed to gain a comprehensive understanding of how AI tools are influencing writing performance and to identify effective instructional practices for their integration.

This thesis is organized into three main chapters. Chapter One reviews the theoretical foundations of the study, drawing on relevant literature related to AI in education, academic writing, and EFL instruction. Chapter Two outlines the research design and methodology, including data collection instruments and analytical procedures. Chapter Three presents the study's findings, offers a critical interpretation of the results, and concludes with recommendations for how educators and institutions can thoughtfully and effectively integrate AI into writing instruction.

Chapter one

Introduction:

Technology has progressed exponentially over time, continually astounding the world with advancements that researchers could hardly have imagined. Among these developments is artificial intelligence (AI), which has impacted numerous sectors of society, including education. This research examines the psychological implications of AI on psychology students' writing skills. The participants were divided into two groups: one group used AI tools to support their writing, while the other did not. Grounded in technology-based learning theories, the study suggests that AI enhances the student learning experience by providing access to information and supporting the writing process

1.Artificial Intelligence: Definition and Evolution

Artificial Intelligence (AI) is a multidisciplinary field within computer science that involves creating systems capable of performing tasks typically requiring human intelligence (Russell & Norvig, 2021). These tasks include reasoning, learning, natural language understanding, and problem-solving. AI is broadly categorized into narrow AI, which specializes in specific tasks such as speech recognition or chess playing, and general AI, a theoretical concept of a machine possessing intelligence indistinguishable from human beings (Goodfellow, Bengio, & Courville, 2016). AI development relies heavily on subfields such as Machine Learning (ML), where systems improve automatically through experience, and Natural Language Processing (NLP), which allows machines to understand and generate human language (Jurafsky& Martin, 2021). Recent advances in deep learning have dramatically improved AI's ability to analyse and produce natural language text, enabling tools that assist with writing, translation, and communication (LeCun, Bengio, & Hinton, 2015).

In education, AI technologies are increasingly embedded within intelligent tutoring systems, adaptive learning platforms, and automated assessment tools, all designed to enhance personalized learning experiences (Luckin et al., 2016). AI-powered writing tools, such as Grammarly and ChatGPT, leverage NLP to provide real-time feedback on grammar, style, and content, supporting learners in the writing process and fostering autonomy.

2. EFL Writing Skills: An Overview

Writing is a fundamental component of language learning, especially for learners of English as a Foreign Language (EFL). Unlike speaking, which is often spontaneous and supported by visual cues, writing is a deliberate process that requires planning, organization, and mastery of linguistic features. Academic writing, in particular, presents specific challenges for EFL learners due to its formal structure, precise language, and expected conventions. (Hyland, 2003; Richards &Renandya, 2002)

3.Key Components of Academic Writing in EFL Contexts

Academic writing in EFL contexts encompasses several essential components, including grammar, coherence, cohesion, vocabulary use, organization, and fluency.

Grammar refers to the accurate use of syntactic structures, while coherence involves the logical flow of ideas across a text. Cohesion relates to the use of linguistic devices (e.g., conjunctions, pronouns) that link sentences and paragraphs. Fluency in writing is characterized by the ability to express ideas smoothly without frequent pauses or errors. Each of these components contributes to producing writing that is both comprehensible and academically appropriate. (Jordan, 1999; Hedge, 2005)

2.Common Challenges Faced by EFL Learners in Academic Writing

EFL learners often struggle with issues such as limited vocabulary, grammatical errors, poor organization, and lack of coherence. Additionally, many learners find it difficult to adapt to academic conventions, including citation styles, formal tone, and argumentation structures. These challenges may stem from linguistic differences, limited exposure to academic texts, or insufficient writing practice in their educational contexts.(Ferris, 2009; Hinkel, 2004)

3.Pedagogical Approaches to Teaching Writing

Several pedagogical models have been proposed for teaching writing to EFL learners. The product-oriented approach emphasizes accuracy and focuses on imitating model texts. The process-oriented approach, by contrast, encourages learners to go through stages of brainstorming, drafting, revising, and editing. A more integrative model is the genre-based approach, which teaches students how to write specific types of texts based on their purposes and audiences. Effective writing instruction in EFL contexts often combines these methods to address learners' diverse needs. (Raimes, 1983; Badger & White, 2000)

6. AI Content Generators: Nature and Functions

Artificial Intelligence (AI) content generators have become increasingly prominent in educational and professional domains. These tools use natural language processing (NLP) and machine learning algorithms to produce, refine, and manipulate text. As their capabilities have grown, so has their potential impact on how students approach writing tasks. (Brown et al., 2020; Floridi&Chiriatti, 2020)

6.1Definition and Examples of AI Content Generators

AI content generators are software systems designed to automatically produce human-like text. Examples include ChatGPT, Jasper AI, Copy.ai, and Grammarly's advanced rewriting tools. These platforms generate responses based on input prompts, often in real time. Their ability to understand context, mimic academic style, and suggest improvements makes them highly attractive to learners and educators alike. (Zhou et al., 2023; OpenAI, 2023)

6.2Core Functions: Text Generation, Paraphrasing, Summarization, Grammar Correction

The primary functions of AI content tools include generating original content, paraphrasing existing text to avoid plagiarism, summarizing lengthy materials, and correcting grammar and syntax. These tools are especially useful for non-native speakers who may need assistance with language accuracy and academic tone. By offering real-time feedback, they help students become more aware of their writing patterns and areas for improvement. (Kasneci et al., 2023; Dwivedi et al., 2023)

4.Educational vs. Non-Educational Uses

While AI generators are commonly used in educational settings for drafting essays, improving grammar, and enhancing vocabulary, they are also widely applied in marketing, journalism, and social media content creation. The dual-use nature of these tools raises important questions about academic integrity, authorship, and dependency. In educational contexts, their use should be guided by clear pedagogical goals and ethical considerations to support rather than replace student learning. (Van Dis et al., 2023; Zhai, 2022)

5.Theoretical Foundations Underpinning AI Use in Education

The integration of technology into education is underpinned by several influential learning theories that explain how digital tools can enhance cognitive processes and promote effective learning. These theories provide the conceptual framework for understanding how students interact with technological systems, such as AI content generators, in academic settings.

6.Constructivism:

Constructivism is a foundational theory that emphasizes the active role of learners in constructing their own understanding and knowledge through experience, reflection, and social interaction. According to Piaget (1952) and Vygotsky (1978), knowledge is not passively received but actively built by the learner based on prior knowledge and contextual experiences. In technology-enhanced environments, constructivist principles manifest through interactive learning platforms, simulations, and tools that promote exploration and discovery. AI applications support constructivist learning by enabling students to engage with personalized content, receive instant feedback, and revise their work iteratively based on self-directed inquiry (Piaget, 1952; Vygotsky, 1978).

6.1Socio-Cultural Theory:

Connectivism, proposed by Siemens (2005), represents a modern theory tailored to the digital age. It argues that learning occurs across networks, and knowledge is distributed among people, devices, and digital systems. Rather than residing solely within the individual, knowledge is externalized and accessed through connections with information nodes—such as websites, databases, and intelligent systems. In this context, AI tools serve as integral components of the learner's networked environment. They facilitate real-time access to information, generate content, and help learners

establish meaningful connections between ideas, thus aligning well with the principles of connectivism (Siemens, 2005).

6.2Cognitive Theory*:*

Cognitive Load Theory (CLT), developed by Sweller (1988), focuses on the limitations of working memory during the learning process. It posits that instructional materials should be designed to minimize unnecessary cognitive load and maximize the learner's capacity to process new information effectively. When applied to technology-based learning, CLT highlights the importance of user-friendly interfaces, scaffolding techniques, and structured tasks. AI writing tools can support cognitive load management by automating low-level tasks (e.g., grammar correction), providing templates or outlines, and offering contextual suggestions that reduce the mental effort required for content organization and language accuracy (Sweller, 1988).

These theories—constructivism, connectivism, and cognitive load theory—collectively support the pedagogical rationale for integrating AI and other digital technologies into education. They emphasize the importance of learner autonomy, networked knowledge, and cognitive efficiency, all of which are central to the effective use of AI tools in enhancing EFL students' writing performance. Understanding these theoretical foundations is essential for designing and evaluating AI-supported instructional interventions in language education (Piaget, 1952; Siemens, 2005; Sweller, 1988; Vygotsky, 1978).

7. The Integration of AI Tools in EFL Writing Instruction

AI-assisted writing tools are digital platforms or applications that use artificial intelligence to assist users in the writing process. They provide functionalities ranging from grammar and spell checking to advanced features like content generation, paraphrasing, and style suggestions (Lee, 2022).

Grammarly, for example, employs NLP algorithms to detect errors and provide real-time corrections, helping users improve their writing accuracy and clarity. ChatGPT, developed by OpenAI, uses transformer-based language models to generate coherent text based on user prompts, enabling brainstorming, outlining, and even drafting assistance (OpenAI, 2023).

For EFL learners, these tools offer immediate and personalized feedback, which is crucial given the limited availability of human instructors for continuous support (Huang et al., 2021). They empower learners to practice writing autonomously and refine their skills iteratively (Cotton et al., 2023). However, the use of AI tools also raises questions regarding dependency, ethical considerations, and the authenticity of student work.

8. Potential Impact on Students' Writing Skills

Artificial intelligence (AI) tools have revolutionized academic integrity measures by providing advanced capabilities for detecting plagiarism and ensuring originality in student writing. Software such as Turnitin, alongside emerging GPT-detection systems, can now identify AI-generated text and copied content with increasing accuracy (Cotton et al., 2023). These tools serve as powerful deterrents against academic dishonesty, encouraging students to produce authentic work and maintaining trust in educational institutions (Sutherland-Smith, 2010). However, the widespread use of these technologies also presents complex challenges, particularly for English as a Foreign Language (EFL) learners who often rely on AI-based language support to overcome linguistic barriers.Cotton et al. (2023) note that while detection tools improve academic integrity, they may simultaneously induce anxiety and confusion among EFL students. These learners sometimes fear that their use of AI writing assistants—for example, tools that help with grammar, vocabulary, or drafting—might be misinterpreted as cheating or plagiarism. This concern can discourage them from using valuable language support tools, potentially hindering their development and confidence as writers (Cotton et al., 2023).

Furthermore, the nuances of AI detection are not always transparent; false positives can arise, and students may not fully understand what constitutes acceptable use of AI versus misconduct (Zawacki-Richter et al., 2019).

Selwyn (2019) argues that a more constructive response lies in comprehensive education around the ethical use of AI in writing. Rather than banning AI tools outright or relying solely on punitive detection, institutions should adopt a pedagogical approach that emphasizes transparency, critical awareness, and responsible use. Educating students about how to properly paraphrase, cite sources, and attribute content when using AI tools is essential. This guidance fosters an understanding of academic honesty beyond mere rule-following, cultivating learners' ability to engage thoughtfully with digital technologies (Selwyn, 2019).

Moreover, Selwyn (2019) emphasizes the importance of redefining originality and authorship in the context of AI-supported writing. The traditional notions of sole authorship become blurred when learners collaborate with AI tools that generate or refine text. Teaching students to view AI as a collaborative aid rather than a shortcut helps them maintain ownership of their ideas while leveraging technology ethically (Howard, 2020). Such frameworks promote a balanced integration of AI that supports creativity and critical thinking without compromising academic standards.

Additionally, institutions need to develop clear policies and transparent communication regarding the use of AI and plagiarism detection tools. This includes informing students about how their work is evaluated, what data is collected, and the limitations of detection software (Benton et al., 2021). By fostering open dialogue and trust, schools can reduce students' fears and misconceptions surrounding AI use, creating an environment where technology enhances learning rather than restricting it.

9. Ethical and Pedagogical Concerns

Despite their pedagogical benefits, AI-powered writing assistants present limitations and ethical challenges that educators and learners must consider. These tools sometimes fail to accurately interpret nuanced language uses, such as idiomatic expressions, sarcasm, or cultural references, leading to inappropriate or incorrect suggestions (Bender et al., 2021). Overreliance on AI-generated corrections may hinder the development of critical thinking and independent editing skills essential for advanced writing proficiency (Howard, 2020).

Ethical concerns include risks of plagiarism, as users might misuse AI tools to generate text without proper attribution, raising questions about originality and academic integrity (Zhou & Kao, 2023). Additionally, many AI platforms collect user data for model training and service improvement, raising privacy and data security issues that require transparent policies and user consent (Selwyn, 2019). Educators should therefore guide students in responsible AI use and emphasize its role as a support tool rather than a substitute for authentic writing effort.

Addressing ethical and practical challenges is critical for responsible AI integration. Educators must establish clear guidelines on data privacy, transparency, and academic integrity to protect learners and institutions (Benton et al., 2021). Practical issues include ensuring equitable access to technology, preventing overreliance on AI, and maintaining human oversight to preserve the educational value of writing (Howard, 2020). By proactively managing these concerns, teachers can create an inclusive and effective AI-supported learning environment (Zhou & Kao, 2023).

12. Algerian Situation:

There is a notable lack of research focused on the local context of Algerian EFL classrooms, particularly at institutions like Saida University. While the global literature on AI integration in language learning is growing, studies specifically examining the long-term effects of AI-assisted writing tools on academic writing skills in Algerian settings remain scarce.

Most existing research tends to focus on short-term experimental outcomes, often within technologically advanced contexts, leaving a gap in understanding how sustainable and contextually appropriate AI implementation can be in under-resourced environments. This gap highlights the need for localized, longitudinal studies that consider sociocultural, institutional, and technological variables affecting EFL learners' interaction with AI tools.

Conclusion:

This chapter established the conceptual and theoretical foundation for exploring how artificial intelligence is shaping the academic writing experiences of second-year EFL Master's students. It began by defining key terms such as AI, EFL writing skills, and AI content generators, and traced the evolution of AI technologies

like ChatGPT and Grammarly. These tools have become increasingly present in educational contexts, offering support with grammar, vocabulary, and text organization. The chapter also outlined major learning theories, constructivism, socio-cultural theory, and cognitive theory that justify the pedagogical use of AI-assisted writing tools.

While the benefits of AI in writing instruction are notable—such as personalized feedback and increased learner autonomy—the chapter also highlighted important ethical and pedagogical concerns. Issues like overreliance, diminished critical thinking, and academic integrity risks must be addressed carefully, especially in under-resourced contexts like Saida University. The chapter concluded by identifying a gap in localized research, underscoring the need to explore how Algerian students are actually using these tools and how they impact writing outcomes. This sets the stage for the empirical investigation in the next chapter.

Chapter two

1.The introduction

This chapter outlines the research methodology used to investigate how AI content generators affect the writing skills and emotional experiences—such as motivation, confidence, and anxiety—of second-year EFL Master's students at Saida University. A mixed-methods approach was adopted, combining quantitative data from student questionnaires with qualitative insights from teacher interviews and classroom observations. The chapter explains the choice of this approach, introduces the participants, describes the data collection tools, and addresses procedures for analysis, ethical considerations, and steps taken to ensure the study's reliability.

2. Methodology

In this chapter ,the researcher goes through the methodological framework to investigate the effects of AI content generators on the writing performance and psychology of both fields' didactics and literature civilization of the second-year EFL Master's Student's at the Saida University. The methodology specifically chosen as a way to represent both depth and breadth, while comprehending the research problem using a range of qualitative and quantitative methods.

2.1 Purpose of the Study

This study is aimed at exploring the effects of AI content generators, like ChatGPT & Perplexity and others, on the skills and abilities of students, in terms of writing and on the psychological aspect as well (e.g., confidence, anxiety, motivation) on both fields of second-year Master's students studying English as a Foreign Language. The researcher sees it necessary to conduct such studies due to the increasing reliance on AI tools in learning environments and the need to understand the effect such tools may have on the pedagogical and emotional effects of said tools in learning contexts.

The first question the researcher sought to answer was how far reaching are the impacts of AI tools on students writing capabilities in terms of organization, vocabulary, grammatical accuracy and so on. The second research question addressed the perceived benefits and barriers of students when using AI technologies to write. These ranged from pragmatic writing advantages to psychological factors like motivation and AI overdependence.

This is not a mere cognitive, but also affective study, and while the combination of both is for historical reasons itself quite unusual, its orientation is toward providing a comparatively comprehensive picture of AI impact. One possible future work consideration is the separation of dimensions for more in-depth study.

These questions will be addressed through a clearly structured research design methodology that includes participant selection, data collection tools, and analytical procedures.

2.2 Research Method

To fully address the research questions, the study utilized a mixed-method approach that combines the strengths of both qualitative and quantitative methods. This approach ensures a comprehensive understanding of the phenomenon by exploring statistical trends and individual experiences simultaneously (Tashakkori& Teddlie, 2010). It allows for triangulation, validation, and richer data interpretation.

2.3 Mixed Method Research

Mixed-method research integrates both qualitative and quantitative methodologies within a single framework to capitalize on their complementary strengths. According to Creswell and Plano Clark (2017), this approach is particularly effective for complex educational research where one form of data alone cannot capture the full scope of the issue. In this study, quantitative data provided measurable outcomes related to writing performance, while qualitative data offered insight into students' emotional and cognitive responses to AI tools.

2.4 Qualitative Method

The qualitative part of this study was designed to explore, in a more personal and in-depth way, how both students and teachers experience the use of AI content generators in academic writing. To do this, the researcher conducted semi-structured interviews with EFL instructors. These conversations offered valuable insights into how teachers view the influence of tools like ChatGPT and Grammarly on students' writingprogress, motivation, and classroom behaviours. In addition to the interviews, the researcher also carried out classroom observations to see firsthand how students actually interacted with AI tools during writing sessions. This gave me the chance to observe behaviours and reactions that might not come through in a survey or interview.

As Merriam and Tisdell (2016) point out, qualitative research is all about understanding people's real-life experiences and the meaning they give to them. This approach made it possible to dig deeper into students' and teachers' thoughts, emotions, and behaviour's—things that can't really be captured through numbers alone. Later, the researcher used thematic analysis to look for patterns and recurring themes in both the interview transcripts and observation notes, which helped reveal attitudes, concerns, and ideas about using AI in EFL writing instruction.

2.5 Quantitative Method

To balance out the personal insights from the qualitative side, the researcher also used a quantitative method to get a broader view of how students are using AI tools. Structured questionnaires were given to second-year EFL Master's students at Saida University. These surveys asked about how often they use AI tools, how they feel

those tools have affected their writing skills, and how they emotionally respond to writing tasks—specifically in terms of motivation, confidence, and stress. Once collected, the responses were analysed using descriptive statistics. This helped me identify patterns, compare the experiences of regular AI users with non-users, and get a clearer picture of the overall trends. Quantitative research is useful because it allows for objective measurement and comparison across a larger group (Bryman, 2016). It gave me the tools to examine how AI use might be linked to real changes

in writing performance and student well-being, offering a solid complement to the more personal insights gained through the qualitative methods.

2.6 2.6 Population and Sampling Procedure :

The sampling process involved selecting participants from both the Didactics and Literature & Civilization tracks of the second-year EFL Master's program. Who the study revolves around, with the intention of gathering data that could allow us to have a sample that could be used on a generalized population This research was conducted in the department of foreign languages (English Section) at Dr.Moulay Taher University of Saida. It focused on both students and teachers of EFL as a small sample to be used to later on be used to describe a much larger population during the 2024/2025 academic year. The primary aim was the noticing of the effect of AI on the writing skills and psychological effect due to the use of the tools

This study focused on a purposeful sample of 37 second-year Master's students enrolled in the English as a Foreign Language (EFL) program at Dr. Moulay Tahar University of Saida during the 2024/2025 academic year. These students, from the Didactics and Literature & Civilization tracks, were selected based on their active engagement with academic writing and prior use of AI writing tools. The sample included individuals with diverse linguistic backgrounds, levels of maturity, and academic performance, ensuring a broad representation. Additionally, 7 university instructors from the same department participated in the study. These instructors were chosen for their experience teaching writing courses and their familiarity with pedagogical innovations, particularly the use of emerging technologies such as AI in education. Their insights were crucial for evaluating the pedagogical and psychological impacts of AI-assisted writing.

2.8 Participants' Profile

a) Students:

The student participants were selected based on their academic engagement, linguistic competence, and prior exposure to AI tools in academic contexts. The sample consisted of students from the Master 2 programs in Didactics and Literature & Civilization. These students had already gained experience developing academic writing reports and were among the early adopters of AI tools like ChatGPT,

Grammarly, and Quillbot during the 2024/2025 academic year. The selection criteria included age, intellectual maturity, writing ability, and frequency of AI use, making them suitable for investigating both cognitive and emotional impacts.

b)Teachers:

Seven instructors from the English Department at Saida University participated in the study. The aim was to gather their professional perspectives on the influence of AI tools on students' writing development and emotional well-being. Their responses helped assess both the positive and negative implications of AI use, especially regarding academic integrity, student independence, and the psychological effects on learners.

2.10 Data Collection Tools

This research employed a **triangulated methodology** using three complementary tools: a **questionnaire** for students, **semi-structured interviews** for teachers, and **classroom observations** to document natural student behavior. These tools were selected to provide a comprehensive understanding of both the pedagogical effects and emotional dimensions of AI-assisted academic writing.

2.11 Questionnaire

To explore students' use of AI tools and their perceptions of its impact, an online questionnaire was created using Google Forms and distributed to 37 second-year EFL Master's students. The questionnaire consisted of two main sections:

- **Section One:** Focused on students' academic habits and their frequency of AI tool usage (e.g., ChatGPT, Grammarly, Quillbot).
- **Section Two:** Explored students' opinions on the educational value of AI tools, the challenges they faced, ethical concerns (e.g., plagiarism), and their perceived impact on motivation, confidence, independence, and critical thinking.

A mix of multiple-choice and open-ended questions enabled the collection of both quantifiable data and personal reflections, enhancing the depth of the analysis.

2.12 Interview

To complement the student data, semi-structured interviews were conducted with 7 EFL writing instructors. The goal was to gather expert insights into the pedagogical implications of AI-assisted writing. The interviews featured open-ended questions and covered the following themes:

- **Perceived impact on writing skills:** Effects on grammar, vocabulary, organization, and idea development.

- **Classroom practice and behavior:** How students engage with AI for brainstorming, drafting, revising, and seeking feedback.
- **Student motivation and engagement:** Observed changes in confidence, effort, and participation since the introduction of AI tools.
- **Challenges and risks:** Issues such as over-reliance, ethical concerns, inequality in access, and misuse of AI.
- **Comparison of feedback quality:** Teachers' views on AI-generated feedback versus traditional feedback.
- **Pedagogical balance:** Strategies for integrating AI tools while maintaining academic standards.
- **Professional and ethical guidance:** Recommendations for responsible AI integration that promotes authentic student voices.

The qualitative data from these interviews provided depth and context to the student questionnaire responses.

2.13 Classroom Observation

Classroom observations were conducted to record real-time student interactions with AI tools during regular writing sessions. This method helped validate and contextualize the findings from the questionnaires and interviews. The observations were guided by Angrosino's (2007) definition of observation as a method for documenting behaviors and classroom dynamics in natural settings, and DeWalt & DeWalt's (2011) emphasis on the value of participant observation in capturing the learning environment authentically.

The researcher employed a **non-participant observation approach**, attending two writing sessions per group in both the Didactics and Literature & Civilization tracks. A structured observation grid was used to ensure consistency, focusing on the following categories:

- Classroom task structure and students' writing behavior
- Frequency and manner of AI tool usage
- Verbal and non-verbal engagement
- Peer collaboration and teacher interaction
- Psychological signs (e.g., stress, confidence, hesitation)

Participants were **not informed** of the observations to preserve authentic classroom dynamics and reduce observer bias. This method offered unique insights into how AI tools are reshaping writing practices, classroom behavior, and student-teacher dynamics in EFL contexts.

3. Procedures

The data collection began with a clear explanation of the study's purpose to second-year EFL Master's students at Saida University. The researcher outlined the

focus on how AI content generators affect academic writing and psychological factors like motivation, anxiety, and confidence.

A structured questionnaire was distributed via Google Forms. Participation was voluntary, and students were assured of anonymity. The questionnaire explored AI usage frequency and its perceived impact on writing and emotional engagement.

Because this study used both quantitative and qualitative methods, the analysis included several different steps to match the type of data collected. The questionnaire results, which were quantitative, were analyzed using Microsoft Excel. Responses were coded and sorted to calculate basic statistics like frequencies and percentages. The data was also broken down to compare responses between students who regularly used AI tools and those who didn't. In some cases, cross-tabulation was used to look for possible connections between AI usage and factors like student confidence or writing anxiety. For the qualitative side, the interview transcripts and classroom observation notes were examined using thematic analysis. After being transcribed, the data was read through several times. Then, key themes were identified and coded manually. These included topics such as motivation, reliance on AI, writing improvements, and ethical concerns. These themes helped make sense of what both students and teachers had to say about AI tools in writing.

4. Data Analysis

Data were analyzed using both quantitative and qualitative methods. Questionnaire responses were examined through descriptive statistics to identify trends in AI usage and its effects on writing, confidence, stress, and motivation. The results wer as the following:

Section one: Personnel information:

1/Which educational resources do you trust most?

the main resoures use
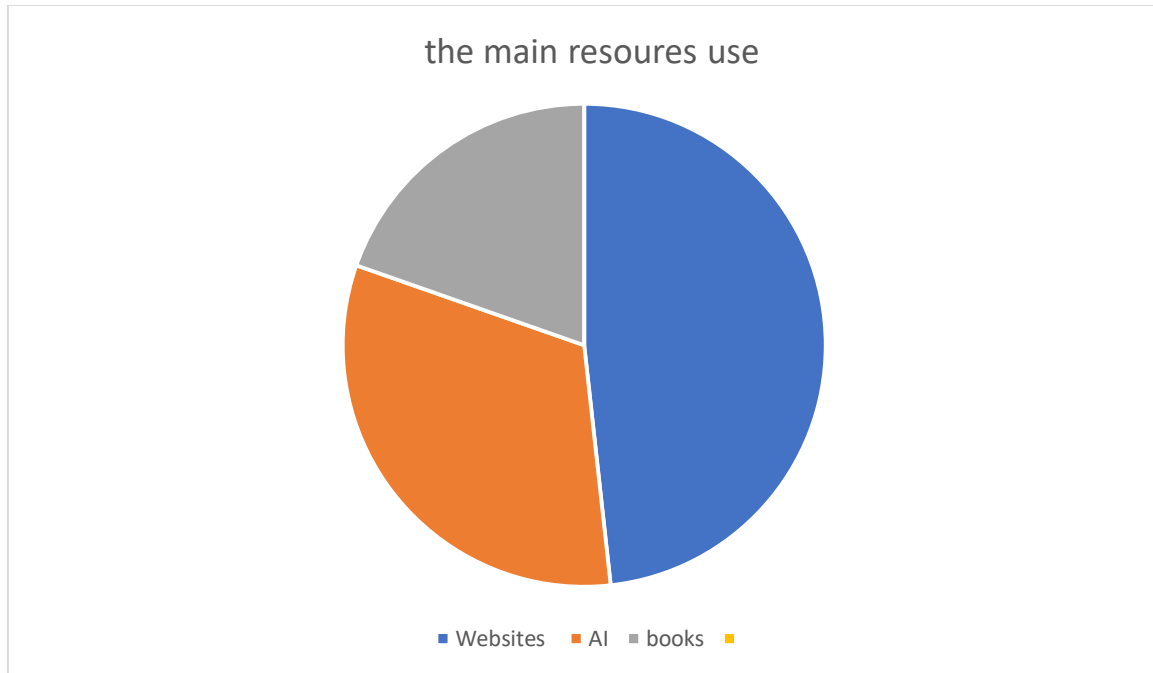
Figure 1 Main resources

Figure 1 illustrates that among the range of educational resources available, most students indicated aprimary reliance on artificial intelligence tools and internet-based platforms, while a smaller numberfavored traditional sources like printed books. This points to a shift in learning preferences toward more

technology-oriented methods, highlighting students' inclination for quick, accessible, and interactiveresources that support their academic efforts, particularly in writing.

2/Do you use artificial intelligence in your education?
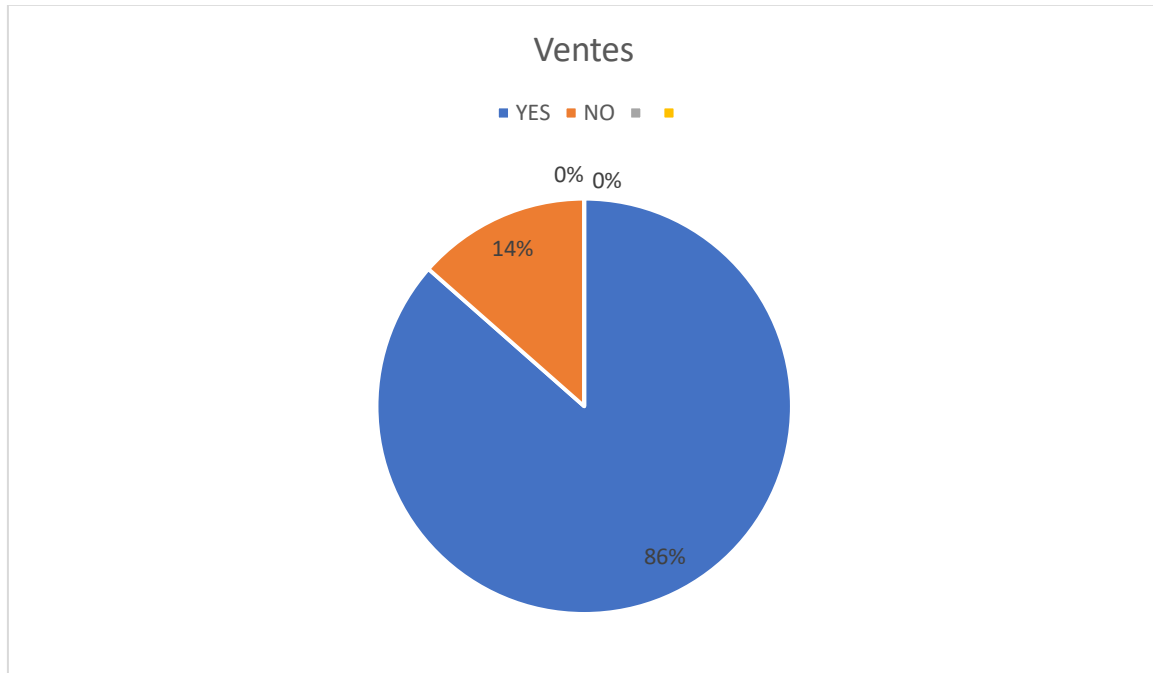
Figure 2 general use of the AI

As reflected in Figure 2, the findings show that a significant majority of students acknowledged using Artificial Intelligence in their educational activities, with 86.5% answering "Yes" and only 13.5%responding "No." This signifies a widespread adoption of AI tools among students, suggesting that thesetechnologies have become a key element in their academic approach, especially for writing andresearch-related tasks.
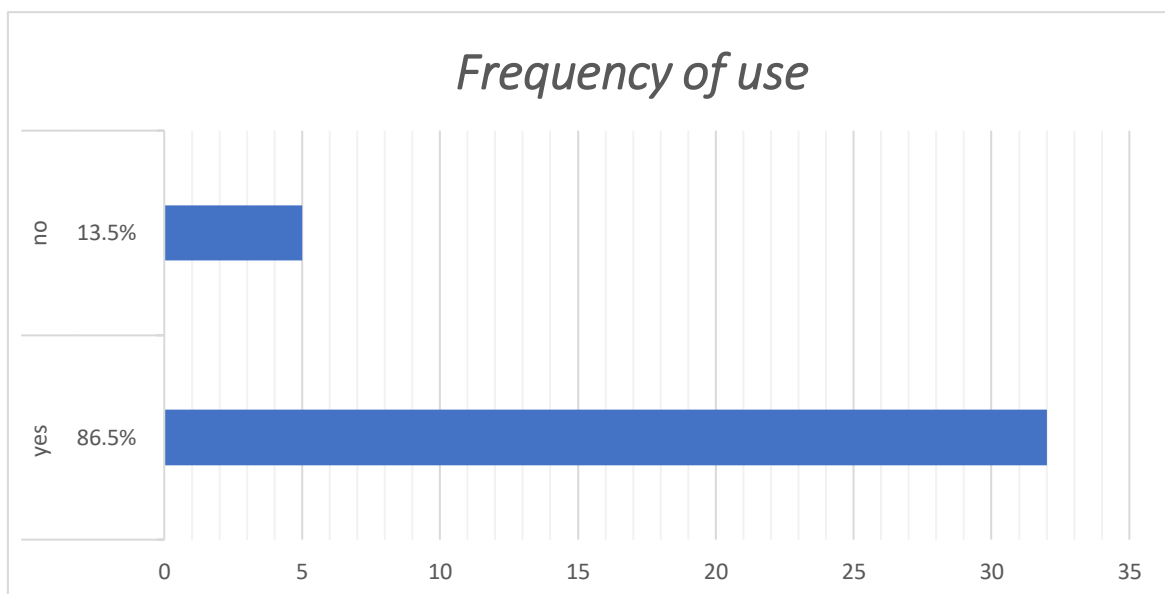
Figure 3 FREQUENCY OF USE

answers	100%	37 RESPENDENT
total		
Yes	86.5	5
no	13.5	32

Table 1FREQUENCY OF USE

The data presented in Figure 4 and Table 3 indicate that a large majority of respondents (86.5%) shared favorable views about the role of AI in education, while only 13.5% expressed negative opinions. This implies that students generally recognize the value of AI tools in improving their confidence, motivation, and writing quality, although a minority remains cautious or critical of potential limitations or risks.

4/When the home-school,teacher,do you use an IA content creation program?

	porsantages	*Number*
Yes	75.7%	28
No	24.3%	9
Total	100%	37

Table 2 General use of the IA counter

yes vs. no

As shown in Table 2, a considerable majority of students (75.7%) indicated that they make use of AI content-generation tools for home or academic tasks, while a smaller portion (24.3%) reported not using such tools. This result demonstrates a

strong tendency among students to incorporate AI applications like ChatGPT and Grammarly into their daily academic work, suggesting that these technologies have become a regular component of their writing practices at Saida University.

5/Do you think AI is a useful tool?
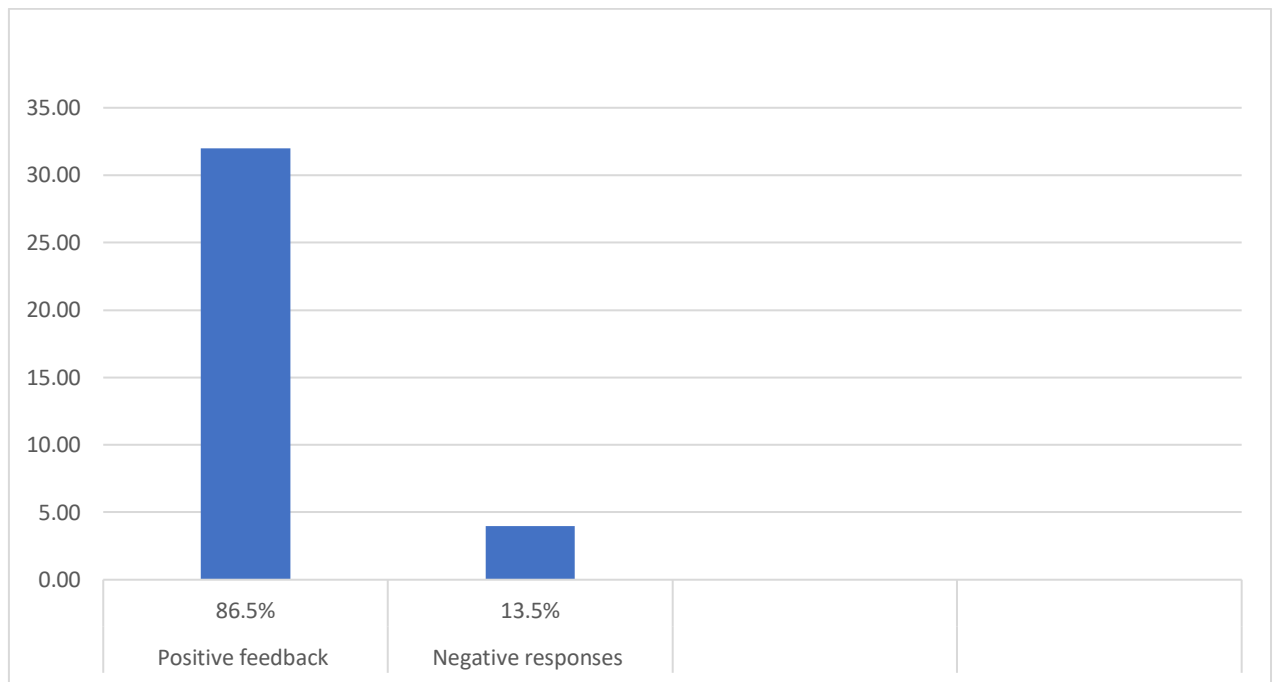
Figure 4 POSITIVE AND NEGATIVE FEEDBACK

As shown in Figure 4 and Table 3, 86.5% of students gave positive feedback regarding AI, highlighting perceived improvements in idea generation and writing clarity., while only 13.5% expressed negative opinions. This implies that students generally recognize the value of AI tools in improving their confidence, motivation, and writing quality, although a minority remains cautious or critical of potential limitations or risks..

	postages	*Number*
Positive feedback	86.5%	32
Negative responses	13.5%	4,00

Total	100%	37

Table 3 POSITIVE AND NEGATIVE FEEDBACK

Table 3 further details attitude of students regarding AI tools in education. An overwhelming majority (86.5%) gave positive feedback and said they thought AI-based tools would be useful in helping them towards being more accurate in their writing, be a good source of generating ideas, and that it would help to reduce their stress. On the other hand, 13.5% of sample provided negative opinions about the future, possibly originating in concerns about (for example) overreliance and ethicality. The inference is that the results to some extent portray a positive student perspective of the AI incorporating totheir practices in academic writing.

6/How can IA be effectively integrated into our education system to improve learning outcomes?

Student responses to this open-ended question emphasized the need for a structured approach to incorporating AI tools in educational contexts. Many proposed that AI should act as a supplementary resource, reinforcing rather than replacing traditional instruction. There was strong support for teacher involvement, ethical education, and equitable access to ensure all students are able to benefit from AI-supported learning.

8/How does IA have a positive or negative impact on academic ability?

Student reflections on the academic influence of AI were generally positive but included some concerns. Many noted improvements in grammar, vocabulary, and idea organization, which contributed to more fluent and coherent writing. However, a few students cautioned that excessive reliance on AI might undermine critical thinking and weaken the authenticity of their academic voice. These contrasting views underscore the importance of promoting responsible and balanced use of AI in learning.

5.Analysis of teachers' interview

Interviews with the 11 instructors at Saida University illuminated the intricate nature and multi-faceted role of AI content generators, specifically ChatGPT, on the writing skills of second-year EFL Master's students. Even as responses pointed to a varied effect of the AI tools, they revealed the extent to which they have started to re-form class writing practices and student engagement and learning.

The opening part of the interview focused on their general reflective views on AI in writing. All learners regarded AI content generators as tools with support and dark sides, one the one side being helpful for idea generation, content structuring, and language accuracy, and on the other, they instantly lead to dependence and a reduction in critical thinking. This paradox was most pronounced among those who indicated that the use of AI increases student confidence and reduces time, while hindering their ability to think critically and reflectively revise.

For individual writing skills, interviewees agreed that aspects of the language itself such as grammar, vocabulary, and composition were visibly better after using AIs. Thanks to the instantaneous, model-like output AI systems provided, students to get better at the accuracy of their grammar and the style of their language. But there were also signs of overdependence, with students at times leaning on AI shortcuts rather than learning for real. Organization, too, became more structural — the students wrote more slow-developing introductions and transitions, but they didn't develop their own argumentative logic.

An often-mentioned theme in the interviews was related to the impact of AI on concept generation and creativity. While AI tools assist students with brainstorming and the submission of a draft of their work, depth and voice have been found to decline by many teachers. The quality of the writing seemed either middle-of-the-road or competent, with none of the uniqueness of the student. This is indicative of a wider pedagogical issue: that, for AI, which seems productive, the seeds of underdeveloped cognitive engagement may be lurking.

In addition to these complications, teachers also noticed some trends in the strategies students used to integrate AI into their writing practices. Many students begin by

using AI for brainstorming or outlining, which helps reduce the anxiety of writing. Some use it to write entire paragraphs or essays in a rush, which leads to skimming of the content. AI-assisted summarization was also discovered to improve sentence level attributes, but was less beneficial for logical connection and critical reasoning. Such priority alignment, as the resurrection of forces like CrossFit was that much more stunning against the author's ongoing demand to be fed by AI, and AI alone: a transfer process quick, dull, no subtlety to it, no reverberating pedagogy such as "human" commentary provides. On student motivation items, teachers gave ambi volent responses. The researcher also found that AI tools motivated students to begin writing and eased the fear of making mistakes. But that productivity did not always result in productive learning. In some cases, motivation dropped from fine craftsmanship of writing to turning in the work on time. Better AI, worse students' The more competent students were self-sufficient with AI, and the less so the less honest, exemplifying a widening chasm between the two.

Prominent obstacles concerning the implementation of AI in EFL classrooms were also discussed in the interview. The over-dependency, skimming over the contents, moral ideology and weakening of students' individual styles were cited as the barriers by the teachers. AI-generated content was often lacking in depth and misled students who took it at face value. An unfairness in learning opportunities for students was establishing due also to a lack of digital resources.

Feedback When it comes to feedback; there was a clear gap between the AI feedback and the teacher feedback. While AI might predictively adjust quickly and based on error, the response is shallow, inhuman and does not resonate. By contrast, the feedback by the teacher was perceived to be better in stimulating reflection, revision, and long-term improvement. So perhaps a hybrid feedback model in which you combine the strengths of both AI and teacher feedback to boost student learning.

Reflection was used as a counterbalance by the teachers to address the outscale values of AI on the pros as well as cons. These targeting when students used AI and required transparency around AI use, the possibility to give assignments that required a critical

reflection and a process-oriented assessment of contributions and not only the final product. These were actually interventions to secure ongoing cognitive apprehension of and moral interactions with AI as a mere tool.

Lastly, in providing advice to other A\instructions; eating's teachers, the teachers focused on the importance of slow move, fostering critical thinking, drawing the ethical line, and valuing the student's creativity. Participants were especially prompted to engage in these activities involving their own feelings or reflecting upon their own experiences to safeguard the real voices of the writers.

In short, the findings illustrate the necessity of a pedagogically-oriented and moderate introduction of AI tools in EFL writing. "AI can contribute a lot in surface-level language production and in terms of getting students to overcome the fear of making mistakes, but it needs to be closely managed to avoid dependence on it, to ensure the integrity of students' work and proper depth of learning." Teachers are called upon, consequently, not simply as facilitators but as mediators to facilitate the systems within the social environments through which the resercher would like students to interact critically with the technological tools for their genuine academic maturation.

6.Observation Analysis

The classroom observations carried out during this study focused on how second-year EFL Master's students at Saida University interacted with AI content generators during their writing activities. The main goal was to understand how these tools influenced the accuracy, coherence, organization, and overall quality of students' written work.

6.1 Integration of AI Tools in the Writing Process

During class sessions, students regularly used AI tools like Grammarly and ChatGPT as part of their writing routine. These tools were used at different stages of the writing process:

- **Pre-writing stage:** Some students turned to ChatGPT for brainstorming and generating ideas. Common prompts included things like, "Give me ideas for a cause-and-effect essay" or "How do I structure an argumentative paragraph?"

- **Drafting stage:** Tools such as Grammarly and Quillbot were used to help with sentence construction and real-time grammar corrections.

- **Revising stage:** Students relied on these tools for rephrasing, finding synonyms, and tightening up their language. Grammarly's "clarity" and "conciseness" functionswereespeciallypopular.

These tools clearly influenced how students approached writing—making the process faster and helping them produce cleaner, more polished drafts from the outset.

6.2 Improvements in Grammar and Syntax

It was clear that students who used tools like Grammarly made fewer grammar and syntax mistakes than those using traditional methods alone. Their sentence structures were more varied, punctuation was more accurate, and subject-verb agreement errors were much less common. These improvements highlight how helpful AI can be in offering immediate, corrective feedback during the writing process.

6.3   Enhanced   Vocabulary   Use   and   Word   Choice

Students often used AI tools to improve their word choices. During editing, many turned to Quillbot's paraphrasing function or asked ChatGPT to suggest better vocabulary. As a result, their writing featured more precise and academic word choices, especially in argumentative and expository essays.

That said, there were moments when word choices felt a bit too advanced or artificial, likely due to over-reliance on AI suggestions. In such cases, the vocabulary didn't always match the student's typical tone or level, which slightly disrupted the natural flow of their writing.

4.4. Improved Organization and Coherence

AI-assisted students tended to write more organized paragraphs, with clear topic sentences and logically arranged supporting details. ChatGPT was often used to help create outlines or suggest how to structure paragraphs, which helped students improve the flow and clarity of their ideas.

Linking words like "furthermore," "in contrast," or "as a result" were used more effectively, and transitions between ideas were smoothe especially when students actively asked AI for help with connecting points.

4.5   Overdependence   on   AI   Patterns

While the overall quality of writing improved, one downside observed was a tendency toward formulaic writing among students who heavily relied on AI. Many started using similar paragraph structures, repeated sentence openers, and phrasing patterns typical of AI-generated content. This raised concerns about the loss of personal writing style and creative expression, as some students began to write more like the AI than themselves.

4.6   Teacher-Student   Interaction   and   Feedback   Dynamics

In classrooms where teachers included AI in writing tasks and openly discussed its use, students tended to reflect more on the suggestions AI provided. These students were more thoughtful, selectively choosing which changes to accept and showing a growing sense of critical thinking.

In contrast, when teachers were unfamiliar with AI tools or didn't incorporate them into the learning process, students used the tools on their own—often without proper understanding. In such cases, they were more likely to accept every suggestion blindly, without grasping the reasoning behind the changes.

Conclusion

This chapter outlined the research methods used to investigate the impact of AI content generators on the writing skills and emotional engagement of second-year EFL Master's students at Saida University. Employing a mixed-methods approach, the study combined the strengths of both quantitative and qualitative data to provide a comprehensive view of how these tools are shaping academic writing practices in an Algerian university context. Data collection involved three key instruments: student questionnaires, teacher interviews, and classroom observations. Each method offered a distinct perspective, questionnaire revealed usage patterns and student perceptions, interview captured teachers' insights and pedagogical concerns, while classroom observation provided direct evidence of students' real-time behavior and interaction with AI tools in learning environments.

These methods were carefully selected to ensure methodological rigor and ethical integrity. Together, they enabled a well-rounded understanding that goes beyond surface-level outcomes, highlighting both the cognitive and emotional dimensions of students' experiences with AI-assisted writing. This chapter sets the foundation for analyzing the research findings by establishing the context, participants, and tools used. The next chapter presents and interprets these findings, comparing outcomes between AI users and non-users across different academic tracks, and exploring the broader implications for teaching, learning, and the future integration of AI in EFL writing instruction.

Chapter Three

Introduction

This chapter presents the discussion and interpretation of the results obtained through the research tools used in this study, namely the questionnaire, interviews, and classroom observations. It aims to explain how AI content generators such as ChatGPT, Grammarly, and Wordtune are influencing the academic writing performance and emotional responses of second-year EFL Master's students at Saida University. By comparing the findings with the research questions and existing literature, this chapter highlights key patterns, explains their significance, and reflects on both the positive and negative impacts of AI on students' writing practices and psychological engagement

1.Discussion and Interpretation of the Results:

From the questionnaire, most students said they use AI tools a lot. The most used were ChatGPT and Grammarly. These tools help them to correct grammar, improve vocabulary, and rewrite texts. Many students said their writing become more organized and clearer. These results support the studies of Graham (2021) and Huang et al. (2021), who said that AI tools improve surface-level writing like grammar and structure. Also, in the classroom, it was observed that students who use AI started tasks faster, revised more, and had better writing flow than students who don't use AI.

Students also said that AI tools help them feel better. They said they feel more motivated and less stressed because AI gives fast corrections. More than 70% said they feel more confident to write with AI (D'Mello & Graesser, 2015). This emotional support is important because many students are afraid to write. In the observation, the students who used AI were more active in class, they talked with classmates, and worked independently. They were more relaxed and tried new things in writing.

But there was also some negative results. Some students said they are too dependent on AI. They feel they cannot write alone without the help of these tools. This means their own writing skills maybe going down. Also, their personal voice is missing. Teachers also noticed this. They said that students use AI to fix grammar, but

their writing is not original or deep. This supports what Howard (2020) and Zhou & Kao (2023) found that AI can make writing more "flat" and less creative. The text looks good, but it don't show the student's own ideas.

In the interviews, teachers said that AI tools help students fix mistakes and organize their ideas. But they also said that some students use AI too much. They just copy what AI writes and don't think deeply. Some teachers said good students use AI in a smart way, but weak students rely on it too much. This make the learning gap bigger. Also, students' essays are sometimes too similar, and teachers can tell the voice is not the student's own. These points are similar to what Kasneci et al. (2023) and Zhou et al. (2023) said, AI can hurt learning if students use it without thinking or guidance.

Creativity is another problem. Teachers said students don't think enough or give original ideas. They just follow AI suggestions. This also happened in the classroom. Some students made very basic arguments and didn't revise their work deeply. AI helped them start, but didn't help them improve their critical thinking. This supports what Selwyn (2019) said, that easy technology can reduce the effort and deep learning if students are not pushed to think.

When the researcher observed the classes, it was easy to see the difference. Students who used AI had better vocabulary, longer sentences, and more polished writing. They were more confident and participated more. On the other side, students who didn't use AI made more grammar mistakes, had limited vocabulary, and often gave their first drafts without revision. These students were more passive, needed more help from the teacher, and were afraid to take risks. So, it's clear that AI tools helped in writing and in students' behaviour and feelings.

Still, AI tools also caused some problems. Some students copied too much and accepted all suggestions without thinking. This is dangerous because it stops learning. Selwyn (2019) and Sutherland-Smith (2010) said that students must learn how to use AI ethically. In this study, students and teachers said that students must be trained to

use AI in a good way. Teachers should guide them to reflect and not just copy. One good solution is to ask students to explain how they used AI in their writing. This help them think and be more responsible.

Another problem is ethics. Many students said they are not sure if their AI-assisted work is really "original." They worry it can be plagiarism. Teachers also had different views. Some think AI is helpful for modern education, but others fear it will damage academic integrity. This shows the need for clear rules and AI literacy (Selwyn, 2019; Sutherland-Smith, 2010). When teachers talk about ethics, students use AI more responsibly. So, the teacher's role is still very important.

The questionnaire, the interview, and the observation show the same thing: AI tools help students improve grammar, vocabulary, and structure, and make them more confident. But they also create risks of over-dependence and weak thinking. These findings support what many scholars say. Graham (2021) and Huang et al. (2021) saw the positive side of AI. But Howard (2020), Zhou & Kao (2023), and Selwyn (2019) warned about losing creativity and real thinking.

In conclusion, AI tools are changing how students write and how they feel about writing. These tools can support grammar and motivation, but they also make some students lazy or over-reliant. Teachers must help students use AI in the right way, not as a shortcut, but as a support. If used well, AI can help students grow as writers and learners. But balance is the key. the researcher must teach students to think, revise, and find their own voice even when using technology.

2.Recommendation

Based on the results from the questionnaire, the interviews with teachers, and the classroom observation, it was clear that AI tools like ChatGPT and Grammarly have both good and bad effects on students' writing. Many students felt more confident and their grammar improved, but also some of them became too dependent and lost their personal style. For this reason, the following

recommendations are suggested to help students and teachers use AI in a better and more useful way in the EFL classroom.

2.1 Teaching AI Literacy in the EFL Curriculum

One of the main recommendations from this study is that universities should start teaching **AI literacy** to EFL students. Many students are already using AI tools like ChatGPT or Grammarly, but they don't always know how to use them in a correct and ethical way. AI literacy means helping students understand what AI can do, what are the limits, and how to use it for learning—not just for finishing homework. When students are trained in AI literacy, they can use these tools to support their writing and thinking, not to replace it.

2.2. Encouraging Academic Honesty and Critical Thinking

Another important point is to teach students how to stay **original** and **honest** in their work. Some students in this research said they feel their writing is not their own when they use AI too much. So, the university should include lessons about **plagiarism**, **ethics**, and **thinking with AI**. Students must learn to ask: "Is this my idea?" or "Am I just copying?" This can help them keep their own voice and avoid overdependence.

2.3. Training Teachers to Support AI Integration

Teachers also need to understand how AI tools work. In the interviews, some teachers said they don't know how to deal with students who use AI. That's why universities should also give **training to teachers**. When teachers know how to use AI well, they can help students better. They can show how to use AI for planning, revising, or checking grammar, but still ask students to write their own content and reflect on it. This way, AI becomes part of the process, not the full answer.

2.4. Finding the Right Balance Between AI and Teacher Feedback

From the classroom observations, the researcher saw that students who used AI together with **teacher guidance** performed better than those who used AI alone.

That's why the best way to use AI is to keep a **balance**. AI can help with grammar or idea organization, but the teacher can help with deeper things like arguments, analysis, and creativity. A good combination between AI and teacher feedback helps students grow more and write better texts.

2.5. Supporting Long-Term Learning and Student Voice

Finally, AI tools should not be used just to finish tasks fast. They should be used to **support learning**, help students become more confident, and build their own **writing identity**. Teachers should ask students to explain how they used AI or what changes they made. This will keep students involved in the process. The goal is not perfect grammar, but real learning. If students learn to use AI the right way, it can help them now and in their future studies too.

Conclusion

The findings of this chapter showed that AI tools like ChatGPT and Grammarly helped many EFL Master's students improve their grammar, vocabulary, and writing structure. Students also felt more confident and less anxious when using these tools. However, some became too dependent on AI, which affected their creativity and critical thinking. Teachers noticed that while writing looked better, it sometimes lacked depth and originality.

Based on these results, the chapter also suggested some recommendations. These include teaching students how to use AI tools responsibly, training teachers, and making sure AI is used to support, not to replace real learning. When balanced well, AI can help students grow as writers while keeping their own voice and ideas.

The General Conclusion

General Conclusion

This study aimed to explore how AI-powered content generation tools such as ChatGPT, Grammarly, and Perplexity affect both the writing skills and psychological aspects of second-year EFL Master's students at Saida University. The research focused not only on students' writing performance like grammar, vocabulary, and organization, but also on how these tools influenced their motivation, confidence, and stress during the writing process.

The main findings confirmed most of the study's hypotheses. AI tools were found to help students improve the surface-level quality of their writing and gave them more confidence and motivation to complete academic tasks. However, the results also showed that too much reliance on AI could reduce students' creativity and critical thinking. Teachers reported that while students' grammar and structure had improved, their personal voice and deep thinking were sometimes missing. Observations in real classroom settings supported this view, showing that students who used AI were more confident but less engaged in deeper aspects of writing.

The research questions and hypotheses were well connected. Each hypothesis clearly responded to one or more of the research questions. For example, the question about AI's effect on writing was supported by the hypothesis that AI improves grammar and organization. The question about psychological effects was linked to the idea that AI boosts confidence and reduces stress. Questions on perception and ethical use were also reflected in the hypotheses about over-reliance and the importance of a pedagogical framework. This alignment helped the study to stay focused and coherent.

Based on these findings, several recommendations were provided. The study suggested integrating AI literacy into EFL curricula, offering training for both teachers and students, and encouraging a balanced use of AI and human feedback. These steps can help ensure that AI tools support students' development without replacing their own thinking or writing identity.

Although this research provided valuable insights, it had some limitations. It was based on a small sample from one university, so the results cannot be generalized to all EFL learners. Still, it adds to the growing understanding of how AI affects language education. Future studies are encouraged to examine the long-term impact of AI on writing and learning, and how to design teaching strategies that combine innovation with academic integrity.

In conclusion, AI tools can offer strong support for EFL students' writing and emotional engagement, but their use must be guided by thoughtful teaching and ethical principles. When used carefully, AI can become a valuable part of academic writing instruction without harming originality or deep learning.

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Appendices list :

- ➤ **Appendix A** – Observation Checklist
- ➤ **Appendix B** – Students' Questionnaire
- ➤ **Appendix C** – Teachers' Interview Questions

Appendix AObservation

NO.	OBSERVATION ITEM
1	Number of participants in the session
2	Field of study (Didactics / Literature)
3	Type of writing task
4	AI tools used
5	Mode of AI tool usage
6	Interaction with AI tools
7	Student confidence level
8	Peer interaction
9	Student-teacher interaction
10	Psychological and behavioural indicators
11	Teacher response to AI usage
12	Additional notes

Appendix B Student Questionnaire

1. What study resources do you rely on the most?
(You may choose more than one option)

- Books

- Artificial Intelligence tools

- Internet websites

A. If you rely on another resource, please specify:

_____

B. Please explain the reason for your choice:

_____

_____

2. Do you use artificial intelligence in your studies?

- Yes

- No

If yes, how often do you use AI in your daily studies?

- Always

- Sometimes

- Rarely

_____

3. When a professor gives you a homework assignment, do you use AI content generators?

- Yes

- No

If yes, which application(s) do you use?

_____

_____

4. Do you believe that AI is a beneficial educational tool?

- Yes

- No

Please explain your choice:

_____

_____

5. In your opinion, how can AI be effectively incorporated into educational systems to improve learning outcomes?

_____

_____

6. What obstacles must be addressed to ensure fair and equitable access to AI-based educational resources?

_____

_____

7. In your experience, what are the positive and/or negative impacts of AI on academic performance?

_____

_____

8. How can AI be used to create personalized learning experiences that consider students' individual learning styles, preferences, and abilities?

_____

_____

Appendix C Teacher Interview Questions

1. Based on your experience, what impact do AI content generators (e.g., ChatGPT, Grammarly, Quillbot) have on the writing skills of second-year EFL Master's students at Saida University?

2. In your classroom, which aspects of writing skills (e.g., grammar, vocabulary, organization, idea development) do you believe benefit most from the use of AI tools?

3. What are the most common ways your students use AI content generators during the writing process?
(e.g., for brainstorming, drafting, revising, or receiving feedback)

4. Have you noticed any changes in student motivation, participation, or confidence in writing assignments since they started using AI content generators? Please explain.

5. What are the main challenges or potential risks associated with integrating AI content generators into EFL writing instruction?

6. In your opinion, how does AI-generated feedback compare to traditional teacher feedback in terms of clarity, effectiveness, and overall impact on students' writing development?

7. How do you personally balance the advantages and disadvantages of allowing students to use AI tools in their writing practices?

8. What practical advice would you offer to EFL teachers who are considering incorporating AI content generators into their teaching?

9. How do you promote academic integrity and encourage students to preserve their personal voice and originality while using AI tools?