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Investigating the Ethical use of Artificial Intelligence to Uphold Academic Integrity in Academic Writing

The Case of EFL Master Students at Biskra University

A Dissertation Submitted to the Department of Foreign Languages in Partial Fulfilments of the Requirements for the Master's Degree (LMD) in Sciences of Language

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Dedication

This thesis work is dedicated to my parents Mohamed Cherif and Nadjette who have always loved me unconditionally.

Their support and encouragement have been the pillars of strength that carried me through this endeavour.

To my husband and soulmate Samir, thank you for your patience and steadfast belief in me.

To my precious son Siradj Eddine, your joy, innocence, and inspiration have given deeper meaning to this journey.

To my brothers and sisters Mohamed, Mounder, Safa and Maroua. I wish you a successful life.

To my dear aunt Saida, special dedication to you with deep appreciation and gratitude for your invaluable support.

With love and loyalty, I dedicate those words to the spirit of my dear grandmother, who is no longer with us, but is still present in my heart and memory, a source of tenderness and wisdom and a source of unforgettable warmth. May God have mercy on her and grant her eternal rest.

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Abstract

Artificial intelligence has revolutionized the world with its unlimited possibilities that provides to people. Education is one of the fields which is influenced by AI. AI comes to overcome some of the challenges that writing tasks rise, such as style, writing convention, and lack of vocabulary. The use of AI rises some ethical implications that students, in many occasions, are unaware of them. The present study that is entitled "Investigating the Ethical Use of Artificial Intelligence to Uphold Academic Integrity in Academic Writing" aims at tracing the link between the use of AI and issues of academic integrity and how students of Higher Education commit unethical practices that think they are acceptable. Thus, the central hypothesis of this research that the unethical and inappropriate use of AI undermines the honesty and credibility of academic work. To investigate this, a mixed approach was adopted. A semi-structured online questionnaire that was submitted to 45 Master One students at Mohammed Kheidar University, and the interview were conducted with 6 academic writing teachers from the same institution. The findings show a general agreement among both teachers and students about the risks of using AI unethically. The study recommends that educational institutions need to set clear policies and measurements not to ban, but to regulate the use of AI in Higher Education**.**

Key words: Academic Integrity, Academic Writing, Artificial Intelligence, Ethical Implications

List of Abbreviations and Acronyms

MA: Machine Learning

DL: Deep Learning

CC: Cognitive Computing

CV: Computer vision

U: UNESCO

CPU: Central Processing Unit

GPS: General Problem Solva

NLP: Natural Language Processing

ML: Machine Learning

GPT: Generative Pre-Learning Transformer

COPT: Committee on Publication Ethics

SPSS: Statistical Package for Social Science

TVET: Technical and Vocational Education and Training

EFL: English Foreign Language

AIED: Artificial Intelligence in Education

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General Introduction

1. Background of the Study:

Artificial intelligence (AI) has emerged as a fundamental resource in the educational domain, especially concerning academic writing. Although AI-driven applications, such as Grammarly, Turnitin, and ChatGPT, can significantly improve students' writing skills and identify instances of plagiarism, they also pose threats to academic integrity when improperly utilized. This study seeks to investigate the ethical considerations surrounding the use of AI in academic writing and to recommend approaches for its responsible application to ensure the maintenance of academic integrity.

The rise of Artificial Intelligence (AI) has brought about a revolutionary change, affecting nearly all sectors, with education being no exception. Generative AI tools, which can create text, images, and code similar to human output, are now easily accessible to both students and educators. While AI can be an effective resource for improving learning, aiding research, and simplifying administrative responsibilities, its widespread availability—especially in academic writing—has sparked a global discussion about academic integrity. The simplicity with which AI can produce essays, condense texts, or respond to intricate questions presents a significant challenge to traditional concepts of authorship, originality, and intellectual honesty.

Academic integrity, which is characterized by a commitment to honest and responsible scholarship, serves as the foundation of higher education. It includes fundamental principles such as honesty, trust, fairness, respect, and responsibility (Fishman, 2014). The careless or deceptive application of AI in academic writing can directly compromise these principles, obscuring the distinction between valid AI-assisted learning and blatant academic dishonesty. Universities around the globe are facing the challenge of modifying their policies, teaching methods, and evaluation techniques to effectively incorporate AI while preserving the integrity of academic endeavours.

On a global scale, universities have taken a variety of approaches, ranging from complete prohibitions on AI tools to cautious incorporation and the formulation of new guidelines (Stahl et al., 2023; Tlili et al., 2023). Nonetheless, there exist a substantial gap in comprehending the complex ethical considerations from the viewpoints of those directly affected: the students utilizing these tools and the faculty evaluating their submissions. Additionally, the ethical ramifications go beyond simply detecting plagiarism. Concerns arise regarding intellectual property rights, responsibility for mistakes made by AI, the impact on the cultivation of critical thinking skills when content is delegated to AI, and the fair access to and competence in utilizing these tools among diverse student groups.

Within the Algerian context, higher education institutions encounter similar challenges. Although national policies concerning AI use in academia are still in development, the global dialogue accentuates the necessity of addressing this matter locally. It is vital to understand how Algerian students and educators perceive and navigate these issues in order to formulate effective, context-specific strategies.

This research aims to investigate this important issue, particularly examining the ethical considerations of AI usage in academic writing within Algerian higher education institutions and to what extent AI use can maintain or undermine academic integrity. By exploring the views of key stakeholders (students and teachers), this study seeks to aid in the creation of strong frameworks that encourage responsible AI integration while meticulously maintaining academic integrity, in the future.

2. Statement of the Problem:

With the rapid growth of technology and technological advancements, we are moving to be more digital than ever. As far as AI is concerned, it provides unlimited possibilities and services in all fields, and education is one of them. Recently, the education sector has witnessed a drastic positive change with the expansion of AI tools into learning-teaching

process. Students were exposed to AI and its tools widely. The expansion of generative artificial intelligence tools, indeed, presents a dual challenge. On one side, these tools enhance writing, foster idea generation, and promote learning; conversely, they encourage academic dishonesty and an overdependence on algorithmically produced content. This investigation is particularly relevant as it examines the utilization of AI tools by students in academic writing, and to what extent this inappropriate use can affect the academic integrity of the written product, rather than enhancing it.

3. Research Aims:

The research aim of the study is to investigate the unethical practices of AI use by University students; how they harm the honesty of the work. Second, the present study aims to rise the students' awareness, in particular, about the risks of using AI tools improperly or unethically.

4. Research Objectives:

- To assess the current use of AI tools in academic writing.
- To identify ethical risks and opportunities associated with AI in education.
- To evaluate perceptions of students, educators, and administrators.
- To recommend best practices for the ethical use of AI in academic contexts.

  How can the unethical use of AI tools in academic writing be risky to Academic integrity in academic writing?

5. Research Questions:

RQ1: How do students and educators perceive the role of AI in upholding or undermining academic integrity?

RQ2: What ethical concerns arise from the use of AI tools in academic writing?

RQ: Does the use of AI maintain or undermine academic integrity in academic writing?

6. Research Hypotheses:

Based on the aforementioned research question, one hypothesis can be drawn:

- We hypothesize that the unethical use of AI by University students would risk the academic integrity of the academic written product.

7. Significance of the Study:

This study will bridge the gap between technology and ethics in academia. It will empower educators and institutions to embrace AI responsibility, ensuring that academic integrity is preserved even as tools evolve.

8. Methodology :

8.1 Research Design:

Since the focus on the study is to investigate the ethical use of AI by university students; therefore, a mixed approach, that uses both qualitative and quantitative methods, was opted to find answers to the research questions. The mixed-methods approach will be used, combining quantitative survey and qualitative interviews. This method is suitable to the nature of the study that belongs to social sciences. This study opted for a small scale study because the findings will not be Generalized.

8.2 Population and Sample:

In order to gather data and ensure the aim of the study, which is investigating to what extent students of higher education use, inappropriately AI in academic writing that affects academic integrity. In doing so, the researcher chose 45 master one students of Sciences of the language. The participants were selected randomly. In addition, from a population of more than 50teachers in the English division at Biskra University, 6 teachers with different teaching experiences were selected randomly to answer the interview.

8.3 Data collection Tools:

In order to be able to answer the designed research question, two data tools were used, namely, a semi-structured questionnaire for EFL students of Mohamed Kheidar University. The questionnaire was administrated to 45 Master One students of Sciences of language to obtain their attitudes on the risks of using AI on academic integrity and if these students are aware of the unethical implications that the use of artificial intelligence it applies. As far as teachers are concerned, a semi-structured interview of 12 questions was submitted to them in order to give their personal feedback and attitudes on the topic being discussed. Both the questionnaire of teachers and the questionnaire of students were submitted online.

8.4. Data Analysis Procedures:

The data obtained from the questionnaires administered to students and teachers are presented herein utilizing frequency counts and descriptive analysis conducted via Excel.

9. Structure of the Dissertation:

The present dissertation is organized into three chapters. The initial chapter focuses on the theoretical framework and literature review on academic writing, its genres, its imports and its challenges. This chapter ends with an overview on academic writing in the age of technology. The second chapter is addressed to A, its definition, history, fields, advantages, disadvantages and, of course, the ethical issues with AI in higher education. The last chapter is devoted to the analysis of the student's questionnaire and teachers interview aimed at either confirming or refuting the previously stated hypothesis.

Chapter One:

Academic Writing

Introduction

Academic writing is a formal method of expression prevalent in universities, research organizations, and scholarly journals. Its primary aim is to convey ideas, arguments, and research results in a clear, objective, and professional manner.It adheres to a structured and methodical approach that prioritizes clarity, precision, and evidence-based reasoning, while also following established conventions and citation formats. The primary goal of academic writing is to offer new perspectives, enhance scholarly debates, and display a comprehensive understanding of the topic at hand.

This form of writing is distinguished by its objectivity, formality, and the use of reliable sources to substantiate claims. As an essential skill for students, researchers, and scholars alike, academic writing is vital for developing intellectual discourse, encouraging critical thinking, and facilitating the progress of knowledge across various academic disciplines. Writing in this style can be quite challenging, as it requires specific skills and critical thinking. This chapter will provide an in-depth exploration of academic writing, including its various genres, significance, challenges, and its evolution in the technology.

1.1 Definition of Writing:

According to Peter Elbow (1973),Writing is a two-step process: first, you determine your message, and then you express it in words. Decide on what you want to communicate; refrain from starting to write until you have clarity. Make a plan; utilize an outline and only begin writing afterward. At the core of this approach is the concept of maintaining control and ensuring things remain orderly. Avoid allowing your thoughts to drift into chaos (14-16).

For Douglas Frasier (2001), writing is a complex process that involves starting with no clear meaning and gradually evolving words until you know what to say. It is not about transmitting a message but about grazing and cooking a message. Writing is a transaction

with words, allowing you to make something better than what you initially thought or perceived. The true efficiency lies in working up to what you want to say and how to say it, rather than trying to say it well before you are ready (p.336).The Oxford English Dictionary defines writing as falling into three specific grammatical classifications. As a noun, it refers to the tangible results of written communication. When used as a verb, it describes the dynamic activity of creating text on a surface.

Furthermore, in its adjectival form, it serves to qualify nouns, thereby categorizing various types of writing, such as academic writing or creative writing, which emphasizes the context or genre pertinent to the act. Scholars have proffered multiple interpretations of writing in its verbal form, acknowledging that their definitions frequently fail to capture the comprehensive intricacies associated with writing, as observed by Weigle (2002). This complex nature of writing underscores its richness and invites inquiry into the ways different contexts influence our comprehension of this essential human endeavour.

1.2 Definition of Academic Writing:

Maroua (2024) asserts that according to university of Leeds, 2019, Academic writing represents a specific style of writing that can be characterized in various ways. According to one definition, academic writing is described as being “clear, concise, focused, organized, and supported by evidence. Its aim is to enhance the reader’s comprehension.(P. 40) Academic writing, then is characterized of being clear.

According to Alice. O and Ann H, academic writing refers to the style of writing utilized in high school and college courses. It differs from creative writing, which is what you engage in when crafting stories. Moreover, it is distinct from personal writing, the type of writing you do when composing letters or emails to friends and family. Both creative and personal writing are informal, allowing for the use of slang, abbreviations, and sentence fragments. In contrast, academic writing is formal; thus, it is important to avoid slang and contractions.

Additionally, you should ensure that your sentences are complete and structured in an organized manner (2007, p.3).

Writing academically in English is likely distinct from academic writing in your first language. The vocabulary, grammatical structures, and methods of structuring ideas may not align with what you are familiar with. It's possible that the English writing style appears awkward, redundant, or even discourteous to you. However, it is important to keep in mind that this approach is neither superior nor inferior to others; it is simply different (Alice. O and Ann H. 2007. P. 3)

1.3 Characteristics of Academic Writing:

Gillett (n.d) asserts that academic writing in English follows a linear structure, meaning it focuses on a single central idea, with each component reinforcing the primary argument while avoiding unnecessary digressions or redundancies. The primary aim of this style is to convey information rather than to amuse the reader. Moreover, he highlights eight essential characteristics that define academic writing: complexity, formality, objectivity, explicitness, precision, accuracy, hedging, and a sense of responsibility, all meticulously organized and thoughtfully planned. These attributes work together to create a cohesive and compelling scholarly discourse, ensuring that the message is both clear and effective.

1.3.1Complexity

As articulated by (Azziz and Hassani (2024), the domain of written communication emerges as a complex tapestry, significantly more intricate than its spoken form. It interlaces longer lexemes, an expansive vocabulary, and a diverse range of specialized terminology that elegantly traverses the page. This modality of expression thrives on noun-centric constructions, which frequently take precedence over verbs, thereby crafting statements that are both concise and profoundly impactful.

In stark contrast to the dynamic nature of verbal interaction, writing necessitates a level of precision that amplifies its complexity. Each meticulously selected word contributes to a densely woven fabric of meaning, inviting readers to engage with a broad spectrum of concepts and emotions. Consequently, this form of expression serves not merely to convey information but also to captivate the audience, immersing them in a realm where language functions as an influential instrument for both clarity and creativity. (p. 44)

1.3.2 Formality

Academic writing mandates the adoption of a formal tone, which necessitates the exclusion of everyday colloquialisms. As articulated by Mateus (2017, p. 6), it is prudent to employ Standard English vocabulary, favouring terms with classical origins from Greek and Latin rather than utilizing more commonplace expressions. It is essential for writers to refrain from using informal labels, slang, or any potentially offensive terminology. The objective is to elevate discourse through the utilization of formal language, thereby enhancing clarity and demonstrating respect for the gravity of academic pursuits. In the process of crafting scholarly narratives, it is imperative to select our words with precision to ensure that our ideas are communicated with both authority and sophistication. This careful consideration of language not only enriches the text but also contributes to the overall integrity of academic dialogue. By adhering to these principles, we can facilitate more profound engagement with our subject matter and foster a greater appreciation for the nuances of scholarly communication.

1.3.3 Precision

In the realm of academic writing, clarity reigns supreme, and the meticulous presentation of facts and figures is essential. Crafting sentences that meander on for too long, laden with numerous clauses, can easily obscure meaning and confuse readers. To uphold the integrity of your message, it’s crucial to prioritize brevity and clarity, ensuring that every

word serves a purpose. By doing so, you not only eliminate ambiguity but also enhance the precision and specificity of your arguments, as highlighted by Mateus (2017).

1.3.4 Objectivity

In scholarly writing, maintaining an objective tone is crucial, avoiding personal biases. This approach minimizes references to the author and audience, focusing instead on the core ideas and arguments. Academic discourse often emphasizes nouns and adjectives, prioritizing content over verbs and adverbs. Mateus (2017) notes that this style consciously omits personal pronouns and possessive terms. Additionally, academic sentences are structured to place impactful elements at the end, enhancing the persuasive power of the arguments and capturing the reader's attention. This strategic design ensures that the essence of the message is conveyed clearly and authoritatively.

1.3.5 Explicitness

In the realm of academic writing, illuminating the connections woven throughout the text is of paramount importance. For Azziz and Hassani (2024)skilled writer must craft each section in such a way that the links between disparate ideas become vivid for the reader. This clarity is not merely a convenience; it is essential for guiding the audience through the intricate tapestry of thought. To achieve this seamless flow, the strategic deployment of signalling wordsacts as a beacon, illuminating the path from one concept to another. By thoughtfully selecting these linguistic signposts, writers can enhance comprehension and engagement, ensuring that the reader navigates the complex landscape of their argument with ease and understanding.

1.3.6 Accuracy

Accuracy in academic writing necessitates precise word choice, particularly in fields with highly specific terminology, such as the clear distinction between phonetics and phonemics in linguistics (Azziz and Hassani, 2024). This precision is vital for conveying

complex ideas effectively. To achieve this, writers must adhere to key guidelines (Azziz and Hassani, 2024, p. 44):

- Construct complete sentences with both a subject and a finite verb to ensure logical flow.
- Vary paragraph and sentence lengths for engagement and rhythmic prose.
- Employ a diverse range of sentence structures while maintaining accurate subject-verb agreement.
- Select the most fitting tense for the subject matter to enhance clarity and purpose.

  By following these principles, academic writers can produce work that is not only informative but also compelling.

1.3.7 Hedging

A fundamental aspect of academic writing resides in the strategic use of tentative language, commonly referred to as hedging. This approach communicates a sense of probability rather than unequivocal certainty (Hyland, 1997). As one develops arguments, it is imperative to meticulously evaluate one’s position on a given topic and the extent of confidence associated with one's assertions. In this intricate environment, where ideas proliferate and scholarly debate flourishes, the capacity to articulate uncertainty can significantly bolster the credibility of one's writing.

By recognizing the complexities inherent in one’s claims, the writer invites the audience to engage with the presented viewpoint in a more contemplative manner. Ultimately, the prudent application of hedging not only demonstrates a well-rounded perspective but also enhances the overall discourse, fostering a more comprehensive examination of the subject matter.

1.3.8 Evidence

Mateus (2017) underscores the imperative that, within the domain of academic writing, every assertion, argument, or recommendation must be firmly substantiated by relevant evidence. This foundational requirement ensures a rigorous adherence to the central theme, preventing any deviation from the primary focus. It is crucial to engage with the extensive body of established knowledge while concurrently incorporating innovative perspectives, including current statistics that reinforce one's viewpoints or hypotheses. Furthermore, scholarly research is expected to reference prior studies within the discipline, thereby creating a cohesive framework of interconnected ideas and evidence that enhances the overall discourse.

By situating one's work within both historical contexts and contemporary findings, scholars not only fortify their arguments but also make a significant contribution to the ongoing dialogue within their respective fields. This approach not only enriches the academic conversation but also promotes a deeper understanding of the subject matter at hand.

1.3.9 Organisation

Its meticulously organized framework distinguishes academic writing, where ideas glide seamlessly from one section to the next. The movement from one concept to another should unfold in a logical and coherent manner, fostering a fluid exchange of thoughts, as noted by Mateus (2017). Each transition serves as a bridge, connecting distinct yet related ideas, thereby enhancing the overall clarity and cohesiveness of the narrative (Maroua, Noudjoud, 2024. P P. 44-45).

1.4. Principals of Academic Writing:

Academic writing encompasses more than the mere organization of ideas; it necessitates adherence to specific conventions that may inadvertently marginalize those who

are not well-versed in the discipline. Hartley (2008) underscores the tendency of such writing to alienate individuals outside the academic sphere. Scholars such as Jordan (1999), Yakhontova (2003), Whitaker (2009), and Wilson (2022) delineate fundamental criteria that characterize academic expression. These guidelines serve as navigational tools in the intricate landscape of scholarly communication. Each scholar presents a unique perspective, thereby enriching our comprehension of academic discourse. Their collective contributions illuminate the essential yet often stringent regulations inherent in the discipline. This highlights the premise that proficient academic writing necessitates not only clarity of thought but also a profound awareness of the intended audience and the context in which the discourse occurs.

It is noted in the blog Principles of Academic writing (p.1), thriving in the realm of academic writing hinges on your capacity to weave in several key concepts seamlessly into your work. These foundational elements serve as the building blocks of compelling prose, enhancing clarity and depth. Mastery of these concepts not only elevates the quality of your writing but also captivates your audience, drawing them into your intellectual journey. In essence, the art of effective academic writing is about skilfully blending these ideas to create a tapestry of thought that resonates with clarity and purpose.

1.4.1 Deep Formality

Deep formality in academic writing, unlike surface formality (e.g., honorifics), prioritizes unequivocal understanding of precise meaning (Heylighen and Dewaele, 1999, p. 3). This is achieved through elevated vocabulary, intricate grammar, precision, and clarity, avoiding personal pronouns and contractions (Principles of Academic Writing, p. 1). This meticulous approach fosters professionalism, objectivity, and unambiguous communication of complex ideas, ultimately enhancing discussion quality through accurate and respectful conveyance of thought.

1.4.2 Objectivity

Harley (2008) posits that objectivity in academic writing necessitates the maintenance of a neutral tone, often referred to as impersonalization or depersonalization. The primary objective of adopting an impersonal stance is to shift the focus of the discourse from the author's perspective to the information presented, thus allowing the data to convey its significance autonomously (Whitaker, 2009). This approach enables the audience to derive their interpretations based on the information provided (Whitaker, 2009; Wilson, 2022). In the view of Jordan (1999) and Yakhontova (2003), the objectification of scholarly texts requires the reduction of personal pronouns (I, you, we), object personal pronouns (me, us), and evaluative clauses (I think, I believe), as these elements introduce a level of informality. Consequently, it is advisable to substitute personal pronouns with introductory pronouns (it, there) accompanied by a clause, or to utilize the impersonal pronoun (one) in conjunction with constructions employing the passive voice.

According to Nga, 2009, the reliance of academic writing on various genres is evident in its inherent objectivity. Academic discourse minimizes the use of personal pronouns related to the writer or the audience, thereby prioritizing the conveyed information over the individuals involved (p.112-117). This necessitates that, to achieve a higher degree of objectivity and to concentrate predominantly on the information presented within an academic context, personal expressions should be eschewed (Nechitoua, 2018, p.46)

Objective writing constitutes a form of discourse that delivers information in a neutral and impartial fashion, eschewing the inclusion of personal opinions, emotions, or beliefs. The principal aim of objective writing is to furnish facts, evidence, and logical reasoning, thereby informing the reader without attempting to persuade or sway their viewpoints (Angélica, 2024). According to the Academic style, Academic writing systematically presents and critically assesses issues, ultimately arriving at an objective

stance. This stance is grounded in empirical research and logical reasoning, rather than personal emotions or opinions. The use of personal pronouns, particularly 'I', 'you', and 'we', is predominantly eschewed, as they are frequently linked to subjective perspectives shaped by individual preferences or biases.

1.4.3 Cautious Language

An essential component of scholarly writing is the principle of cautious expression, commonly known as hedging. This concept refers to the technique utilized by authors or speakers to moderate the directness of their claims (Nurmukanedov and Kim, 2009). Cautious expression is imperative across diverse forms of academic discourse, as it enables writers to convey their positions and arguments regarding specific subjects. However, the evidence underpinning these claims should remain inconclusive, frequently employing terms such as probably or possibly (p. 274).

These hedging strategies reduce the writer's level of commitment and avert overly definitive statements, thereby serving to qualify the author's allegiance to a proposition (Hewings, 2001). Furthermore, as highlighted by Bailey (2011), the cautious methodology in academic writing is particularly pertinent when constructing hypotheses or predictions through the use of modal verbs and when providing critiques of the scholarship of others (p.206).

1.4.4 Syntactic Language

Type-checking is a crucial safeguard against errors in computation. Dusko, (2024), for example, during arithmetic operations, the system ensures that inputs are of the correct type, such as `Integer`. In databases, it verifies that the month field for birth dates is categorized as`Month`, which only allows integers from 1 to 12. Without type-checking, incorrect entries like a birth month of 101 could easily go unnoticed. Types provide a vital safety net for programmers, ensuring smooth execution and enhancing reliability by limiting

the data that can be processed. Therefore, type-checking is essential for maintaining the integrity of computations and instilling confidence in code execution.

Language processing hinges on a fascinating principle known as type-checking, specifically focusing on syntactic types. For instance, a dependent type of a must correspond to a certain format, and should I attempt to construct a phrase using only verbs, the language processor promptly identifies this as an error. This is akin to how the type integer confines arithmetic operations solely to whole numbers. Similarly, syntactic types govern the structure of sentences, mandating that predicates are limited to verbs while nouns or additional types undergo further scrutiny (Dusko, 2024).

At its core, syntactic type-checking serves as a vigilant error-detection tool, mirroring the precision found in computational processes. These type constraints not only highlight mistakes but also facilitate their correction. Consider a scenario where you hear a phrase like John log Mary; without the guiding light of type constraints, you would be faced with a daunting array of over 3,000 English words commencing with lo as potential fits. However, with the syntactic framework insisting that the missing term is a transitive verb in the third person singular, your options narrow dramatically to “lobs,” “locks,” and “logs,” perhaps even “loathes,” and, of course, “loves.” This refined focus allows for a clearer understanding and a more precise communication of ideas. (Dusko, 2024)

1.4.5 Precision and Cohesion

Precision functions as a navigational instrument, directing us toward the accuracy and specificity inherent in language. It, for Field (2024) entails the careful selection of words and phrases that convey ideas with both clarity and nuance, avoiding any semblance of ambiguity or indistinctness. In the complex domain of medical academia, precision emerges as an essential requirement. It serves as the fundamental basis for the effective communication of scientific concepts, the detailed exposition of intricate medical

procedures, and the presentation of research findings with utmost accuracy. In the absence of such rigorous attention to language, the subtleties of healthcare may be obscured, potentially resulting in misunderstandings that could have significant ramifications.

The fluid continuity or flow between sentences and paragraphs is fundamental to cohesive writing. It is stated in Principles of Academic writing, this seamless progression not only improves readability but also directs the reader's engagement with the text. When each idea transitions smoothly to the subsequent one, the narrative evolves into an inviting stream, encouraging the audience to engage deeply. Mastering the creation of these connections involves skilfully interlinking concepts, resulting in a cohesive composition that is both compelling and harmonious. By ensuring that each segment enhances the preceding one, authors can cultivate an enriched experience that captivates and sustains attention, thereby transforming simple text into a sophisticated symphony of expression (p.1).

1.4.6 Cohesion and Coherence

Cohesion refers to the deliberate use of linguistic mechanisms to show relationships between text components, with "cohesive markers" being words or phrases that help readers understand authorial intent (Zuniga & Macias, 2006). Halliday and Hasan (1976) identify five main types of cohesive ties: reference, substitution, ellipsis, lexical cohesion, and conjunctions (Mechitoua, 2018, pp. 42-44).

Coherence and cohesion together form the "interconnectedness" and unity within a text (Lismay, 2020). While cohesion involves explicit linguistic features like conjunctions, coherence pertains to relationships formed through thematic development and information organization (Lismay, 2020). Essentially, coherence dictates a text's overall organization, whereas cohesion influences the meaning conveyed by individual clauses (Rabab, 2018, p. 44).

Coherence is fundamental in all writing genres, especially academic writing, as it determines whether a writer's ideas and arguments are clearly conveyed to the reader (Murray, 2012). Jones (2007) describes coherence as ideas that "stick together; they flow smoothly from one sentence to the next in logical order" (p. 128), or as the way "your ideas connect together" (Murray, 2012, p. 17).

Strategies to achieve coherence in academic writing include structuring sentences to convey the intended message effectively, adopting a logical organization (e.g., introduction-thesis-paragraphs-conclusion), using transitional expressions (e.g., "furthermore," "however"), and repeating key terminology to reinforce central concepts (F. Cleary, 2008).

1.5 Importance of Academic Writing:

Academic writing is vital as language is an inventive tool for conveying meaning, allowing writers to communicate information, construct arguments, and engage audiences. A major challenge for many, regardless of native language, is unfamiliarity with its grammatical structures. Fang Zhihui (2024) states that academic writing is crucial for generating, codifying, disseminating, and acquiring knowledge, and achieving proficiency is key for disciplinary learning and academic success, providing "capital, authority, and agency" in various academic and professional domains.

Tomé Manijro Miro (2012) highlights its role in enhancing knowledge, enabling clear articulation of research, fostering academic dialogue, and cultivating critical thinking and analytical skills. Its mastery is indispensable for both academic and professional achievement (Tomé Manijro Miro, 2012, p. 4).

Rabab Keddouri (2024) references Edward Bulwer-Lytton's "The pen is mightier than the sword," emphasizing the power of written expression. Whitaker (2009) notes it builds essential skills like research, analysis, and critical thinking (p. 9). Furthermore,

Hyland (2009) adds that it fosters scholarly communication, especially for L2/FL authors, and enriches fields by disseminating new discoveries.

1.6 Challenges of Academic Writing:

A core challenge in academic writing, especially for second language writers, is students' unfamiliarity with its specific grammatical frameworks (Al Fadda, 2012, p. 125). Educators must guide students to understand their linguistic choices to improve control over their writing (Hyland, 2002, p. 357).Educators often note students' deficiency in essential academic writing skills like paraphrasing and summarizing (Al Fadda, 2012), indicating a lack of grasp on scholarly standards. Lonka (2003, p. 113) attributes this to important "tacit knowledge" going untaught, leading to written work that doesn't meet conventions.

The varying academic writing instruction methodologies (product, process, genre) also pose a challenge, creating uncertainty for educators on assessment (Al Fadda, 2012). A proposed solution is educator consensus on a single approach for evaluation. Another hurdle in foreign language writing is the detrimental transfer of native language writing skills (Al Fadda, 2012; Mechitoua, 2018, p. 74). International students face significant challenges internalizing unfamiliar grammatical conventions. Hendriarto (2021, p. 104) and Bickford (2015) emphasize addressing these foundational grammar issues and enhancing student accountability in revision processes for effective idea articulation.

1.7 Academic Writing in the Age of Technology:

In the "age of technology," academic writing has been transformed by AI tools like Grammarly, Paperpal, Jenni.AI, and QuillBot. These tools enhance efficiency, automate tasks from proofreading to drafting, and refine writing quality by offering feedback on style, tone, and readability (Al-Sayyed et al., 2023; Chowdhury et al., 2023; Jaiswal, 2023; Azli et al., 2023; Elturki, 2023; Perusich & Saenz, 2023). However, this technological shift introduces challenges: over-reliance on AI can reduce personalization, stifle critical thinking

and editing skills (Park, 2021), and potentially erode creativity and originality by homogenizing ideas or perpetuating biases (Park, 2021; UNESCO, 2023).

1.8 The concept of academic integrity

Academic integrity refers to the ethical code that govern scholarly work, emphasizing values such as honesty, trust, fairness, respect and responsibility. It requires individuals to produce original work, properly acknowledge the contributions of others and uphold transparency in research and assessment. Academic integrity is essential for maintaining the credibility of educational institutions, the value of qualifications and the trust within academic communities.

1.9 The intersection of AI in academic integrity

The growing use of artificial intelligence in education presents both opportunities and ethical challenges.

Challenges

- AI tools, especially generative AI like ChatGPT, can facilitate cheating by producing essays or answers that students may submit as their own, risking violations of academic honesty.
- Traditional plagiarism detection struggles to identify AI generated content, complicating efforts to uphold integrity
- There is a concern about students losing critical thinking skills and becoming overly dependent on AI technology

Opportunities

- AI also enhances academic integrity by powering advanced plagiarism detection systems and helping identify dishonest behaviour
- Educators are adapting by shifting toward holistic assessment methods such as projects, presentations and group work that are harder to fake using AI

- Integrating AI ethically into pedagogy, alongside clear policies and education on responsible AI use, can foster a culture of honesty and originality

In summary, AI reshapes academic integrity by both enabling new forms of misconduct and providing innovative tools for detection and prevention.

Conclusion

Academic writing is widely recognized as a crucial skill for students to cultivate. Mastering this form of writing enables learners to articulate their ideas clearly and persuasively, which is beneficial not only for their academic success but also for their professional growth and effective interaction in various contexts. Competence in academic writing involves more than just expressing ideas; it encompasses the ability to structure arguments logically, properly reference sources, and adhere to the standards of scholarly communication. However, in the era of digital tools and AI, it is crucial to uphold academic integrity by fostering ethical awareness and responsible use of technology.

Chapter Two:

Artificial Intelligence

Introduction

In recent decades, the advancement of technology has occurred at an unprecedented rate, yielding significant improvements across multiple facets of human life, ranging from the inception of the internet to the pervasive adoption of smartphones. As a result, technology has fundamentally transformed our methods of communication, professional interaction, and engagement with the environment. A particularly noteworthy development in contemporary technological discourse is the rise of artificial intelligence (AI). This rapid progression has positioned AI as an invaluable asset within the educational sector, especially concerning academic writing. The integration of AI into educational systems has revolutionized traditional pedagogical methodologies, enabling personalized learning experiences and innovative strategies designed to enhance student engagement and academic performance.

While the incorporation of AI in educational practices has demonstrably improved students' writing capabilities, it has concurrently elicited ethical considerations concerning the integrity of academic work. This chapter endeavours to furnish the reader with essential knowledge and definitions related to artificial intelligence, outlining its various forms and components, as well as its application within educational contexts and the ethical challenges it presents in the domain of academic writing. The principal objective of this dissertation is to critically analyse the issues and concerns regarding the integrity of academic work that arise from students' employment of AI tools.

2.1 Definition of Artificial Intelligence

Artificial intelligence (AI) broadly refers to machines performing tasks characteristic of human intelligence (McCarthy, as cited by Zicari, 2005, p. 4; Heally, 2020, as cited in Kaddour, 2024, p. 16). This field of computer science focuses on imitating intelligent behaviour, effectively blurring lines between human cognition and technology (Merriam-Webster Dictionary, cited in Keddouri, 2024, p. 16).

AI systems engage in "humanlike processes such as learning, adapting, synthesizing, self-correction, and complex data processing" (Popenici et al., 2017, cited in Othmane, p. 555). This involves various methods like machine learning and natural language processing, enabling computers to execute functions traditionally requiring human thought. In education, AI enhances assessments, facilitates adaptive learning, and streamlines administration, freeing educators for personalized instruction (Popenici et al., 2017, cited in Othmane, p. 555).

The development of AI encompasses sophisticated computer systems, algorithms, and robots designed to mimic human reasoning, learning, decision-making, problem-solving, and sensory perception (Larioui & Himran, 2023, as cited in Kaddour, 2024, p. 16). Beyond simply creating human-like intelligence, AI aims to deepen our understanding of human cognition itself (Russell & Norvig, 2010).

Chassignol and colleagues view AI as both a **vibrant field of study** within computer science—tackling cognitive challenges like learning and pattern recognition—and a foundational theory (Azziz and Hassani, 2024, p. 19). Ultimately, AI is a "digital attempt to achieve human level intelligence" (Kaur& Gill, 2020, as cited in Azziz and Hassani, 2024, p. 20), bridging human ingenuity with technological advancement.

2.2 History of Artificial Intelligence

2.2.1 Early Conceptual Foundation (Pre-1950s)

The foundational concepts of artificial intelligence began to take shape prior to the 1950s, with notable contributions from Charles Babbage around the year 1837. Babbage developed two pioneering devices: the difference engine and the analytical engine. According to Blagoj Delipetrev (2015)The difference engine functioned based on the principle of finite differences, a systematic approach to unveiling concealed patterns within numerical sequences by examining the variations between consecutive terms. For example, in the numerical series 1, 4, 9, 16, this method elucidates differences of 3, 5, and 7, wherein the differences themselves exhibit a consistent increment of 2. This illustrates a formidable technique for discerning numerical patterns (Keddouri, 2024, p.17).

Conversely, Babbage's analytical engine represented a substantial conceptual advancement toward a versatile computational apparatus, bearing resemblance to contemporary computers, albeit it was never fully operationalized. This visionary design, according to Kaddouri (2024), encompassed four fundamental components: the mill, which acted as the calculating unit analogous to a modern central processing unit (CPU); the store, which functioned as memory; in addition to a reader and a printer for input and output operations. Each of these components was intricately designed to work in unison, thereby establishing the theoretical groundwork for sophisticated computation (p.17).

In a further significant progression of the field, Alan Turing published his seminal paper in 1950 entitled “Computing Machinery and Intelligence,” which rigorously explored the proposition: Can machines think? Turing introduced a ground-breaking idea known as the imitation game, later referred to as the Turing test. This concept posited that if a machine could participate in a dialogue so seamlessly that it was indistinguishable from a human interlocutor, it could be deemed intelligent. This evaluation constituted the inaugural formal

endeavour to quantify machine intelligence, thereby paving the way for future investigations into artificial cognition (2024, p.7).

2.2.2 The Birth of AI (1950-Mid-1960s)

According to Blagoj Delipetrev (2015),the inception of the field of artificial intelligence (AI) can be traced to the 1956 Dartmouth conference, where the term was first articulated by John McCarthy. During this seminal event, McCarthy outlined the ambitious objective of facilitating machines to emulate human learning and intelligence. This foundational vision garnered the support of influential figures such as Russell and Norvig, thereby establishing a robust framework for subsequent advancements in AI.

The conference attracted notable attendees, including Ray Solomon off, Oliver Selfridge, Herbert A. Simon, and Allen Newell, and it generated considerable enthusiasm as computers began to replicate human reasoning in problem-solving tasks (p.7). This initial phase of AI research was characterized by a palpable optimism and notable accomplishments across various domains, including algebraic problem-solving, language translation, and the proving of geometric theorems.

A significant milestone during this era was the introduction of the General Problem Solver (GPS) by Newell and Simon in 1957. According to GPS represented an early endeavour to mirror human cognitive processes, particularly in the realms of thought and problem-solving strategies. It employed a heuristic search algorithm to systematically evaluate and prioritize potential actions, thereby identifying the most advantageous pathways to solutions (Keddouri, 2024, p.17).Additionally, the development of DENDRAL in 1965 at Stanford University by Ed Feigenbaum, Bruce Buchanan, and Joshua Lederberg marked another pivotal advancement, assisting chemists in the task of elucidating organic molecular structures (Delipetrev, 2015, p.7).

Concurrently, between 1964 and 1966, Joseph Weizenbaum created ELIZA, an advanced natural language processing system designed to simulate human conversational patterns through sophisticated pattern-matching techniques. While GPS is recognized for its approach to emulate human thought processes, ELIZA distinguished itself as the inaugural chatbot, successfully passing the Turing test and establishing a benchmark for future interactions between humans and computers (Kadouri, 2024, p. 17).

In summary, the origins of artificial intelligence are deeply rooted in the Dartmouth conference of 1956, where McCarthy's vision catalysed a new discipline focused on machine-based simulation of human cognitive functions. This formative period was marked by significant progress in various areas of research and development, setting the stage for the ongoing evolution of AI technologies.

2.2.3 Renaissance and Modern Era (1980.s-present)

Kadouri (2024) states that fast forward eight years, from 1980 to 1988, a transformative era unfolded as artificial intelligence evolved into a thriving industry, experiencing an astonishing leap from mere millions to billions in revenue. This surge in economic value was paralleled by the birth of numerous companies focused on the creation of specialized expert systems, robotics, software, and hardware, all propelling the rapid advancement of AI. Among these innovations was R1, the pioneering commercial expert system that revolutionized the configuration of orders for new computer systems, displaying the remarkable potential of AI in practical applications (p.17).

As the field of AI witnessed a resurgence fueled by neural networks and expert systems, it entered a renaissance phase characterized by renewed interest and substantial financial backing. Today, the landscape of AI research emphasizes building upon established theories rather than introducing entirely new concepts. The focus has shifted toward

substantiating claims with robust theorems and solid experimental evidence, ensuring practical relevance beyond mere theoretical musings (Kadouri , 2024, p.17).

In terms of methodology, artificial intelligence now adheres closely to the scientific method, requiring that hypotheses undergo rigorous empirical testing. The results are statistically analyzed to ascertain their significance, and the advent of shared repositories—housing test data and code—has enabled the replication of experiments, fostering a collaborative spirit in the pursuit of knowledge. Through these developments, the journey of AI continues to unfold, shaping the future of technology and its integration into various aspects of life (p.17).

2.3. AI subfields

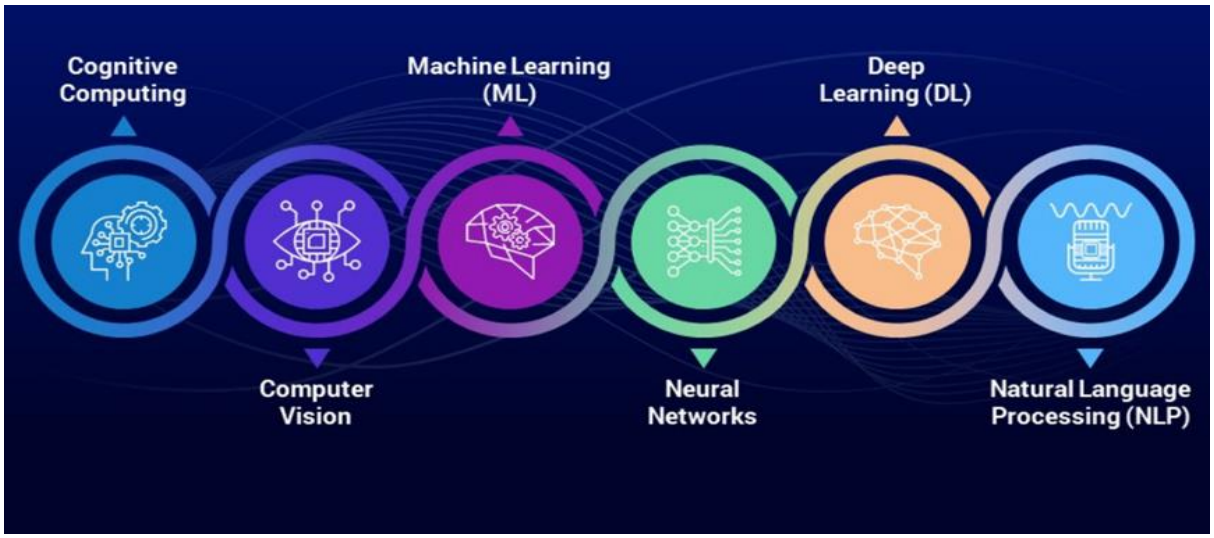
Artificial intelligence has many fields, as Prof Amita says in her article.

2.3.1 Machine Learning(Gaining Knowledge Through Experience)

Machine learning, often abbreviated as ML, represents a fascinating domain of artificial intelligence that empowers computers to autonomously glean insights and evolve from their experiences, all without the necessity of explicit coding. The primary ambition of machine learning is to craft algorithms capable of dissecting data and forecasting outcomes. This innovative technology finds its application across various sectors, notably in healthcare, pharmaceuticals, and life sciences, where it enhances the detection of infections, refines the interpretation of medical images, and accelerates drug development. Beyond these critical advancements, it also plays a role in predicting the mjoy on Netflix (2024, p.203).

Figure 1.1:

Subfields of AI



2.3.2 Deep Learning

The domain commonly designated as the sphere of self-learning machines leverages the capabilities of artificial neural networks, which extract knowledge from extensive datasets. As an intriguing subset of machine learning, this technology functions through multiple layers of these networks, intricately integrating a multitude of inputs to produce a singular, coherent output. These machines engage in a process of learning, motivated by a system of rewards and penalties based on their actions, necessitating ongoing processing and reinforcement to develop and enhance their capabilities. Cognitive Computing emerges as a significant frontier within the broader context of artificial intelligence (Amita, 2024, p.203).

Its objective is to facilitate a more effective interaction between humans and machines, endeavouring to replicate and refine the subtleties of human cognition within a computational framework. This approach explores the complexities of natural language and the contextual relevance of visual stimuli, with the aspiration to equip machines with a semblance of human-like reasoning and understanding. In conjunction, cognitive computing and artificial intelligence strive to empower machines to mimic human behaviours and interpret information with exceptional proficiency (p.203).

2.3.3 Computer Vision

Conversely, computer vision functions as an invaluable instrument for interpreting visual information, which includes a wide array of formats such as graphs, tables, and images contained within PDF documents, among others. By employing advanced deep learning, for Amita (2024), methodologies and intricate pattern recognition techniques, this contemporary iteration of artificial intelligence aspires to comprehend, analyse, and classify extensive visual data. The influence of computer vision is already effecting significant transformations in essential domains, including research and development, as well as healthcare. For example, it is being applied to analyse X-ray images of patients, thereby facilitating earlier diagnoses and fostering ground-breaking improvements in medical treatment (p.203).

2.4 AI Types

Prof Amita (2024) has classifies Ai into Three types, based on functionality, and based on capabilities

2.4.1 Type 1: Based on Capabilities

Professor Amita (2024) further articulated that artificial intelligence can be categorized into two distinct classifications. The first classification is predicated upon capabilities and functionality, while the second classification is exclusively focused on functionality. The subsequent observations will elucidate the concepts articulated by (Amita, 2024, p.204).

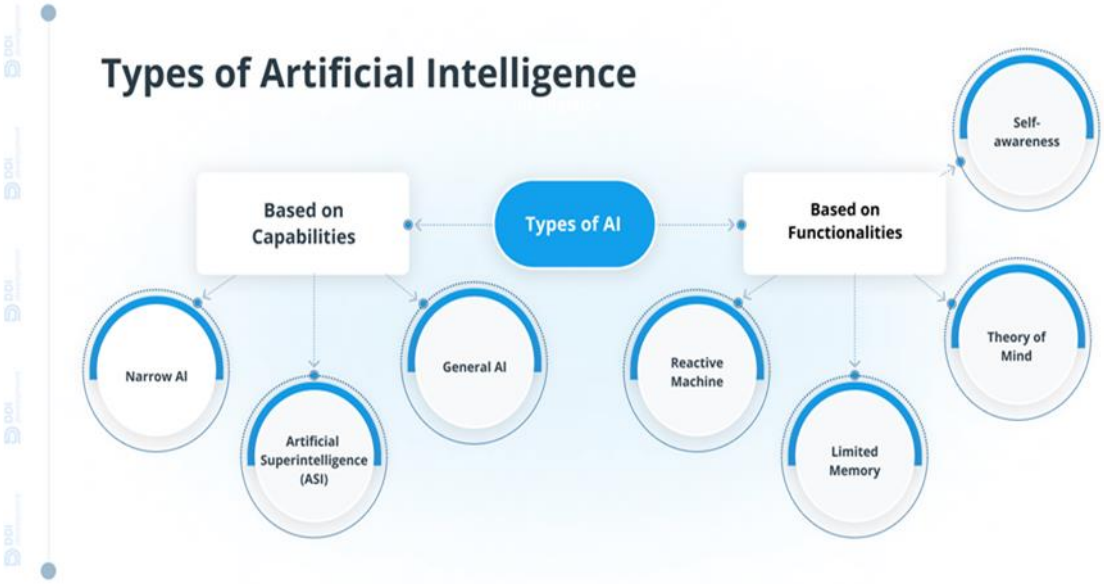
- **Narrow AI:** is also known as weak AI, is characterized as a form of artificial intelligence meticulously designed to execute specific tasks with a high degree of proficiency. This variant of AI is the most prevalent and widely utilized in contemporary applications. Due to its training tailored to particular functions, narrow AI lacks the ability to operate beyond its defined parameters, thereby limiting its operational scope. Notable examples of narrow AI include chess-playing algorithms,

recommendation systems utilized in e-commerce platforms, autonomous vehicles, speech recognition technologies, and image analysis applications (Amita, 2024, p.204).

- **General AI:** also embodies a form of intelligence with the potential to perform any intellectual task at a level comparable to that of a human being. The primary aim of General AI is to develop systems capable of learning and functioning independently, akin to human cognitive processes. As of the present, no systems have been successfully established that can be categorized as General AI, and researchers globally are committed to advancing the development of robotic systems that can undertake tasks associated with General AI. Given the nascent stage of these systems, their creation is anticipated to demand considerable time and resources (p.204).
- **Super AI:** signifies a level of intelligence that enables machines to exceed human capabilities, executing tasks with greater efficacy than humans do while exhibiting advanced cognitive functions do. This concept represents the zenith of artificial intelligence advancement. Distinctive attributes of Super AI include the ability to understand complex information, reason logically, solve intricate problems, make informed decisions, engage in creative thinking, learn autonomously, and communicate effectively. The pursuit of developing such systems remains a formidable challenge, necessitating innovative approaches and sustained commitment from the research community (p. 204).

Figure 1.2:

Types of AI



2.4.2 AI Type 2: Based on Functionality

Types based on functionality are many.

- ✓ **Reactive machines:** represent the most fundamental form of artificial intelligence. These systems lack the capacity to retain memories or prior experiences that could inform future decisions. Rather, they analyse present circumstances and respond in the most efficacious manner possible. A notable illustration of a reactive machine is IBM's Deep Blue, alongside Google's AlphaGo. In contrast to reactive machines (2024 p.204),
- ✓ **limited memory:** artificial intelligence possesses the capability to retain information, thereby enabling it to leverage historical data for enhanced decision-making. This category encompasses a variety of applications that are prevalent in daily life. For example, numerous autonomous vehicles utilize limited memory technology, storing information such as GPS coordinates, the velocities of surrounding vehicles, and various pertinent environmental factors to navigate

effectively. The subsequent categories of artificial intelligence, specifically the theory of mind and self-awareness, are primarily conceptual and remain subjects of ongoing research (p.204).

- ✓ **The theory of mind AI:** which is currently under active development by researchers, aspires to comprehend the needs, responses, beliefs, and mental states of the individuals with whom it interacts (p.204).
- ✓ **Self-awareness:** represents the pinnacle of artificial intelligence evolution, existing presently only as a theoretical construct. A self-aware AI would exhibit cognitive capabilities akin to those of humans and would possess self-awareness. Attaining this advanced level of AI is regarded as the ultimate objective of research; however, it is anticipated that such an achievement may be many years or even centuries away. This form of AI would not only recognize and respond to human emotions but would also possess its own feelings, desires, beliefs, and potentially goals (p.204).
- ✓ **Digital assistants:**in contemporary business practices, are increasingly employed to facilitate interactions with customers, thereby diminishing the reliance on human personnel. Many websites now incorporate digital co-workers to assist users in locating the products they desire. Certain chatbots have been developed to such a degree of sophistication that distinguishing between a machine and a human interlocutor becomes a challenging endeavour (p.204).

2.5 AI tools

According to Gururaj and Dezouza (2024), AI assisted tools are rapidly transforming the research landscape. Here is a table that summarizes the most common AI tools used by students.

Table 1.1:

AI Tools

Tool	Description	source
Grammarly	This tool checks your writing for grammar, punctuation, and how clear it is. It also gives advice on making your sentences and the flow better.	Gururaj. P and Dezouza (2024)
Paperpal	Specifically for academic writing, this tool looks at your writing style, how you sound, and if your citations are correct. It works easily with MS Word.	Gururaj. P and Dezouza (2024)
Jenni.AI	This can help you come up with ideas, organize your research paper, and even write parts of it. It also suggests citations and checks for plagiarism.	
QuillBot	If you want to say something in a different way without changing the meaning and avoid accidental plagiarism, this tool can help.	Gururaj. P and Dezouza (2024)

2.6 AI in Education Context

Education is also one the aspects that AI has revolutionized. In fact, higher education students are no longer depending on traditional instructing as the first source, but they are using AI vastly. In fact, AI has changed drastically the teaching-learning process to the best.

2.6.1 In Education

According to Ali Atiq et al., Artificial intelligence (AI) in education has significant implications for academic integrity. Ensuring academic honesty is crucial, as highlighted by

various studies (Perkins and Roe, 2023; Surahman and Wang, 2022; Susilawati et al., 2023). AI tools like Turnitin enhance plagiarism detection, promoting originality in students' work (Chaudhry et al., 2023; Owan et al., 2023; Skavronskaya et al., 2023).

However, there is increasing concern about potential misuse of AI, such as essay generators that can produce content that evades traditional detection methods (Narayanan and Kapoor, 2024; Rudolph et al., 2023). In response, educators are shifting from conventional assessment methods to more holistic approaches, including project-based learning, presentations, and group work. These strategies foster critical thinking and are harder to manipulate with AI tools (Alier et al., 2024; Kenwright, 2023; Williamson and Prybutok, 2024).

2.6.2 In Learning

In the publication titled Artificial Intelligence and the Future of Teaching and Learning: Insights and Recommendations, authored by Miguel Cardona (2024), the transformative potential of artificial intelligence (AI) in enhancing educational experiences is extensively examined. The document posits that AI facilitates personalized learning by delivering tailored content and educational pathways that cater to the distinct needs and learning styles of individual students. Furthermore, the report emphasizes the capacity of AI to create adaptive learning environments that respond dynamically to student performance metrics, thereby offering targeted support and appropriate challenges, such as individualized tutoring systems. This adaptability is crucial in fostering competency-based learning, which allows students to advance according to their demonstrated mastery of subject matter rather than merely the time spent in a classroom setting.

In addition, AI tools are instrumental in promoting effective learning by providing real-time feedback, which aids students in recognizing their errors and making timely improvements (p. 7-10, 14-16). The report accentuates the potential of AI to enhance accessibility and

equity in education for a diverse array of learners, including those with disabilities or language obstacles. Through the analysis of extensive datasets, AI can discern learning patterns and derive insights that may elude human educators, thus optimizing the overall educational process.

2.6.3 In Teaching

In the realm of education, Dr. Miguel Cardona (2024) posits that artificial intelligence (AI) emerges as a formidable instrument capable of enhancing pedagogical efficacy and liberating valuable time for more significant instructional endeavours. AI facilitates the customization of educational experiences for students by furnishing data-driven insights regarding their performance and specific requirements. Furthermore, it has the capacity to automate routine administrative responsibilities, including the grading of objective assessments, scheduling, and the management of classroom logistics.

This automation empowers educators to dedicate greater attention to direct student engagement and innovative teaching methodologies. Additionally, the report underscores the transformative potential of AI in the realm of professional development for educators (p.7-8, 14-15). It offers tailored learning pathways and resources designed to assist teachers in the effective integration of AI into their instructional practices, thereby fostering the enhancement of their professional skills (p.16). Notably, AI also plays a critical role in the early identification of at-risk students, enabling educators to implement targeted interventions and support strategies with greater precision.

2.6.4 Formative Assessment

Artificial Intelligence is poised to transform the landscape of formative assessment by delivering dynamic and continuous feedback to both educators and learners. AI-driven tools possess the capability to analyse student work in real time, thereby offering immediate and actionable insights that not only guide the learning process but also empower students

to engage in self-correction (2024, p.7, 10) . This mechanism for immediate feedback transcends traditional grading paradigms, placing emphasis on the learning experience itself.

Moreover, artificial intelligence can facilitate the automated evaluation of a diverse array of learning artifacts, ranging from essays to the intricate steps involved in problem-solving. Such assessments provide detailed insights into student comprehension as well as prevalent misconceptions (p. 14-15). The report underscores the potential of AI in formative assessment to swiftly identify learning gaps, enabling educators to adapt their instructional methodologies effectively and deliver timely interventions. This adaptability ultimately fosters a more responsive and efficacious learning cycle, enhancing educational outcomes.

2.6.5 Research and Development (R&D)

The report both implicitly and explicitly advocates for the continuation of research and development in the realm of artificial intelligence within the educational sector. It underscores the necessity of employing evidence-based methodologies for the integration of AI, emphasizing the importance of rigorous investigation to ascertain what strategies are effective, for which demographics, and in which specific contexts. Such an approach is vital to ensure that AI tools are developed in a manner that is equitable, devoid of bias, and demonstrably effective. It is imperative that these AI systems undergo thorough testing and refinement to mitigate any potential unintended consequences, thereby guaranteeing that they serve diverse populations fairly (p18-20).

Additionally, the document itself represents a culmination of ongoing research and development efforts, offering valuable insights and recommendations for prospective initiatives. It posits that sustained research is essential for the continual refinement of AI models, the assessment of their influence on educational outcomes, and the establishment of best practices for their ethical and responsible application. The necessity of research and development extends further, as it is crucial for cultivating the requisite infrastructure and

capacity within educational institutions to fully leverage the potential of AI. This includes promoting AI literacy among both educators and students (p.16).

Moreover, the report highlights AI's significant role in expediting scientific discovery and fostering innovation that transcends the boundaries of the education sector. Such advancements underscore the transformative potential of AI, not only in learning environments but also in broader contexts, suggesting a comprehensive and strategic approach to its integration across various fields.

2.7 The Integration of AI in Higher Education

Dr. Miguel Cardona states that governments are actively cultivating expertise in artificial intelligence (AI) through targeted educational initiatives designed to address existing skill deficiencies. Nations are striving to enhance the appeal of AI professions. For instance, France has instituted a strategic framework aimed at advancing AI research and development. This framework encompasses several pivotal components, including the establishment of research laboratories dedicated to investigating the implications of AI on workplace environments, the provision of incentives to attract talent to AI research, and the development of diverse AI programs across various educational tiers. President Emmanuel Macron has committed €1.5 billion, administered by the Institute National de Recherche en Informatique et an Automatique, to promote collaboration between academia and industry while establishing a comprehensive network for AI studies(p.22).

In a parallel effort, the Education Sector of UNESCO highlights South Korea's master plan for the 'Fourth Industrial Revolution,' which prioritizes education and aims to produce 5,000 AI graduates annually from 2020 onwards, ultimately resulting in an increase of 50,000 specialists by 2030. The South Korean government intends to support elite graduate schools that have transitioned into research centers for a decade, allocating approximately $4.3 million for this initiative. Additionally, South Korea plans to invest $2

billion to create six new AI graduate institutions and to offer 4,500 scholarships for students pursuing AI studies (p.22).

China's Next Generation Artificial Intelligence Plan, initiated in 2017, aspires to establish the country as a global hub for AI innovation by 2030, with education playing a fundamental role. The plan includes objectives to cultivate AI talent through the establishment of specialized academic majors, an increase in graduate program enrollments, and the integration of AI within diverse academic disciplines. An International AI Training Programme commenced at Peking University in 2018, aiming to train 500 educators and 5,000 students from leading universities over a five-year period. Furthermore, the Ministry of Education is promoting vocational training by creating public training hubs and centers in partnership with robotics firms, dedicating significant financial resources to support this initiative (A.Cardona, 2024, p.23)

Germany and Singapore have adopted independent training account schemes to enhance workforce qualifications. In Germany, eligible individuals, including unemployed and select employed workers, may receive education vouchers from employment agencies or job centres to pursue relevant training at accredited institutions. Similarly, Singapore's Skills Future initiative, launched in 2016, provides citizens aged 25 and older with SGD 500 in credits for courses offered by government-approved training providers, with data analytics being one of the available training streams (p.23).

Moreover, UNESCO is developing initiatives that utilize AI to support Sustainable Development Goal 4, particularly in the realm of Technical and Vocational Education and Training (TVET). In collaboration with Ericsson, UNESCO's ICT in Education Unit is implementing the 'Artificial Intelligence for Youth' initiative, which aims to enhance AI skill development among young individuals. This project seeks to empower master trainers and

create a curated repository of AI training courses, while also establishing AI hub centres and organizing hackathons to broaden training opportunities for youth on a larger scale.

As noted by Nora Achili and Nadia Zerrouki (2024), the integration of artificial intelligence across various sectors has generated significant global interest, and Algeria is undoubtedly part of this dynamic landscape. Dr. Miguel A. Cardonapoints out that Recent studies have investigated the transformative potential of AI within Algerian higher education, English as a Foreign Language (EFL) learning, customs management, scientific research, digital marketing, and translation(p.555).

In the context of higher education, Belgaid and Larbi (2022) uncovered numerous socio-economic barriers that impede the adoption of AI in scientific research at Algerian universities. Their research indicates that despite the myriad advantages that AI could provide, many institutions lack the requisite technological infrastructure necessary for its full implementation. Similarly, Aliouche and Mezghich (2024)assessed the needs of students and the prospective benefits of AI in academic settings, highlighting the scarcity of research focused on AI applications within Algerian EFL contexts (p.555).

Utilizing a needs analysis questionnaire directed at 41 third-year students from the Department of English at Barika University Center, their study revealed that AI possesses the capacity to enhance educational outcomes through increased practical opportunities, improved linguistic skills, and personalized teaching methodologies, among other beneficial learning experiences. However, the impact of AI extends well beyond academic confines. For instance, Rouzlani et al. demonstrated the efficacy of supervised machine learning algorithms in managing customs risks at Algerian customs, thereby improving decision-making processes and expediting shipping operations (2024,p.555).

Additionally, a study by M. Zerouati and W. Zerouati (2024) explored the application of ChatGPT for scientific research, revealing that a sample of 61 respondents acknowledged

the tool's capacity to stimulate creativity by generating innovative ideas. Nevertheless, the study cautioned that it may also lead to derivative works, potentially inhibiting originality and curtailing innovative thinking. In the business sector, Hocine illustrated the impact of AI on digital marketing, showcasing its role in enhancing productivity for companies involved in product promotion and sales. Concurrently, Benbada and Benaouda contributed to the discourse on machine translation by comparing human translations with those produced by AI tools such as Google Translate and Reverso Context, concluding that while machine translation has progressed significantly, further refinement is still necessary to achieve completeness 2024, p.555).

Collectively, these studies underscore the promising advantages of AI integration in Algeria while highlighting the limited research that explores both the opportunities and challenges associated with implementing AI in higher education. This investigation aims to address this gap by examining educators' perceptions and the obstacles they face across various Algerian universities.

2.8Advantages of AI in Higher Education

2.8.1 Disadvantage of AI in Higher Education

The incorporation of artificial intelligence (AI) within the realm of higher education presents considerable advantages, particularly in facilitating personalized learning experiences, enhancing student engagement, and optimizing resource management (Meriem Othmane, 2024). The primary aims of this technological integration include the enhancement of academic performance, the expansion of accessibility, the improvement of student retention rates, and the reduction of operational costs (Akinwalere and Yordanov, 2018, p. 556).

AI is adept at providing tailored content and feedback that cater to the specific needs of individual learners (Meriem Othmane, 2024, p. 556), while also employing predictive analytics to identify students who may be experiencing difficulties, thereby enabling targeted interventions (Meriem Othmane, 2024, p. 556). Advanced AI language models, such as GPT and ChatGPT, further augment academic efficiency by assisting in writing, research, and review processes (Sabzalieva and Valentini, 2023, p. 556).

The transformative potential of AI in education is underscored by its ability to enhance personalized learning, refine assessment practices, and decrease the time educators spend on planning, primarily driven by breakthroughs in natural language processing and the development of large language models such as GPT-4 and BARD (Apolzan & Cîmpineanu, pp. 58-59). AI-driven platforms are designed to enrich pedagogical practices and facilitate individualized instruction, thereby optimizing learning experiences to align with student needs and ultimately elevating educational quality and efficiency (Sharma & Sharma, p. 59).

The concept of personalized learning, as articulated by Alexandara Harry, empowers students to progress at their own pace, thereby increasing engagement, improving academic

outcomes, and reducing attrition rates (Harry, p. 59). Bimalendu Pendy (2023) further emphasizes that AI can provide targeted feedback and bespoke learning pathways, which enhance information retention and student success through adaptive learning environments that continuously monitor progress and adjust content accordingly (Pendy, 2023, p. 59).

Moreover, the application of AI in educational contexts facilitates the automation of administrative tasks, such as scheduling and grading, thereby allowing educators to concentrate more on instructional delivery (Apolzan and Jeana, 2024, p. 60). It also bolsters intelligent assessment systems by furnishing timely feedback and enabling precise interventions, while supporting data-driven decision-making to refine teaching methodologies and curricular design (Apolzan and Jeana, 2024, p. 60). The versatility of AI applications encompasses various functionalities, including writing assistance, tutoring, and language translation (Apolzan and Jeana, 2024, p. 60), all of which contribute to a significant transformation in education through personalization and operational efficiency (Apolzan and Jeana, 2024, p. 61).

Furthermore, AI tools are regarded as revolutionary, transcending geographical limitations within educational environments (Sadiku et al., 2022; Azziz and Hassani, 2024, p. 31). They enhance the learning experience by providing flexibility, allowing students to learn at their own pace with immediate feedback, and serving as virtual mentors that track student progress (Azziz and Hassani, 2024, p. 31).

The work of Azziz and Hassani (2024) illustrates that AI significantly elevates student engagement through immersive technologies, such as virtual reality and gamification, thereby creating personalized learning experiences. Additionally, AI fosters educational equity by ensuring equal access to opportunities and promoting diversity in pedagogical perspectives through global connections among learners (Hassani and Azziz, 2024,p. 31). The technology also supports educators by automating administrative

responsibilities and streamlining workloads, while concurrently reshaping curricula to address the distinct needs of individual students (p. 31).

Moreover, accessibility to information is markedly enhanced, with AI facilitating global education through cross-border communication (2024,p. 32). The integration of AI further leads to cost efficiencies by simplifying processes such as exam proctoring and minimizing educational expenses, thereby improving overall operational efficiency. Educators increasingly perceive AI as a mechanism to level the educational playing field, providing a competitive advantage for institutions that embrace its capabilities (p. 32). The discourse presented by Bahamman (2023), further elaborated by Azziz and Hassani (2024), delves into the dual nature of AI tools concerning academic writing, elucidating both their merits and shortcomings.

On the positive side, AI tools markedly enhance efficiency and automation by addressing mundane tasks such as grammar checking, proofreading, and formatting, thereby freeing researchers to dedicate their attention to more critical elements such as literature reviews and citation management (Azziz and Hassani, 2024, p. 35). This results in substantial time savings and improved productivity, facilitating more profound scholarly inquiry (Azziz and Hassani, 2024, p. 35). Additionally, AI tools enhance the quality of writing by providing real-time recommendations on grammar, structure, and readability, thereby empowering authors to refine their drafts into polished works. They also contribute to the maintenance of academic integrity through their plagiarism detection capabilities (Azziz and Hassani, 2024, p. 36).

2.8.2 Disadvantages of AI

The incorporation of artificial intelligence within higher education, albeit promising, presents a multitude of significant challenges that necessitate thorough consideration by universities worldwide.

The reliance on AI tools is not devoid of significant drawbacks. A prominent concern is the often-generic nature of feedback provided by these systems, which may neglect the unique needs of individual writers, ultimately failing to offer the nuanced guidance that human mentors can provide (Azziz and Hassani, 2024, p. 36). Furthermore, excessive dependence on AI may inhibit a writer's development by curtailing the cultivation of critical thinking and independent writing skills, thereby positioning AI as a supplement rather than a replacement for the creative process. Another critical issue pertains to the inherent biases within AI algorithms, which may reflect the prejudices present in their training data, necessitating that writers remain vigilant to avoid inadvertently adopting skewed perspectives or biased recommendations (Azziz and Hassani, 2024, p. 36).

In the context of AI's role in academic writing, challenges also arise concerning the interpretability of AI-generated suggestions, which can be ambiguous and may engender user confusion and mistrust (Azziz and Hassani, 2024, p. 36). Furthermore, significant ethical considerations accompany AI-generated content, particularly regarding issues of originality and proper attribution in academic contexts (Azziz and Hassani, 2024, p. 36). Consequently, it is imperative for writers to navigate the benefits of AI with a critical awareness of its limitations and ethical ramifications, ensuring that their distinct voice remains intact (Azziz and Hassani, 2024, p. 36).

A predominant concern pertains to the presence of bias in AI systems, particularly when such systems are developed using data that is inherently biased. This algorithmic bias undermines fairness and equity, potentially placing certain student populations at a

disadvantage and perpetuating existing inequalities, which may inadvertently lead to discrimination based on attributes such as race or socio-economic status. In addition to bias, the protection of student data emerges as a critical issue. As AI systems gather extensive information regarding student behavior and performance, the potential for unauthorized access or misuse of this data becomes a pressing concern. Thus, there is a compelling argument for the establishment of robust frameworks that ensure accountability and transparency in the deployment of AI technologies within educational settings. Specific challenges within the Algerian context.

As noted by Meriem Othmane, include issues related to academic integrity, plagiarism, and the proliferation of misinformation, all of which underscore the necessity for comprehensive ethical guidelines and regulatory frameworks governing responsible AI utilization. For developing nations such as Algeria, the implementation of AI is further hindered by substantial financial constraints, a lack of expertise, and inadequate infrastructure. Additionally, profound ethical dilemmas regarding privacy, data security, and the potential dehumanization of the educational experience arise. Although machines can automate various tasks, they inherently lack the human attributes of empathy, creativity, and moral judgment that are vital for addressing the complex demands inherent in education (p.555).

2.9 Ethical concerns of the Use of AI in Academic Writing

The excessive reliance on artificial intelligence tools introduces significant challenges for educators in their efforts to assess the authenticity of student work and to evaluate such contributions with integrity. While these tools offer numerous advantages, their inappropriate application engenders a range of ethical concerns, particularly pertaining to issues of plagiarism, the safeguarding of privacy, undue dependence on technology, and the overall integrity of academic practices.

2.9.1 AI Authorship and co-Authorship

The issue of authorship and co-authorship in the context of artificial intelligence has spurred considerable discourse, leading to a discernible consensus: AI entities should not be recognized as authors or co-authors in scholarly research (Opele, et al., 2024, pp. 37-38). This stance is predicated on the understanding that AI systems are incapable of fulfilling critical authorship obligations, including accountability, consent, and the provision of contractual assurances. Consequently, the onus of responsibility for submitted scholarly work lies exclusively with human authors, who are required to uphold the highest ethical standards in publishing. In instances where AI is employed in the research process, it is imperative that such usage is duly acknowledged within the manuscript. This practice serves to uphold the principles of transparency and integrity, which are in alignment with the guidelines established by the Committee on Publication Ethics (Cope, 2024). This framework further emphasizes the paramount accountability of human authors (Opele, et al., 2024, pp. 37-38), ensuring that the integrity of the academic publishing process remains intact.

2.9.2 Plagiarism

Flanagin et al. (2023), Hosseini et al. (2023), and Thorp (2023) emphasize that material produced by artificial intelligence is classified as plagiarized solely in instances where the author fails to acknowledge their dependence on AI-generated content (p. 38). This apprehension arises from the fact that AI systems are developed using pre-existing human concepts and expressions without obtaining the requisite consent or recognition (Stanbrook et al., 2023). Consequently, it becomes essential to uphold transparency regarding the utilization of AI technologies in the creation of written works.

2.9.3 Transparency and Privacy in AI Utilization

There exists a consensus regarding the imperative of transparently disclosing the utilization of artificial intelligence (AI) tools, ensuring that content generated by AI is distinctly identified from the original contributions of the author (Flanagin et al., 2023; Del Giglio & da Costa, 2023; Jenkins & Lin, 2023; King, 2023; Lubowitz, 2023). It is essential that any concepts or text derived from AI systems be appropriately credited through citation, referencing, or by being explicitly detailed within the methodology or acknowledgment sections. This should include the name of the AI tool, its model, version, and the name of the manufacturer (Flanagin et al., 2023; Del Giglio & da Costa, 2023; Jenkins & Lin, 2023; King, 2023; Lubowitz, 2023; p. 38).

Such transparency is vital for mitigating privacy concerns by elucidating the contributions made by human authors in contrast to those generated by AI (p. 38). Academic publishers universally advocate for complete transparency regarding the application of AI, mandating the disclosure of tools employed, the precise differentiation of AI outputs, and the appropriate attribution of such contributions. Notably, journals such as Science underscore the necessity of including specific prompts utilized during the AI's operation (p. 38).

2.9.4 Human insight

There exists a consensus regarding the imperative of transparently disclosing the utilization of artificial intelligence (AI) tools, ensuring that content generated by AI is distinctly identified from the original contributions of the author (Flanagin et al., 2023; Del Giglio& da Costa, 2023; Jenkins & Lin, 2023; King, 2023; Lubowitz, 2023). It is essential that any concepts or text derived from AI systems be appropriately credited through citation, referencing, or by being explicitly detailed within the methodology or acknowledgment sections. This should include the name of the AI tool, its model, version, and the name of

the manufacturer (Flanagin et al., 2023; Del Giglio & da Costa, 2023; Jenkins & Lin, 2023; King, 2023; Lubowitz, 2023; p. 38).

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2.9.5 Regulation and Monitoring

The establishment of rigorous regulatory frameworks and comprehensive monitoring systems is essential to ensure that artificial intelligence (AI) tools are congruent with educational objectives while simultaneously mitigating associated risks. Esteemed organizations, including UNESCO (2023) and Miao et al. (2023), advocate for the creation of extensive frameworks that encompass crucial elements such as data protection, privacy, and the avoidance of undue reliance on AI technologies, drawing attention to established regulations like the European Union's General Data Protection Regulation (GDPR). In this context, robust monitoring mechanisms, exemplified by the EdTech Impact platform in the United States, play a vital role in assessing the effectiveness, accuracy, and potential biases of AI tools (Baidoo-Anu and Ansah, 2023).

Furthermore, Celik (2023) emphasizes the necessity of implementing accountability frameworks for AI providers, citing Canada's proposed Accountability in AI Act as a model that exemplifies transparency and equity (Government of Canada, 2023). Such oversight is crucial to ensure that AI technologies do not undermine essential skills such as critical

thinking, problem-solving, and argumentative reasoning (Funa & Prudente, 2021; Funa et al., 2024; Ramallosa et al., 2022).

Moreover, the continuous refinement of AI policies, as demonstrated by initiatives in Singapore (Galindo et al., 2021), is imperative for maintaining relevance and efficacy. This ongoing development guarantees that the integration of AI enhances educational experiences while addressing both ethical and practical challenges. In summary, comprehensive regulations, sustained oversight, and adherence to international best practices are vital for optimizing the potential of AI and ensuring its responsible and equitable application within the educational sector.

2.9.6 Over-Dependence on AI

An increasing apprehension among educators pertains to the proclivity of certain students to excessively depend onAI-generated corrections, which may inhibit their capacity for independent editing (Yang & Dai, 2023). This reliance presents a dual risk, undermining not only the development of their writing skills but also their self-assurance in producing refined compositions.

2.9.7 Academic Integrity

According to Cilik (2023) and Chan (2023), a significant ethical consideration surrounding the implementation of artificial intelligence in educational settings pertains to the potential facilitation of academic dishonesty. As AI-driven tools become increasingly accessible, the propensity for students to utilize such resources for purposes of cheating or plagiarism rises, thereby jeopardizing the integrity of the educational process. The emergence of generative AI further complicates the landscape of academic integrity, presenting challenges in accurately assessing students' authentic capabilities, particularly when AI can augment language proficiency.

Scholars such as Crawford et al. (2024) contend that the effortless production of polished text by AI may distort the true representation of students' comprehension and skills, potentially engendering only superficial mastery of content. This situation necessitates a comprehensive reassessment by educators regarding the definitions of academic honesty and the support mechanisms that underpin it. Research conducted by Nguyen and Goto (2024) indicates that students frequently conceal instances of AI-related academic dishonesty, revealing that the incidence of cheating is nearly threefold compared to figures derived from indirect reporting methods.

To effectively and responsibly utilize these technologies, teachers need comprehensive guidelines and specialized training. This training should focus on understanding AI algorithms and data insights to reduce the risks of misuse (Kim et al., 2023). Moreover, educators must learn to incorporate AI in ways that enhance their teaching rather than replace the vital human aspects of education, which is essential for creating a rich learning environment (Miao et al., 2021).

This underscores the imperative for innovative strategies that effectively integrate AI while preserving academic integrity. To mitigate misuse and leverage AI for pedagogical enhancement without compromising essential human elements, educators require thorough guidelines and specialized training to develop an understanding of AI algorithms and the insights they provide. Establishing clear definitions of academic dishonesty within an AI-integrated educational framework, along with the implementation of unambiguous criteria, vigilant monitoring of misuse, and strategies to prevent excessive dependence on AI, is essential. Furthermore, policies mandating the disclosure of AI tool usage are crucial for fostering transparency and accountability within academic environments.

2.9.8 The Erosion of Creativity and Critical Thought

Moreover, the impact of artificial intelligence has the potential to diminish the essence of originality in student writing (García & Kim, 2022). As students increasingly depend on suggestions generated by machines, they may inadvertently forfeit their distinctive voices. This reliance can result in a convergence of ideas that lacks individual character and creativity, ultimately undermining the authenticity of their expression.

2.9.9 The Shadow of Algorithmic Bias.

Furthermore, certain artificial intelligence tools may demonstrate a propensity for particular writing styles, thereby imposing limitations on linguistic diversity and inhibiting personal expression (Johnson & Wang, 2020). Such biases may unintentionally influence the manner in which students convey their thoughts, thereby constraining the depth and richness of their linguistic capabilities. In light of these observations, it becomes imperative to recognize the potential implications of AI-driven technologies on educational outcomes. The tendency of these tools to favour specific stylistic approaches can lead to a homogenization of student communication, which ultimately detracts from the development of a nuanced and varied use of language. As educators and stakeholders in the academic community, it is essential to critically assess the impact of these tools on the evolving landscape of student expression and engagement.

2.9.10 Financial Burden

A notable disadvantage pertains to the considerable financial obligations associated with the development and implementation of artificial intelligence methodologies. This challenge can be particularly overwhelming for public educational institutions, as highlighted by Azziz and Hassani (2024, p. 32). However, it is anticipated that the costs associated with these technologies will diminish as they evolve and mature over time.

2.9.11The Lack of Personal Connection

The absence of personal connection represents a notable disadvantage, as machines are incapable of emulating the social competencies intrinsic to human interactions. Students, particularly those who are newly introduced to the realms of artificial intelligence and machine learning, may encounter considerable difficulties in comprehending these complex concepts (Azziz and Hassani, 2024, p. 33). The transition from human engagement to machine-driven instruction has the potential to engender a sterile educational atmosphere, wherein levels of engagement and satisfaction diminish, thereby leaving students with a profound desire for authentic human interaction (Ayala-Pazmiño, 2023, p. 894).

Moreover, the financial implications associated with the implementation and maintenance of these advanced systems present a substantial obstacle for educational institutions (p. 63). The necessity for significant investment in technology, alongside the ongoing costs associated with training and support, can strain institutional resources. Consequently, it becomes imperative for educational entities to carefully evaluate the trade-offs between technological advancement and the preservation of essential human elements within the learning experience.

2.9.12 AI Literacy

In conclusion, the advancement of artificial intelligence literacy has become an imperative requirement for the contemporary workforce. A comprehensive understanding of the methodologies, applications, and assessments of artificial intelligence is essential. This knowledge is instrumental in equipping graduates with the critical problem-solving capabilities necessary to effectively navigate the intricate challenges presented by the fourth industrial revolution (Azziz and Hassani, 2024, p. 33).

2.10 Policies and Guidelines of the Use of AI in Higher Education

To address the previously mentioned concerns, it is essential for governments and academic institutions to implement precautionary measures and establish comprehensive guidelines and policies regarding the utilization of artificial intelligence tools in academic settings. According to Aron (2025), the formulation of such policies and guidelines is crucial to ensuring the ethical and effective deployment of these technologies.

The creation of these frameworks is vital for adeptly managing the complexities associated with integrating AI technologies within pedagogical environments. This proactive strategy will not only promote the responsible use of AI but also cultivate an atmosphere that supports the enhancement of educational methodologies. Both Appolzan and Jeanah (2024) concur with Aron's perspective, emphasizing that to alleviate these potential risks, educational institutions must prioritize the development of AI systems that are devoid of bias and actively work against the perpetuation of existing disparities. It is imperative to implement measures that restrict the collection of sensitive personal data to avert possible misuse or breaches.

Moreover, there exists an inherent risk in AI algorithms that may inadvertently reinforce societal biases, thereby exacerbating the inequalities that already affect access to educational opportunities. Critics have also expressed concerns regarding the dehumanizing impact of an overreliance on AI within the classroom (p. 62). As noted by Harry (2023, p. 263), the integration of AI into educational settings necessitates a thoughtful approach. Navigating the delicate balance between innovation and ethics is paramount to ensuring that the future of education remains equitable, engaging, and centered on human values (p. 63).

Conclusion

In short, it is undeniable that the infusion of Artificial Intelligence into the realm of education marks a significant evolution, paving the way for more customized and impactful learning journeys. These AI innovations are not just buzzwords; they are instrumental in enhancing students' academic writing capabilities. With the aid of AI-driven tools such as grammar and plagiarism detectors, writing assistants, and feedback mechanisms, learners gain access to immediate responses, personalized improvement recommendations, and a richer grasp of writing principles, all of which elevate their writing proficiency.

Yet, alongside these advancements, we must confront serious concerns surrounding the use of artificial intelligence. Issues such as plagiarism, accuracy, and, most critically, the integrity of academic work merit our attention. It is essential for researchers to highlight these challenges, urging students to approach intelligent tools with a discerning mindset. In doing so, we can ensure that the benefits of AI in education are harnessed responsibly and ethically.

Chapter Three:

Data Analysis and

Interpretation

Introduction

Since the dissertation at hands, aims at finding out to what extent the use of AI Tools by university students can be challenging to academic integrity of the work. This chapter serves as evidence either to confirm or disconfirm the hypothesis has hypothesized before. In doing so, the researcher used a questionnaire to for students and an interview for teachers to obtain their attitudes and different opinions concerning the ethical use of AI in academic writing context and the ways in which this would have an impact or challenge academic integrity. In this chapter, data are gathered and analyzed and either discussed to answer the research questions and to verify the research hypothesis.

3.1. Research Method

Based on the nature of the topic and the aim of checking the challenges of using AI in academic writing and academic integrity, the researcher opted to use the mixed approach. This step was taken because of time limitations that we had before. Thus, the topic at hands handles a topic that needs dissertation a lot.

According to Dornyei (2007), Mixed approach is deemed as a sort of a combination of qualitative and quantitative methods within a single research project (as cited in Malki (2019), p56). Thus, the mixed method is the best method to exhibit peoples' attitudes, views and ideas, all of this accompanied with statistics obtained from the questionnaire. The researcher's choice is based on the suitability of the nature of this tool to the research question and aims.

3.2. Population/ Sample

In order to collect data, the researcher used questionnaire for students. The questionnaire indeed was given to 45 higher education students. The participants are master one students of Sciences of the Language. The participants were randomly selected of total 186 students of Mohamed Keider University of Biskra due to that master one student use AI

tools commonly in their writing tasks and because by master two, they will use it to enhance their dissertation and to check plagiarism as well.

3.3 Data collection tools

A semi-structured questionnaire was preferred by the researcher as a tool for gathering data for the present study. The questionnaire was administrated to master one students of S of the L at M.K.U to gain attitudes towards the effect of AI that has academic integrity in academic writing. A semi structured interview also was used as a second tool to better conform the research question and the hypothesis at hand.

3.3.1.1 Aim of Student's Questionnaire

The purpose behind submitting questionnaire to master students is to know the various attitudes of participants of on the ethical issues that AI usage may have on the academic integrity in academic writing and whether they occur or not.

3.3.1.2 Description of the Students' Questionnaire

The questions were designed to EFL of M.K.U, it was divided into five sections containing 22 questions (open-ended, close-ended questions). The first section contains 2 questions. It aims at collecting general information. About the participants academic level and field of study. The second section goes around students' academic writing difficulties. This section contains 3 questions from 3, to 5. The aim of this section is to investigate the academic challenges that students face in academic writing. The third section contains five questions, from 6 to 10. This section is devoted to the investigation of the familiarity and existence in academic writing. The fourth section contains five questions, from 11 to 15.

This section is devoted to the students' attitudes towards the use of AI tools in academic writing, to put it simply the aim of this section is to investigate for the possible relation between AI and academic writing enhancement. Section five contains 7 question, from 16 to 22. That last section is mainly devoted to the ethical issues that AI propose in

the realm of academic writing and its specially on the academic integrity of the A works in academic writing. Multiple researches highlighted the direct impact of AI use on academic integrity that caused problems to the teachers as well as students. Also, this section tries to look for responsible use of AI in higher education institutions.

3.3.1.3 Validating and Piloting the Student's Questionnaire

After designing the first draft of the students' questionnaire, it was submitted to the supervisor to consider content and possible grammatical and spelling mistakes. The supervisor, of course suggested some modifications on the questions given to add more validity and accuracy to the questionnaire. The modifications, indeed, were taken into consideration while designing the polishing clear final draft. After validating it by the supervisor, it was submitted online to students of M1 of M K B.U. The students, indeed, answered the questionnaire in a hurry since it is in their core interest.

3.3.1.4 Administration of the Students' Questionnaire

After validating the final draft, the questionnaire was submitted via emails. The Facebook was the medium between the researcher and the participants. The researches notify the students find, then submitted it. The online questionnaire was designed using google the services of the survey software. Google form which helps in modifying the structure of the questions. After six days, the intended number answered.

3.3.1.5. Analysis of Students' Questionnaire

After the completion of the answer, the data from the questionnaire were analyzed, interpreted and then used to support the study based on the students' attitudes and views.

Section One: General Information

Q1. Would you specify your academic level, please?

Table 2.1:

Academic Level

Option	Frequency	Percentage
a) Bachelor	2	4.4%
b) Master	39	86.7%
c) PhD	4	8.9%
Total	**45**	**100%**

Data in table 3.1% show that the majority of participants who answered are master students, PhD candidates and bachelors students with differing percentages. Answers of master one came with 86.7%, PhD 8.9% and Bachelors with 4.4%. The percentages are highly significant since both masters and PhD students are always engaged in advanced academic writing tasks.

Q2. Would you specify your field of study, please?

Table 2.2:

Field of Study

Option	Frequency	Percentage
a) Sciences of the language	9	20%
c) Didactics	16	35.55%
d) Linguistics	3	6.7%
e) Literature and civilisation	3	6.7%
f) Other	14	31.11%
Total	**45**	**100%**

The table in hand outlines the participant's field of study. Based on data, there is a range between statistics; however, the highest score is given to Didactics since they are the

targeted population. Results chronologically came as this: Didactics 35.55%, other 31.11%, Didactics and Literature and Civilization 6.7%. The largest proportion of students are from Didactics with 16 participants, followed by other with 14 participants. Finally, Participants of Linguistics, Literature, and Civilization with three participants

Section 2: Students' Academic Writing Difficulties

Q3. What is your current academic writing level?

Table 2.3:

Current Academic Writing Level

Option	Frequency	Percentage
a) Poor - I definitely need some help	1	2.2%
b) Acceptable - but I know I could improve	17	37.8%
c) Good - I could improve with some advanced tips	23	51.1%
d) Excellent - I don't think I could improve much	4	8.9%
Total	**45**	**100%**

The majority 51.1%of students consider their academic writing level as (good) Nevertheless, they think they can improve their levels with extra tips, while 17% of participants 37.8% see their writing level as acceptable but they know for sure, they “could improve.”

Q4. What difficulties do you face in Academic Writing? You may choose more than one answer.

Table 2.4:

Difficulties in Academic Writing

Option	Frequency	Percentage

a) Generating ideas and organize them	6	13.33%
b) Poor Vocabulary	3	6.7%
c) Spelling mistakes	0	0%
d) Integrating sources effectively in my writing	1	2.2%
e) Writing introductions and conclusions	1	2.2%
f) Academic conventions (citations and references)	1	2.2%
g) Plagiarism	1	2.2%
h) More than one difficulty	32	71.12%
Total	**45**	**100%**

Most of the participants referred to more than one difficulty with71%. The statistics indicates the complexity of academic writing and the immediate need from teachers' part. Then comes the challenging task in writing which is generating ideas and organize them properly and comprehensively with 13.33%. Six out the total population highlight this challenge and three said that they and 3%with lack vocabulary.

If others please specify

Some of the participants highlighted the existence of another challenge, which is related to practicing language to overcome the problem vocabulary lack. One of the participants said, "I need more vocabulary to practice the language." At this level, practicing language becomes vital for better understanding for the targeted language.

Q5. Among the following genres of Academic Writing, which is the most difficult one?

Table 2.5:

Difficult Genres of Academic Writing

Option	Frequency	Percentage
a) Essay	8	17.8%
b) Research papers and proposals	2	4.4%

c) Dissertations	12	26.7%
d) All of the	23	51.1%
Total	**45**	**100%**

The majority of 51.1% students find that all academic writing genres difficult including essays, research proposals and papers and dissertations. Dissertation comes next with 26.7%. The high score of 51.1% indicates the general struggle with academic writing in general.

Section 3: Students Familiarity with AI tools?

Q6. How much familiar are you with AI tools for Academic Writing?

Table 2.6:

Familiarity with AI Tools

Option	Frequency	Percentage
a) Not familiar	0	0%
b) SlightlyFamiliar	10	22.2%
c) Moderatelyfamiliar	13	28.9%
d) Veryfamiliar	22	48.9%
Total	**45**	**100%**

The question is related to the familiarity with artificial intelligence was designed to prove the existence of AI at universities. Most of the participants 48.9% said they are familiar with the use of artificial intelligence, while only 28.9% of participants said that they are slightly familiar. The least portion 22.2% goes to those who said they are slightly familiar with AI.

Q7. Have you used any AI assisted tools for Academic Writing?

Table 2.7:

The Recurrence of the Use of AI Assisted Tools

Option	Frequency	Percentage
a) Yes	45	100%
b) No	0	0%

Total	**45**	**100%**

All students of Master one, with no exception, confirmed that they have already used AI for academic writing purposes and it is not surprisingly.

If yes, which AI tools have you used? You may choose more than one answer.

Table 2.8:

The Kind of AI Tools Used

Option	Frequency	Percentage
a) Grammarly	1	2.2%
b) Quill boot	2	4.4%
c) ChatGPT	13	28.89%
d) Turnitin	0	0%
e) Write Sonic	0	0%
f) More than one tool	29	64.45%
Total	**45**	**100%**

Based on the statistics, more than the half of participants 64.45% use more than one AI tool. The use of Chatgpt comes the second with 28.89%. The data show more than it is obvious

If others, please specify

Other participants answer by saying that they use Anara, Deepseek or Deepseekgrok. As data indicates, these participants do not use Chatgbt. Students maybe are afraid that chatgpt is not accurate enough to use it as a source or it is limited than other sources, but it is obvious that students are not relying on one tool but they are exploring their choices each time they come across a new application. Students are, then, uptodate with the new rising AI tools. It is not bad to learn about AI tools, since sooner or later will be officially integrated in the curricular and at universities, but by knowing more about the new AI tools, students are reducing their improvement in writing and augmenting their eager for more.

- Anara
- Deep seek
- Deepseekgrok

Q8. For what purpose (s) do you use AI tool in Academic Writing? You may choose more than one answer.

Table 2.9:

The Purpose of AI Tool Usage

Option	Frequency	Percentage
a) Grammar and spell checking	2	4.4%
b) Paraphrasing	2	4.4%
c) Writing assistance (generating ideas, outline, etc.)	6	13.33%
d) Citation	1	2.2%
e) Plagiarism detection	0	0%
f) More than one purpose	35	77.77%
Total	**45**	**100%**

Asignificant77.77% use AI tools for different purposes, with grammar and writing assistance next. Almost 4.4% of students choose that they use AI tools to assist their writing for generating ideas and outline, ect. The other two purposes of using AI were for grammar and spelling checking and paraphrasing with 4.4% of the whole population. While at the end students refereed are citation, AI tools are rarely used.

Q9. What do you find more useful?

Table 2.10:

Teacher and AI Feedback

Option	Frequency	Percentage
a) Traditional teacher's feedback	4	8.9%
b) AI writing feedback	13	28.9%

c) Both	28	62.2%
Total	**45**	**100%**

Most of participants 62.2% believe that both teachers' feedback and AI feedback are useful. Compared to this, the respondents 28 show that AI Writing feedback is more useful than teachers' feedback.

Students' justification

Students believe that teachers' feedback is more useful than AI feedback for various reasons. These respondents see that teacher's feedback is tailored to an individual need, learning styles and the context of the assignment. Others believe that teachers' feedback is more reliable, since teachers are experienced and can provide a human feedback, rather than a machine that does the tasks based on key words provided by students. In this case AI feedback can be misleading. Others simply said that they" do not rust AI".

Q10. How often do you rely on AI tools to paraphrase or rephrase?

Table 2.11:

Reliance on AI Paraphrasing Tools

Option	Frequency	Percentage
a) Always	17	37.8%
b) Occasionally	18	40%
c) Rarely	9	20%
d) Never	1	2.2%
Total	**45**	**100%**

Around 40% of respondents answered that they occasionally use paraphrasing tools, while 17% said that they use it. About 9 said that they rarely use reformulating tools. Overall, paraphrasing tools represent the alternative of human reformulation

Section Four: Students' Attitudes towards the Use of AI Tools to Write Academically

Q11. Do you think AI tools may replace traditional instructing?

Table 2.12:

AI Tools Replace Traditional Instructing

Option	Frequency	Percentage
a) Yes	24	53.3%
b) No	21	46.7%
/Total	**45**	**100%**

As it is shown in the table, more than 53.3% of participants agree that AI may replace traditional teaching after all. The other 21% believe that traditional teaching cannot be replaced. The answers are varied based on multiple considerations.

Q12. Does the use of AI tools improve the quality of students' academic work?

Table 2.13:

The Improvement of AI Tools to Academic Work

Option	Frequency	Percentage
a) Strongly agree	10	22.2%
b) Agree	23	51.1%
c) Neutral	7	15.6%
d) Disagree	4	8.9%
e) Strongly disagree	1	2.2%
Total	**45**	**100%**

Around 51.1% of participants agree that AI improved writing. The other 22.2% goes to the other who strongly agree that AI enhances the writing skill. About 15.6% did neither agree or disagree. The justifications of students differed from one another.

Students' justifications

a) For 'Strongly agree'

Giving that unlimited improving services that AI assisted tools can offer, students state that these tools are strongly enhancing critical thinking, structure and coherence and the quality of the academic work. In addition, these tools meet students' needs. One of the justifications affirms that with time and recurrent use of AI tools, students will improve their writing skill. Overall, most studentds focus on the idea that AI increases critical thinking.

b) For 'Agree'

Students' justifications

Students agree with each other on that AI is helpful in all cases. It is a time saving, feedback providing. It also helps us in focusing our efforts on strengthening our weaknesses and to give the student better writing version.

b) For 'Neutral'

Some of the participants chose to be neutral because they believe that the use of AI depends on the users use. If the students uses AI properly and ethically, then it AI tools, in this case, will help in improving the style of the students writing. However, if the students shoes to use AI unethically, thus no improvement would be seen One of the students said that "AI is a double edged sword." AI can help students in completing their writing tasks, but its effectiveness is based on its use.

Q13. In which aspect of writing does AI help improve the most? You may choose more than one answer.

Table 2.14:

Aspects of Writing That AI Helps Improving

Option	Frequency	Percentage
a) Grammar and spelling	0	0%
b) Vocabulary	1	2.2%
c) Academic writing style	1	2.2%
d) Sentence structure	5	11.11%
e) All of them	26	57.78%
f) More than one writing aspect	12	26.67%
Total	**45**	**100%**

About 57.78% of the population said that AI helps in improving all aspects, grammar and spelling, vocabulary, academic writing styles and sentence structure. The other 26.67% said that they only use AI to do some tasks. However, students 1 use AI tools to enhance vocabulary and style

Q14. In your opinion, how accurate are AI tools in suggesting grammar or style correction?

Table 2.15:

Accuracy of AI Tools

Option	Frequency	Percentage
a) Very accurate	8	17.8%
b) Accurate	37	82.2%
c) Not accurate at all	0	0%
Total	**45**	**100%**

The statistics show that 82.2% believe that AI tools can only provide “accurate” suggested grammar or style correction, while 17.8% state that AI tools are “very accurate.” The statistics are significant in a way since although its recurrent use of AI by students, they still have doubts about AI tools accuracy.

Students' justifications

a) For 'Very accurate'

Based on students' answers, their justifications of their answer agree on one point, which is that AI tools are programmed to be efficient, perfect and accurate. For students, AI tools provide flawless feedback and they learn from human experience. For other students AI provide contextual feedback of the work being proofread. The checking of grammar and spelling mistakes and the suggestions of alternatives are contextually relevant.

b) For 'Accurate'

The justifications of the students confirm the idea that AI can be used but with caution. Students believe that researchers must not depend heavily on AI tools in the correction of grammar, spelling and structure organization or even in giving suggestions of correction because these tools may come up with false correction. After all, these tools are machine like not human like.

Sometimes, AI tools misunderstand the researchers' demands and instructions or modify the whole content that goes different the researchers' expectation. AI provide accurate information since they rely on many valid sources. Finally, AI tools, according to participants, may provide generic suggestion, thus human oversight is needed in this case.

Q15. What is the biggest challenge have you faced when using AI for writing?

Table 2.16:

Challenges of AI

Option	Frequency	Percentage
a) AI content is not always correct	13	28.9 %
b) I do not know how to use them effectively	8	17.8%
c) I have ethical concerns	24	53.3%
Total	**45**	**100%**

The majority of students 53.3% agree on that the main challenges to the use of AI in academic writing is their fear from the ethical concerns that it arises. The second challenge is with Ai literacy. Around28.9% of participants say that they have a little knowledge with AI use. The least proportion of 17.8% goes with students who say that AI is not that accurate. refuse to use it at all.

Section Five: Ethical Concerns of AI Use in Higher Education

Q16. Do you think that using AI tools for Academic Writing in higher education context is considered unethical or a form of plagiarism?

Table 2.17:

AI and Plagiarism Issues

Option	Frequency	Percentage
a) Yes, definitely	15	33.3 %
b) No, not really	28	62.3%
c) No, not at all	2	4.4%
d) No, not really	0	0%
Total	**45**	**100%**

This question aims to investigate to what extent they are knowledgeable about AI ethical implications and to know the different attitudes about this topic. Almost 33.3 % of the participants consider AI is a form of plagiarism, whereas 62.3% of participants affirm that AI is not plagiarism.

Q17. Have you encountered any ethical concerns regarding the use of AI tools in Academic Writing (eg: unintentional plagiarism, other ship issues, etc)?

Table 2.18:

Ethical Issue of AI in Academic Writing

Option	Frequency	Percentage
a) Yes frequently	14	31.1 %

b) Yes, occasionally	18	40%
c) No, never	11	24.5%
d) Not use	2	4.4%
Total	**45**	**100%**

Around 40% of respondents affirmed that they have frequently encountered ethical concerns while using AI assisted tools in academic writing, while 31.1 % had occasionally encountered with plagiarism. The other 24.5% of participants said that they have never encountered with plagiarism.

Q18. Do you see AI tools playing an increasing role in writing in higher education in the future?

Table 2.19:

The Increasing Role of AI in Writing

Option	Frequency	Percentage
a) Yes, definitely	24	53.4 %
b) Yes, likely	18	40%
c) No, not really	2	4.4%
d) No, not at all	1	2.2%
Total	**45**	**100%**

The majority of participants 53.4 % say that AI will play a big role in higher education, while 40% of the population said that AI likely will have a role in higher education. The other 4.4% of participants do not think that AI will be vital in the future in higher education.

Q19. What are your main concerns regarding the increasing use of AI tools in Academic Writing?

Table 2.20:

Main Concerns of AI Tools in Academic Writing

Option	Frequency	Percentage
a) Ethical Implications	3	6.7 %
b) Problems of integrity	1	2.2%
c) Decreased originality of academic work	7	15.6%
d) Over reliance of AI tools	5	11.1%
e) Reduction in critical thinking	1	2.2%
f) All of them	28	62.2%
Total	**45**	**100%**

More than the half of respondents 62.2% say that the use of AI has many concerns. The primary concern of most of 6.7% participants is the ethical implications, such as academic integrity of AI use, followed by decreased originality 15.6% and overreliance with 11.1%**.**

If others, please specify no answer was provided

Q20. Would you recommend the use of AI tools in higher education?

Table 2.21:

Recommending AI in Higher Education

Option	Frequency	Percentage
a) Yes, recommend	21	46.6 %
b) Yes, somewhat recommend	18	40%
c) No, not really	3	6.7%
d) No, not at all	3	6.7%
Total	**45**	**100%**

Almost the half of the population 46.6 % of students recommend AI in higher education and 40% somewhat recommending AI in Higher education and 6.7% of participants said not at all or not really.

Q21: Promotion of AI by Institutions:

Based on the obtained data, institutions can promote the use of AI in academic writing by taking steps. Institutions can include AI as a module in the curricular, by highlighting the terms, applications and uses. Also, institutions can set precautionary measures in case AI tools are used ethically. Many workshops can be designed to provide training to both teachers and students. Assume responsibility for the use of AI in higher education. Institutions also may include AI literacy in the curricular. Since students are frequently having writing tasks, institutions may allow the use paraphrasing and citing tools as aids for better enhancement of the writing content. These tools can be integrated within the curricular. By doing this, institutions must set clear lines between acceptable and unacceptable use of AI in academic writing.

Q22: Being comfortable with the use of AI to assist my Academic Work:

Most of the participants confirmed that are either comfortable or very comfortable with the use of AI in their academic Work. Only few were uncomfortable with AI use. Students gave multiple reasons why the majority of population are comfortable with AI use because they have trust on the accuracy of their feedback on their works, since they relied on AI a lot.

Second, students know how to use AI properly and ethically, this is why they do not have ethical concerns. Some students feel comfortable while using AI because they know that AI is just an aid that will not replace their original work. Most of the answers conclude that as far as the student knows how to use AI tools in a way that does not indicate ethical implications, then they feel comfortable about it. Other students focused on academic integrity. They said that as far as using AI tools does not endanger academic integrity, they feel free, then.

3.3.1.6 Interpretation of the Students Questionnaire:

As far as the answers are concerns, he differences of personages indicates several indications. The pre-mentioned fields of study involve in extensive academic tasks, research

papers, ect. Students studying these fields are always engaged in tasks that requires linguistic knowledge, critical thinking. Therefore, they are more familiar with the idea of academic integrity.

When students were asked about their level in academic writing, most of the participants said “good”. We can state that there is a desire for enhancement, making AI an appealing resource. Being good is not enough to fulfil all tasks, thus challenges in writing are not overcame yet. Ethically speaking, concerns arise when the use of AI tool undermines intellectual effort rather than genuine improvement. For instance, overreliance of AI may challenge authenticity and critical understanding

The challenges with generating ideas and lack of vocabulary are common challenges since students are EFL, and English is not their native language. Another reason for this obstacle is lack of reading, listening and speaking in L2 language. The issue lays with the fact that the same challenges to students are points of strength of all AI tools. In fact, AI tools were designed to fill these holes and provide finally solutions. AI tools, as Gemini, chatgbt and other can brain storm, suggest ideas, summarize, paraphrase and generate ideas in any structure we like. They are in fact saviors for students. These tools dress issues as academic integrity, accuracy, skill development, plagiarism, authenticity, transparency, fairness and equality, and finally security.

. Based on the nature of the written tasks, students are required to display high levels of accuracy, language critical thinking, analysis and as well as authenticity. Students, indeed, become in front of challenges that hinder them from completing the tasks fast and appropriately. With the complex and hard nature of the tasks, in addition to the lack of vocabulary, students come to a dead end. Therefore, they either find themselves to deliver the poor written research papers or essays, or choose to do it perfectly with the aid of professionals or AI.

AI is found everywhere not only in education sector. Data show that the majority of students are very familiar with AI, this indicates the integration of these tools in academic writing either for improving their writing or to guarantee doing the tasks perfectly, thus guarantee having good marks in the subject matter. As shown in the table, it seems that AI provide students with their academic needs, thus they are satisfied with their usage. It is of course because they struggling with the difficulty and complexities of the writing skills.

It is not surprisingly that all participants 100 use AI tools. This fact indicates the overreliance of students on technology in academic writing. The universal use of AI highlight that AI tools are becoming standard sources for students rather than books, journals of magazines. This shift is frightening in away, since students are shifting to disclose their intelligence, creativity and critical thinking and rely on readymade material. In this case, students will no longer focus on improving their levels but in guarantying their success. To put it simply, relying on AI the most, would kill the desire for reading and authenticity. It is reading that makes students different and unique, not identical. In another hand, teachers will face difficulties in assessing and evaluation the material at hand properly.

Data shows that students mainly use AI writing and research tools, i.e., students prefer using AI tools that generate ideas and help in writing rather than improving grammar. This is why; we find that applications like Grammarly and quill bot are slightly uses.AI tools offer services of all kinds and this meets with the different needs of students. If students use Chatgbp, for instance, why they would like to check grammar by Grammarly or paraphrase by Quillbot. Students generally use these tool based on their primary needs; some use AI tools that generate ideas; others use tools that check grammar, ect, thus, it is based on the required need.

According to the table, no participant uses plagiarism checker, this indicates that whether they do not plagiarize at all or they copy paste information from the AI tools without

thinking that this information is already cited. There is another option that says that students do not pay attention to plagiarism or do not know how to cite, and this would be an issue. If students do not acknowledge the source, then they are committing an ethical crime. This act will challenge the written work and teacher of academic writing can refuse it.

Some of the participants prefer the hybrid approach, thus this will effectively help enhancing the writing skills. If students apply the insightful comments and tips of writing of their teachers and accompany them with AI feedback, this would result in masterpieces. Compared to students who prefer AI feedback, others value hybrid approach of feed since it can provide them with the best results. If institutions balance between teachers' and AI feedbacks, this would enhance the writing experience.

Overall, paraphrasing tools represent the alternative of human reformulation. Students often use paraphrasing AI tools due to lack of time, lack of vocabulary, the length of the document or just simple it facilitated the work of reformulation. High education students rely on AI paraphrasing tools because the provide correct and neat work that must not be checked again by students. It is believed that AI provide machine work rather than human pieces of work that narrate human experiences. Due to some challenges in writing, students use paraphrasing tools.

The twenty-four students base their answers on the fact that the age they are living in is the age AI. No one can deny the overwhelming of AI in all sectors of life, not only education. With the infinity options that AI offers, students are becoming more reliable on since it meets their growing academic needs and requirements. This fact challenges traditional teaching that stays limited than AI due to some human, psychological and physical considerations.

Students use AI tools to improve multiple writing aspects including the previous ones ‹this indicates that the majority of students are struggling with these aspects. The issue lies with the fact that grammar and spelling, vocabulary, academic learning process and sentence structure are the core of academic writing and having challenges with them means that students do not acquire the solid ground to write a proper English piece of writing. Besides, students, in this case, are unqualified.

According to the answers of students, they have some worries and doubts about the use of AI; some students are afraid that AI do not provide them with accurate feedback or information. For other, they are ignorant of how to use them properly, thus they fear to fall into unintentional plagiarism. Others, they openly expressed that AI means ethical implications, for them depending on one self or tradition methods is better than using AI. The majority of students have faced ethical uses with the use of AI tools. This indicates both the recurrent use of AI and the risks that AI display.

Most of students believe that AI is like any educational help. AI are meant to provide guidance and feedback, thus how using those means plagiarism. Other participants said yes, since AI is an endless book storage that uses multiple servants from the internet, thus plagiarizing. These students express caution while using AI tools.

Time changes imposes us to embrace change, and AI age is one of them. It is deduced from the students' answers that AI will play a great role in instructing, monitoring giving feedback and enhancing the writing skills of students. AI can also bring fun and variety to classroom which definitely will enhances motivation, breaks routine and increases critical honking and the academic style. On the other hand, a small personage says the opposite. Thus, the majority of participants call for the integration in Higher Education.

All students share the same concerns that AI will compromise academic integrity, ethics, tribality and activeness as well. This fact, will affect the teaching-learning process and adds

passivity to class and no authenticity among students. Students show blended feelings; some said that they feel easy when using AI, others said no. The fact that these answers are significant since AI is a double-edged tool. Second, students who said they feel okay when using AI, this means either they monitor the conventions of how using AI or just do not care about it. The participants who feel not comfortable are acknowledgeable of the AI risks, or just do not know how to use them, thus they do not use it. Here we can say that students have different emotional stands towards using AI.

When it comes to ethical concerns, student highlighted the necessity of serious clear guidelines. For them, institutions assume responsibility and that unethical use of AI must be punished.

3.3.2.1 Aim of Teachers' Interview :

The purpose behind submitting an online interview to teachers is to know their different attitude, as academic writing teachers, their attitudes on their students' use of AI in academic integrity in academic writing and to ensure the ethical implications of AI in academic writing.

3.3.2.2. Description of the Teachers' Interview:

The interview was designed to EFL teachers of academic writing of Mohamed Keider University. It contains 12 questions, mainly open-ended questions with 2 or 3 close ended-question, the questions were designed to fit the research questions, help in conforming the hypothesis and answer the research question.

Q1. How can you describe your current role and your experience with teaching or assessing academic writing? You can answer this question, in case you do not teach academic writing module

Looking at the answers given by teachers, most teachers focus on the idea that their core role as academic writing teachers is to provide their students with guidance and support rather

than just assessing students writing levels. For instance, teacher 1, defines himself as an instructor and feedback provider. He states that his role is to guide students via the whole process of writing and of course to provide a well comprehensive feedback to learners. Even teacher 6 aligns with teacher 1 in saying that the job of academic writing teachers requires constant constructive feedback. Not different from teachers 1 and 6, teachers 3 and 4 affirm that it is highly important to follow the process-product approach and to support students through all stages of their writing.

As for Teacher 2 and 5, both highlight the idea of formative and summative. Teachers points out on other points that they have to take into consideration while doing their jobs. For instance, teacher 2, discusses the importance of various writing skills, such as rhetoric, structure and argumentation. Teacher 1 and 4 discuss critical thinking and coherence of the writing content. Teacher 4 further focuses on aspects of grammar vocabulary and clarity while writing. Finally, teacher 6 highlights the challenges and the complexities, especially with mixed –level groups. Teacher 6 further added that the teaching experience is both funny and challenging as well. While, teacher 7, focuses mainly on the lack of writing experience of students that makes teaching of English challenging.

Overall, data show the multi-facets of teaching academic writing, ranging from monitoring, instructing and emotional labor. By recognizing their central role in the teaching –learning process, teachers highlight the challenges faced by them in doing their job. Issues as poor writing experience and diverse levels are put into front. Teachers points out that supportive feedback and skill building are essential too.

Q2. Based on your experience, what are the common challenges that students encounter in writing academically?

Teachers put forth linguistic challenges. Many teachers consider that grammar, syntax, and vocabulary are common challenges that most students confront while using L2 language.

For example, teacher 5 highlighted issues problems with verb tenses, subject-verb agreement, articles, prepositions, and overuse of basic vocabulary. Teacher 6 also focuses on lack of vocabulary and the great influence of L1 on L2 writing (e.g., translation tendencies). She further added that students have deficiencies in both structure and organization.

Other teachers, such as teacher 2 and 5, focused on thesis statements, as a challenge to L1 students (Teachers 2 and 5). Teachers 3 and 5 discussed problems with essay organization and cohesion and the use of cohesive devices (teacher 5). There are cognitive and affective obstacle as well, such as fear of committing mistakes, no self-confidence and thinking about writing as a difficult task (teacher 3 and 6). Teacher 3 also highlights problems with brainstorming, which limits content generation.

Other problems are caused by lack of academic style and integrity issue. Teachers 1 and 5 mention confirmed that unintentional plagiarism can happen since students struggle with academic tone, referencing, and paraphrasing. Teacher 5 also focuses on an important point which is low engaging with the process of writing. For teacher 5, student intend not to revise of to read their written tasks, and even are unaware of the written conventions (Teacher1).

Overall, students are struggling with linguistic, emotional, cognitive and procedural barriers while writing. Students are either unknowledgeable about writing conventions or they follow the same educational habits. Problems of the interference of L1 in L2 and the escape from proofreading tasks are serious and suggest extra guidance from the part of teachers. Moreover, the teachers reference to poor referencing and weak paraphrasing calls for an urgent a need to embed academic integrity and citation literacy in writing instruction.

Q3. How do these challenges affect students' learning process?

Notably, challenges in academic writing will certainly affect the Academic performance. There is a direct link between these obstacles and grading and learning outcomes of learners.

Chained by certain academic difficulties, students will suffer at the level of academic performance, motivation, and course engagement. Teacher 5 adds that because some students have difficulties in riving their works, they prefer not to revise them at all.

According to Teacher 2, if students suffer serious writing problems, this would paralyze their ability of understanding the instructions, and the required tasks, thus they will be unable to use their thoughts properly. Whereas, Teacher 1 believes that if students can distinguish between formal and formal languages, then how they are will language properly and avoid plagiarism.

Teacher 3 believes that students suffering with vocabulary take a long time in the brainstorming stage, after that when they see themselves unable to generate ideas, they quit and skip the stage, thus affecting the quality of their final work. Being unaware of the instructions and guidelines of academic writing, such as paraphrasing

To conclude, students needed to be fully engaged in the learning process of writing. If students lack the essential writing skills or confidence, how are they going to be successfully engaged in the process? Students, further, lack a link between their perceptions and the academic expectations, especially when it comes to formality and referencing.

Q4. What is your general opinion about the use of AI in academic writing?

Based on its nature, AI tools were designed to facilitate the hard tasks that used to hinder students. Most teachers agree on the usefulness and benefits of AI to students of academic writing. Teachers 1, 2 and 4 highlight the efficiency of AI in checking grammar, spelling mistakes, vocabulary and instant feedback. Teacher 2 adds by saying that AI is good in areas related to brainstorming and ideas generating, while Teacher 3 confirms the enhancement of AI tools in essay models.

On the other hand, teacher display their concerns on the use of AI in academic writing, in general. Overdependence is the vital concern of most of teachers. Teachers are afraid that

students become addicted to AI and its services. For Teacher 4, overuse reduces students' creativity and critical thinking. Teacher 5 has concerns on the inappropriate use of AI by students. Overreliance of students to AI can kill their writing skills**.**

There are other teacher, who exhibit mixed feelings towards the use of AI like Teacher 4, who is "50% in favor and 50% against." He sees some benefits and recognizes some concerns. Teacher 1, in another hand, focuses on the use of AI as an aid, rather than replace to the original writing content. Teacher 1 focuses on the vital role of AI in helping students improve their writing styles rather than using AI as a short cut to a quick completion of the tasks.

In conclusion, the seven teachers recognize AI as a double-edged sword. If it is used ethically, it can be function as scaffolding tool to students, and if it were used unethically, it would result in embarrassing and serious issues, such as plagiarism and dishonest of the academic work. Teachers call for cautions use of AI by students**.**

Q5. Do you consider the use of AI for grammar checking and paraphrasing as ethically different from using it to generate whole paragraph or essay? Why?

All teachers with no exception draw a clear line between AI for grammar checking and paraphrasing. For them, the use of AI for grammar and paraphrasing is acceptable, however generating ideas using AI is deemed unethical, then it is unacceptable. Teacher 2 aligns with the previous idea. For Teacher 5, it is acceptable for students to engage in the learning process by looking for help. For him, AI must be helping students in improving their writing, not generating one.

Other teachers believe that the ethical or unethical use of teachers depends of the students' agency. Teacher 3 confirms if students generate the ideas, then using AI is ethical, while Teacher 1 focuses on the idea that it is up to the user and to what degree, he uses AI. Other teachers agree on the ethical use of AI in in editing or reviewing assistant. In this case, AI

feedback looks like teachers or peers' feedback, but if the students work is replaced by AI content, and then this act shifts to an act of plagiarism. Teachers 3 and 5, moreover, insist honesty. According to the opinion of Teacher 6, while paraphrasing, students should not copy-pasting and students need to engage actively in the learning process.

Based on the teachers' distinction, AI use is either assistive or substitution. Ethical use of AI comprises polishing the language, revising structure, clarifying ideas and not replacing the work of students by an AI generated one. This distinction is the students' ownership, creativity and transparency. Teachers frame ethical standards of AI tools in a way to complete not to compromise academic honesty and the academic work.

Q6. Do you believe AI tools can enhance students' writing skills? Why or why not?

As many of targeted teachers suggest it, AI plays a role in enhancing students writing skills only they are used properly and ethically. For Teacher 1, the misuse of AI works quite the opposite of development. Teacher 3 points of the responsible use of AI by students. Teacher 5 believes that the use of AI will be effective if it is accompanied with human oversight.

Both Teachers 2 and 4 see that AI are beneficial in error correction and feedback. Teacher 2 goes with the idea that AI helps providing accurate grammar and style feedback to students struggling with grammar and style. Grammarly, moreover, is efficient in spotting grammar, syntax, and vocabulary issues (Teacher 4).

AI tools can handle issues of Coherence and organization. Teacher 4aligns with the idea that AI can help students to have clear text structures, support paraphrasing, and show how to integrate sources properly. Learners can be autonomous by depending of AI feedback. Teacher 4 highlights this idea by saying that students are no longer in need of their teachers' feedback, instead they can consult AI for feedback.

Overall, Teachers believe that the key role of AI is to help not to replace off to generate ideas. AI tools are meant to scaffold learners writing level, then. In cases, students

are not available, students may look for AI feedback. In this case, AI becomes a second source to depend on after human instructors. AI is deemed as as a supplementary tutor that offers immediate feedback, helps with clarity and structure, and encourages independent revision.

Q7. What ethical concerns do you associate with the use of AI in academic assignments?

Most teachers are concerned with plagiarism and authenticity of the students' works. Since originality of the work is related to plagiarism, the two acts are not tolerated by both teachers and institutions. It is acceptable for teacher to commit grammatical mistakes, but it is forbidden to plagiarism. Teacher, for instance, warn their students from submitting plagiarized works. For Teachers1,2 and 5, AI generated texts lack comprehension and personal input. Teachers believe that these texts are machine input rather than human input. Teacher 5 aligns with the idea that most of students generate texts that notes that they do not understand, thus affecting the originality of the work and the learning process. Over reliance and passive learning is a common issue discussed by teachers. Teachers are threatened by the idea that students becoming addicted to the use of AI tools. In this case, students become passive rather than active.

For teacher 4, dependency is related to cheating, while teacher5 highlights the idea that students will be less engaged in reading and critical engagement if are edictally using AI.

Issues of loss of critical thinking and skill development are excessively insisted by teachers. The overreliance on AI will definitely stop the enhancement of essential academic skills. Teacher 5 affirms that students will lose the capacity of critical thinking constructive argumentation, and analytical reasoning if they rely heavily on AI.

Some of the teachers display concerns related to equity and fairness is assessment. Teacher 5 displayed this concern. In one classroom, you find students generate flawless works of a high quality and others generate works poorly done due to their inaccessibility to AI works.

In this case, the assessment process is distorted. Teachers will be unable to assess honestly and properly. For Teacher 3, using AI acknowledging raises concerns about academic honesty and traceability of student effort.

Most of teachers concerns go around the authenticity of the work and fairness of academic evaluation. Although, plagiarism is the obvious risk when using AI, teachers, teachers worry about pedagogical implications. For them, AI threatens to de-skill learners, widen equity gaps, and promote shallow engagement. The most important think for teachers is not the act of cheating, but the loss of the opportunity to think, struggle, and grow intellectually, thus AI is placed not as and technological issue but as a pedagogical and ethical dilemma.

Q8. How can AI be ethically employed in academic writing to support academic integrity in higher education?

Teachers provide a set of guidelines and measures to maintain the ethical use of AI in academic writing. The first rule set by teachers is the use of AI as a learning support, not a replacement. For Teacher 5, AI use must be confined to idea generation, revision of the works, and feedback, not for producing final assignments. Teacher 2 recommends that in order to maintain the appropriate use of AI, it should be used in refining academic work, by checking grammar and citation support), not to replace original work.

To make sure our students do not fall in plagiarism tracks, they must be knowledgeable about the appropriate use of AI. AI literacy must be integrated in the curricular and taught to students. Teachers can guide their students by showing them how AI tools works and how to use them from introduction to conclusion while assuming responsible use (teacher4). The same teachers point out for the teaching of special courses and materials on ethical AI use to support awareness and skill-building.

Teachers insist on transparency and integrity of the academic work. Teachers, thus encourage the establishment of culture of honest use of AI. With this step, institutions will

make sure of the moral disciplines by students while using AI in their writing tasks. Teacher 5 puts forth honesty and responsibility as core to students' ethical use of AI. Teacher 1 discusses the responsibility of institutions, students, and educators to address ethical risks, especially over-reliance on AI.

As far as educational institutions are concerned, they must set policies and guidance over the use of AI in higher education. Teachers note that the role of institutions should be proactive role. Teacher 1 and 4 suggest combining policies, education, and integration strategies. Teacher 4 says Institutional support needs to be set by institutions, thus institutions must set clear ethical guidelines, teacher training, and AI-integration into teaching and assume full responsibility for those who break ethical rules. The institution itself must punish any act or intention of plagiarism.

The responses show that educational institutions must play the role of oversight. Students must obey the rules set by the institution. Teachers believe that AI is a learning tool that strengthens autonomy, reflection, and skill development. This can happen only if students use AI with guidance and transparency. For teachers' students are not assumed the responsibility, but educators and institutions. It is the responsibility of instructors and institutions to create structured environments where AI supports rather than supplants academic integrity. Teachers believe that the act of forbade the use of AI is not well-studied step, instead students must be taught how to use AI ethically into writing instructions assessments, and academic culture to preserve both learning and honesty.

Q9. Do you have any concerns about the impact of AI tools on maintaining academic integrity? If so, explain.

All educators without exception highlight the risk of academic misconduct. Educators collectively voiced significant worries about the issue of plagiarism facilitated by AI. The capability of tools such as ChatGPT to quickly produce coherent written material blurs the

line between student and machine authorship. This jeopardizes the dependability of academic assessments and erodes the integrity of student work. In EFL settings, where students may already find it challenging to adhere to academic norms, the allure of circumventing these difficulties through AI-generated content is particularly strong. Teacher 1said that; "AI tools... can produce essays, code, or problem sets in an instant..."In this perspective, AI, for Teacher one, can produce negative impact rather than positive. For Teacher 5, "...detecting plagiarism becomes extremely challenging..." This teacher, in particular, states that plagiarism cannot be detected sometimes.

Teachers insisted in highlighting the idea of dependency and no autonomy. Excessive dependence on AI tools can result in passive learners who rely on automated recommendations instead of cultivating their own academic expression. Educators worry that instead of fostering student development, AI might serve as a crutch, especially for those with underdeveloped language skills. (Teacher 4) said, "They create a dependency in students."

Based on the teachers' answers, institutions put a set of ethical lines to prevent the ethical use of AI in academic writing. Even when organizations offer ethical standards, some educators doubt their impact. This indicates a necessity for not just the implementation of policies but also continuous discussions regarding values and accountability in online learning settings. Teacher 3 said, "We cannot assure the reliability of all the students..."

Q10. In your opinion, where should the line be drawn between acceptable and unacceptable use of AI in writing?

Educators' answers go around three themes. There is an emphasis on the idea that AI tools must be used to assist not to replace. There is a strong agreement that AI raises ethical concerns when it supersedes student thought processes. Acceptable utilization involves AI acting as a tool (such as for grammar correction or coherence suggestions), whereas

unacceptable utilization entails producing entire essays. This differentiation emphasizes the need to clarify and instruct on "productive" AI usage, particularly in EFL settings where students may confuse fluency with accuracy. Teacher 2 said, "The boundary should be established where AI use transitions from supporting students to completing the work for them."

Certain educators support the idea that students should openly acknowledge their use of AI. By acknowledging the use by AI, students claim their contextual honest. This trend indicates an increasing demand for transparency in academic endeavors and implies that responsible use of AI may also require fostering a culture of academic integrity. Teacher 3 align with the idea when he said, «Users should admit their usage..."

With the rapid growth of technologies, boundaries are feasible and not clear. Remarkably, one educator questions the feasibility of establishing a distinct boundary, which highlights the quickly changing and unclear characteristics of AI technologies. This implies that organizational guidelines need to be adaptable and proactive in relation to advancements in technology. Teacher 6 believes that lines of AI use cannot be defined. He said, "I believe it cannot be defined."

Q11. What advice would you give to students about using AI tools responsibly?

The six educators indicate that AI are meant to assist not to substitute students writing. Educators highlight the importance of AI in supporting writing development rather than taking the place of the writing process. Thoughtful usage means applying AI strategically—such as for checking grammar, organizing thoughts, or improving arguments—rather than generating content entirely on its own. This approach fits well with the process-oriented methods often recommended for writing instruction in EFL settings. The idea of AI assistance is of Teacher 2. He states, "Utilize AI as a tool to improve, not to substitute..." and Teacher 4 adds that AI is used to "...correct, assist, and propose but not to replicate..."

Theme three that teachers discuss is critical engagement and student ownership. Learners are urged to take responsibility for their intellectual contributions. AI ought to support metacognition, promoting self-reflection, revision, and enhancement, rather than diminish effort or originality. Teacher three points out those students need to depend on themselves to assure their critical thinking. Teacher 3 states "Take control of your own education."

There is also a focus on helping students recognize the educational possibilities of AI while cautioning them about its potential for misuse. Educators stress that with adequate awareness, students can use AI responsibly without sacrificing their integrity. Teacher 1said that “They need to understand its adverse effects.”

Q12. How can academic institutions promote responsible use of AI in academic work?

Educators insisted the theme of institutional policy and awareness. Educators are in favor of well-defined institutional policies governing the use of AI. These policies ought to outline acceptable behaviors and repercussions for improper use. This indicates an increasing agreement that authoritative guidance is crucial for maintaining academic integrity in the era of AI. "Establish precise AI usage guidelines..." (Teacher 2)

AI regulations must be included in the curriculum. Students must be knowledgeable of AI use. Beyond regulations, there is a need for educational initiatives, educating students on not only how to utilize AI but also how to engage with it ethically. Incorporating this into educational programs would guarantee that students become not only technologically adept but also morally aware learners. Teacher 4 states that "...incorporating AI applications in teaching in a clear and principled manner."

The last theme that educators discuss was the AIs role as assessment reform and detection tools. Educators are also advocating for a reevaluation of assessment methods to reduce the effectiveness of AI misuse—such as incorporating drafts and reflective components, and recommend providing training for faculty on AI detection techniques. This suggests a

comprehensive institutional strategy that integrates pedagogy, technology, and ethical considerations. Teacher 5 affirms that AI tools re helpful for teachers when used as detection tools. He said that "Revamping assessment... and equipping teachers with detection resources..."

3.4 Summary of the Results:

The obtained findings from the questionnaire were positive and were of a help to reach the objectives of the answer of the research question. The findings can be summarized in the following points:

All students surveyed (100%) indicated that they utilize AI tools for academic writing, with nearly half (48.9%) expressing that they are "very familiar" with these technologies. This indicates a broad acceptance of AI in academic settings.

The primary challenge students encounter when using AI is related to "ethical concerns" (53.3%), especially with respect to plagiarism and maintaining academic integrity. This anxiety stems from the risk of academic repercussions.

A large portion of students employs AI for "multiple purposes" (77.77%), including grammar checks, spelling correction, paraphrasing, and overall writing help (such as generating ideas and outlining). This emphasizes the flexibility of AI in tackling various writing challenges

A significant number of students (62.2%) feel that both conventional teacher feedback and AI-generated writing feedback are beneficial, indicating a preference for a blended method of learning support. • Belief in AI's Beneficial Effects: A notable majority (73.3% combined "strongly agree" and "agree") believe that AI tools enhance the quality of students' academic work, attributing this improvement to greater accuracy, support for critical thinking, and increased efficiency. •

Students generally view AI tools as "accurate" (82.2%) or "very accurate" (17.8%) when it comes to suggesting corrections in grammar and style, though some acknowledge the possibility of misinterpretations or generic feedback. An overwhelming majority of students (93.4% combined "yes, definitely" and "yes, likely") predict that AI will take on a larger role in writing within higher education.

Although ethical considerations are at the forefront, students are also worried about diminished originality, excessive reliance on AI tools, and a potential decline in critical thinking skills. Results obtained from the interview focused on the Primary Teachers of support and evaluation. Educators perceive their essential role as offering guidance, assistance, and constructive criticism throughout the academic writing journey, focusing on a process-product methodology.

Instructors highlight various student challenges, including linguistic difficulties (grammar, vocabulary, interference from their first language), organizational issues (thesis development, essay structure), cognitive/emotional barriers (anxiety about errors, lack of confidence), and problems related to academic style and integrity (unintentional plagiarism, inadequate referencing, and low engagement).

Educators acknowledge the advantages of AI (grammar correction, idea generation, immediate feedback), yet they express notable concerns about dependency, which they fear might hinder creativity and critical thinking skills.

All educators establish a definitive separation: using AI for grammar checks and paraphrasing is generally permissible; however, using it to generate full paragraphs or essays is deemed unethical and unacceptable. This distinction is based on the importance of student agency and the belief that AI should aid rather than replace individual thinking.

Educators are very apprehensive about plagiarism and the authenticity of student submissions, especially AI-generated content that may lack personal insight or

comprehension. They are also worried about passive learning and the diminishing skill levels of students.

Educators stress the importance of having institutions implement explicit policies, provide AI literacy training, and establish structured settings where AI enhances academic integrity instead of undermining it.

Some educators propose reassessing evaluation techniques to reduce AI misuse, recommending an emphasis on the writing process (including drafts and revisions) rather than focusing solely on the outcome, along with training faculty in AI detection methods.

As far as the student's questionnaire and teachers' interview are concerned. Almost all answers of teachers and students confirmed that although of the huge beneficial services that AI provide, it rises challenging and dangerous issues that are related to plagiarism and academic integrity. Based on the results of the questionnaire, the researcher could answer the main question and prove the hypothesis.

3.5 A Comparative Summary of Students' and Teachers' Perspectives on Academic Writing and AI Use:

Table 2.22:

A Comparison between the Teachers Questionnaire and the Teachers Interview

Theme	**Students' Perspectives**	**Teachers' Perspectives**	**Comparison**
Writing Challenges	• 71.1% face multiple difficulties (ideas, vocabulary, structure). • 51.1% find all writing genres difficult. • Struggles linked to lack of vocabulary and L2 proficiency.	• Highlight issues in grammar, cohesion, academic tone, referencing. • Note deeper challenges: fear of mistakes, limited writing habits, and L1 interference. • Low student engagement with writing stages.	Convergent: Both agree writing is difficult. Divergent: Students report surface-level struggles; teachers identify root causes and cognitive/attitudinal barriers.

Use of AI Tools	• 100% use AI; 64.45% use more than one tool. • AI used for paraphrasing, idea generation, grammar. • 62.2% value both AI and teacher feedback.	• Acknowledge AI can support grammar, ideas, and structure. • Caution against overuse; fear it may reduce creativity, effort, and learning. • View AI as a support, not a replacement.	Convergent: Both recognize AI's utility. Divergent: Students more enthusiastic; teachers urge moderation and strategic use
Ethical Concerns	• 62.3% do not see AI use as unethical or plagiarism. • 71.1% have encountered ethical issues (e.g., unintentional plagiarism).	• Strong concern about plagiarism, lack of transparency, over-reliance. • Call for clear distinction between support (acceptable) and substitution (unethical).	Divergent: Students show limited ethical awareness; teachers stress academic integrity and responsible usage.
Impact on Skill Development	• 73.3% agree AI improves writing (clarity, accuracy, structure). • See AI as a time-saving and helpful writing enhancer	AI can support skill-building if used ethically. • Misuse may hinder critical thinking and independent learning. • Emphasize guided and reflective use.	Divergent: Students link improvement to output; teachers emphasize process and learner engagement
Institutional Role and Recommendations	• Support training, ethical guidelines, and integration of AI into curricula. • Favor structured implementation.	• Urge development of AI literacy, policy reforms, and assessment redesign. • Advocate teaching AI use ethically and transparent	Convergent: Both groups call for institutional support and ethical training. Teachers emphasize pedagogical safeguards more

This section provides a comparative analysis of the data collected from students' questionnaires and teachers' interviews, highlighting converging and diverging perspectives regarding academic writing challenges, the integration of Artificial Intelligence (AI) tools, and ethical considerations in higher education contexts.

Findings from both students and teachers indicate a shared recognition of the multifaceted challenges inherent in academic writing. The majority of student respondents (71.12%) reported facing multiple difficulties, particularly in idea generation, vocabulary use, and structural coherence. Similarly, teachers identified pervasive issues with grammar, cohesion, vocabulary, and organization. Furthermore, they emphasized cognitive and affective barriers such as students' fear of error, lack of confidence, and inadequate engagement with critical stages of the writing process (e.g., brainstorming and revision).

Notably, teachers also highlighted the negative transfer from students' first language (L1), which often manifests in syntactic and lexical errors in English. While students' self-reported challenges reflect surface-level linguistic and structural concerns, teachers provided a more nuanced view, suggesting that such difficulties are compounded by systemic pedagogical gaps and attitudinal factors. This convergence affirms the necessity of targeted instructional interventions that address both skill development and mindset shifts.

Student responses demonstrate widespread familiarity and engagement with AI-assisted tools: 100% reported using them, with 64.45% employing more than one tool. The most utilized applications include ChatGPT and similar platforms, primarily for writing assistance, idea generation, and paraphrasing. Notably, 62.2% of students valued a hybrid feedback approach combining AI and teacher input, underscoring the perceived effectiveness of AI-enhanced learning.

Conversely, while teachers acknowledged the potential benefits of AI—particularly in grammar checking, brainstorming, and structural modeling—they expressed measured concerns regarding students' over-reliance on such tools. Teachers emphasized that AI should serve as a supplementary aid rather than a replacement for student effort and critical thinking. Several educators observed that unregulated use of generative AI may compromise creativity, engagement, and independent writing development. Thus, while both cohorts

acknowledge AI's utility, students tend to view it more enthusiastically and pragmatically, whereas teachers advocate for a cautious, pedagogically informed integration.

A notable divergence emerged regarding perceptions of ethical implications. Although 71.1% of students reported encountering ethical concerns such as unintentional plagiarism, a substantial portion (62.3%) did not consider the use of AI in academic writing inherently unethical. This suggests a gap in ethical awareness and underscores the need for clearer institutional guidance.

Teachers, on the other hand, expressed profound concern about the erosion of academic integrity. Most interviewees delineated a clear ethical boundary between acceptable uses of AI (e.g., for grammar correction and paraphrasing) and unacceptable practices (e.g., generating entire essays or research papers). Additionally, they highlighted issues related to authorship, ownership, fairness in assessment, and the potential for academic misconduct. Concerns about transparency and unequal access to AI tools further complicated the ethical landscape from the educators' standpoint. This contrast reveals a misalignment between student practices and institutional expectations, necessitating comprehensive educational interventions to foster academic honesty in the age of digital assistance.

Student participants generally perceived AI as a valuable tool for improving their academic writing skills. A combined 73.3% (agree/strongly agree) believed that AI enhanced the quality of their writing, particularly in terms of clarity, accuracy, and organization. Their justifications often emphasized time-saving, feedback immediacy, and ease of use.

Teachers, while recognizing the scaffolding potential of AI, cautioned against its misuse. They argued that writing skill development is contingent upon the strategic, ethical, and guided use of AI tools. Over-dependence, they contended, may result in superficial learning and diminished capacity for independent writing and critical engagement.The findings

suggest that the discrepancy lies not in the perceived benefits of AI, but in the depth of understanding regarding its pedagogical implications and long-term consequences on learners' autonomy and critical thinking.

Both groups advocated for the institutional promotion of responsible AI use. Students recommended the integration of AI literacy into academic curricula, alongside ethical guidelines and training workshops. Teachers echoed these suggestions and further stressed the importance of ethical instruction, transparent usage, and assessment reform to mitigate AI misuse.

Educators emphasized that AI should be introduced within a structured learning environment that preserves the integrity of the writing process. They also called for clear policies to distinguish between acceptable and unacceptable AI applications and advocated for developing students' awareness of AI limitations.

Conclusion:

In sum, this chapter obtained a comprehensive analysis of the teachers questionnaire and the interview od teachers. Both data collection tools answered the research questions and the set hypothesis. It was confirmed that te ethical use of AI by higher education students has an effect on the integrity of the academic work and other ethical implications. Both teachers and students agreed on that AI are helpful as far are used ethically, otherwise students will suffer from issues of dishonesty and plagiarism of their works.

General Conclusion and Recommendation

General Conclusion:

Writing in L2 language is not an easy task; it requires special skills and a big knowledge of writing conventions, vocabulary and style. The learner must master the grammatical rules and can articulate them properly and correctly. Learners with high developed writing levels this not an issue, but learners with low or poor writing capacities, it is a big deal. And since teachers require written works, students tend to find alternatives to overcome their writing issues. They look for tools to do that like AI assisting tools. These tools will perfectly polish their works, but they will not show the real level of students, or more dangerously will fell the students in the trap of unintentional plagiarism of the issue of academic honesty.

The conducted study aims at to examine the ethical implications that AI has of higher education students on academic integrity on academic writing. One of the aims of the work is not only investigating the ethical implications of AI, but to rise student's awareness on the seriousity of this issue.

On the spectrum of this study, the theoretical part was divided into two main chapters, academic writing and Artificial Intelligence's main concern of this chapter is to provide the reader with a comprehensive and elaborated overview on Academic writing. And highlight the challenges of academic writing. Wherein, the second highlighted that AI is a computer science field, its roots, its use and its ethical and unethical concerns that it displays. Of course, chapter three is devoted to the analysis and the interpretations of the student's questionnaire and the teachers interview answers.

The opted methods are used to collect data. The researcher chose a semi-structured questionnaire that was submitted to 45 Master One students of Mohamed Kheidar University. The interview was designed for teacher. Six teachers of academic writing of the

same university answered it. The two tools were used to answer the main question and confirm the hypothesis.

Student questionnaire resulted in the following. Higher education students struggle from serious problems of writing; thus, they use AI to improve their writings. Therefore, we can say that there is a strong link between the two. Second, students frequently use AI, they rely on heavily. The overuse of AI leads them to be passive, lazy, dependent and not original. Most students are not aware of the unethical implications accompanied with AI use. As a source, AI information must be acknowledged, like any source, thus, students can unintentionally fall into plagiarism

AI are designed to assist students, facilitate their tasks, and guarantee high scores in English only if they are used ethically. In the same vein, students strongly agree on the integration of AI in higher education and they agree on its accuracy as well, while others exhibit feelings of discomfort, frightening, and unease with AI use.

It can be deduced from the student's questionnaire that the use of AI improperly has an impact on the academic integrity of the work since it has to do with plagiarism as well. In order to maintain academic integrity, the researcher has not to over use them or know how to use them or keep the authenticity of the work.

As far as the interview is concerned, all teachers confirmed that the students use AI.AI are helpful if are ethically used. If you are used to enhance, not to replace or substitute. If they are used to substitute, we are no more talking about a human product but a robot production.

All targeted teachers warned about the overreliance of on AI and advised students to keep their origin of the work even with the use of AI. They need to conduct their own use of AI and know that they must respect the guidelines between what is ethical and what is not.

The teachers also highlighted their role as instructors and and guide to shed light on the challenges of the academic writings. They further added that AI makes their work of assessment hard. They focused on plagiarism issues and they advised institutions to set rules not to ban AI, but to regulate its use. Finally, we would like to confirm that the research question is answered and the hypothesis is confirmed.

Limitations of the Study and Further Research:

As a researcher, we have come across various challenges:

- While conducting the research, the researcher was struggling to finish the dissertation in the time allotted to.
- Selection was a challenging task to the researcher with the availability of data.
- Vagueness of the are of AI made the reader afraid that the selected information are not enough or do not serve the purpose of the topic.

I suggest a further reading on the topic of AI because it is only partial explored. With all research on AI, still there are dark uncovered places.AI is a vague world where lines are blurred and nothing seem completely ethical or unethical. The world of AI is changing every day, students can do research about various aspects of AI.

Recommendations:

Based on these findings, the following recommendations are proposed:

For Students

- Students have to confront their challenges in order to improve their writing styles.
- Students must try to enhance their academic writing by reading and knowing conventions of writing.
- Try to solve their issue related to written rather than ignore or try a short cut like AI.
- Students must be knowledgeable about AI and its uses.
- If AI are used, they must be ethically used.
- Students must not be overuse AI tools
- Students are required to take what is beneficial from AI.
- Keep the originality of your work even when you use AI
- Students must know that there is a draw line between ethical and unethical uses of AI.
- Students must know also that the unethical use of AI in academic writing will harm academic integrity.
- No academic integrity means plagiarism and plagiarism is punished in many institutions.

For Teachers

- It is preferable for teachers to take AI courses or be integrated in workshops.
- Students must be constantly be reminded of AI misuse.
- Teachers must focus more on their students writing challenges.
- This education should also equip students with the skills to critically evaluate AI-generated content for accuracy and bias.

- Move towards assessment methods that emphasize the writing process (e.g., requiring drafts, reflections on the writing process, oral defenses, in-class writing) rather than solely focusing on final products.
- Design assignments that require higher-order thinking, creativity, and personal voice, making it more challenging for AI to generate fully satisfactory responses.
- Foster a Culture of Transparency and Academic Honesty:
- Encourage students to transparently disclose their use of AI tools in their academic work. This could involve specific citation formats or declaration statements.
- Emphasize that the goal is not to forbid AI, but to teach responsible and honest engagement with it, reinforcing the core values of academic integrity.
- Teachers can leverage AI for initial checks (grammar, spelling, basic structure) to free up time for more in-depth, higher-order feedback on critical thinking, argumentation, and originality.
- Investigate and Adopt AI Detection Tools Prudently: Explore and, where appropriate, implement AI detection tools as part of a broader strategy for academic integrity, while acknowledging their limitations and potential for false positives.
- Focus on educating students about the consequences of unethical AI use rather than solely relying on detection.

For Institution

- Develop Clear and Comprehensive AI Policies: Academic institutions must establish explicit and regularly updated policies on the acceptable and unacceptable uses of AI in academic writing. These policies should clearly define plagiarism in the context of AI-generated content and outline consequences for misuse.
- Disciplinary-specific guidelines may be necessary, as acceptable AI use might vary across fields.

- Integrate AI Literacy into Curricula: Mandatory modules or workshops on AI literacy should be introduced for all students, covering: The capabilities and limitations of various AI tools, ethical considerations, including proper citation, acknowledgment of AI assistance, and avoiding unintentional plagiarism and strategies for using AI as a legitimate learning and assistive tool, fostering critical thinking rather than overreliance.
- Provide Training and Support for Educators: Teachers need training on how AI tools function, how students are likely to use them, and effective pedagogical strategies for integrating AI into assignments while upholding academic integrity. Training should also cover methods for detecting AI-generated content and understanding the nuances of AI output.
- Promote a Hybrid Feedback Approach: Institutions should encourage a balanced approach to feedback that combines the personalized, contextualized insights of human teachers with the immediate, objective corrections offered by AI tools.
- Punish plagiarism if it is found.

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Appendices

Appendix A: Students' Questionnaire

Dear Students,

We would be so grateful if you could devote some of your time to answer the following questionnaire. It is an attempt to collect data for the accomplishment of a Master dissertation in Sciences of the Language. The study aims to explore your attitudes towards "The Ethical Use of Artificial Intelligence to Uphold Academic Integrity in Academic Writing". Therefore, we would be so grateful if you could provide us with precise, clear, and complete responses. Be sure that your answers will be anonymous and will be used for research purposes only.

Prepared by:

HELIMI Chaima

Supervised by:

Dr. BACHAR Ahmed

Academic Year: 2024/2025

Section One: General Information

Q1: Would you specify your academic level, please?

- Bachelor
- Master
- PhD

Q2: Would you specify your field of study?

……..

Section Two: Students' Academic Writing Difficulties

Q3. What is your current academic writing level?

- Poor - I definitely need some help
- Acceptable - but I know I could improve
- Good - I could improve with some advanced tips
- Excellent - I don't think I could improve much

Q4. What difficulties do you face in Academic Writing? You may choose more than one answer.

- Generating ideas and organize them.
- Poor Vocabulary
- Spelling mistakes
- Integrating sources effectively in my writing
- Writing introductions and conclusions
- Academic conventions (citations and references(
- Plagiarism

If others please specify

……

Q5. Among the following genres of Academic Writing, which is the most difficult one?

- ☐ Essay
- ☐ Research papers and proposals
- ☐ Dissertations
- ☐ All of them

Section Three: Students Familiarity with AI tools?

Q6. How much familiar are you with AI tools for Academic Writing?

- ☐ Not familiar
- ☐ Slightly Familiar
- ☐ Moderately familiar
- ☐ Very Familiar

Q7. Have you used any AI assisted tools for Academic Writing?

- ☐ Yes
- ☐ No

If yes, which AI tools have you used? You may choose more than one answer

- ☐ Grammarly
- ☐ Quill boot
- ☐ ChatGPT
- ☐ Turnitin
- ☐ Write Sonic

If others, please specify.

……..

Q8. For what purpose (s) do you use AI tool in Academic Writing? You may choose more than one answer.

- ☐ Grammar and spell checking
- ☐ Paraphrasing
- ☐ Writing assistance (generating ideas, outline, etc(.
- ☐ Citation
- ☐ Plagiarism detection

Q9. What do you find more useful?

- ☐ Traditional teacher feedback
- ☐ AI Writing Feedback
- ☐ Both

Justify your answer, please.

……

…….

Q10. How often do you rely on AI tools to paraphrase or rephrase?

- ☐ Always
- ☐ Occasionally
- ☐ Rarely
- ☐ Never

Section Four: Students' Attitudes towards the Use of AI Tools to Write Academically

Q11. Do you think AI tools may replace traditional instructing?

- ☐ Yes
- ☐ No

Q12. The use of AI tools improves the quality of students' academic work?

- ☐ Strongly agree

- Agree
- Neutral
- Disagree
- Strongly disagree

Justify your answer, please

……

……

Q13. In which aspect of writing does AI help improve the most? You may choose more than one answer.

- Grammar and spelling
- Vocabulary
- Academic Writing style
- Sentence structure
- All of them

If others, please specify

……

Q14. In your opinion, how accurate are AI tools in suggesting grammar or style correction?

- Very accurate
- Accurate
- Not accurate at all

Justify your answer, please.

……

Q15. What is the biggest challenge have you faced when using AI for writing?

- AI content is not always correct

- I do not know how to use them effectively
- I have ethical concerns

Section Five: Ethical Concerns of AI Use in Higher Education

Q16. Do you think that using AI tools for Academic Writing in higher education context is considered unethical or a form of plagiarism?

- Yes, definitely
- No, not really
- No, not at all
- No, not really

Q17. Have you encountered any ethical concerns regarding the use of AI tools in Academic Writing (eg: unintentional plagiarism, other ship issues, etc)?

- Yes frequently
- Yes, occasionally
- No, never
- Not use

Q18. Do you see AI tools playing an increasing role in writing in higher education in the future?

- Yes, definitely
- Yes, likely
- No, not really
- No, not at all

Q19. What are your main concerns regarding the increasing use of AI tools in Academic Writing?

- Ethical Implications
- Problems of integrity

- ☐ Decreased originality of academic work
- ☐ Over reliance of AI tools
- ☐ Reduction in critical thinking
- ☐ All of them

If others, please specify

……..

Q20. Would you recommend the use of AI tools in higher education?

- ☐ Yes, recommend
- ☐ Yes, somewhat recommend
- ☐ No, not really
- ☐ No, not at all

Q21. How can Academic institutions promote possible use of AI in Academic Writing?

……

……

Q22. How comfortable are you with the idea of artificial intelligence assisted tools providing feedback on your Academic Writing?

……

……

Q23. How comfortable are you with the idea of artificial intelligence assisted tools providing feedback on your Academic Writing?

……

……

Appendix B: Interview for EFL Teachers

Dear teacher,

We would be so grateful if you could devote some of your time to participate in the following interview. It is an attempt to collect data for the accomplishment of a Master dissertation in Sciences of the Language. The study aims to explore your attitudes towards "The Ethical Use of Artificial Intelligence to Uphold Academic Integrity in Academic Writing". Therefore, we would be so grateful if you could provide us with precise, clear, and complete responses. Be sure that your answers will be anonymous and will be used for research purposes only.

Prepared by:

HELIMI Chaima

Supervised by:

Dr. BACHAR Ahmed

Academic Year: 2024/2025

Interview for EFL Teachers:

Q1. How can you describe your current role and your experience with teaching or assessing academic writing? You can answer this question, in case you do not teach academic writing module.

……

……

Q2. Based on your experience, what are the common challenges that students encounter in writing academically?

……

……

Q3. How do these challenges affect students' learning process ?

……

……

Q4. What is your general opinion about the use of AI in academic writing ?

……

……

Q5. Do you consider the use of AI for grammar checking and paraphrasing as ethically? different from using it to generate whole paragraph or essay? Why?

……

……

Q6. Do you believe AI tools can enhance students' writing skills why or why not ?

……

……

Q7. What ethical concerns do you associate with the use of AI in academic assignments ?

……

……

Q8. How can AI be ethically employed in academic writing to support academic integrity in higher education?

……

……

Q9. Do you have any concerns about the impact of AI tools on maintaining academic? integrity? If so, explain?

……

……

Q10. In your opinion, where should the line be drawn between acceptable and unacceptable use of AI in writing?

……

……

Q11. What advice would you give to students about using AI tools responsibly ?

……

……

Q12. How can academic institutions promote responsible use of AI in academic work?

……

……

الملخص

هدفت هذه الدراسة، المعنونة "التحقيق في الاستخدام الأخلاقي للذكاء الاصطناعي للحفاظ على النزاهة الأكاديمية في الكتابة الأكاديمية"، إلى تتبع العلاقة بين استخدام الذكاء الاصطناعي وقضايا النزاهة الأكاديمية، وكيف يرتكب طلاب التعليم العالي ممارسات غير أخلاقية يعتقدون أنها مقبولة. لقد أحدث الذكاء الاصطناعي ثورة في العالم بإمكانياته غير المحدودة التي يوفرها للأفراد، ويعد التعليم أحد المجالات التي تأثرت به. يأتي الذكاء الاصطناعي للتغلب على بعض التحديات التي تثيرها مهام الكتابة، مثل الأسلوب وقواعد الكتابة ونقص المفردات. ومع ذلك، فإن استخدام الذكاء الاصطناعي يثير بعض التداعيات الأخلاقية التي لا يدركها الطلاب في كثير من الأحيان.لذلك، افترضنا أن الاستخدام غير الأخلاقي وغير المناسب للذكاء الاصطناعي لا يحافظ على أمانة العمل الأكاديمي. لاختبار صحة هذا العمل، تم استخدام منهج مختلط من خلال استبيان شبه منظم تم تقديمه عبر الإنترنت إلى 45 طالبًا من طلاب الماستر 1 بجامعة محمد خيضر، ومقابلة للمعلمين تم تقديمها إلى 6 أساتذة للكتابة الأكاديمية من نفس الجامعة. أظهرت البيانات التي تم الحصول عليها عن اتفاق عام بين كل من المعلمين والطلاب على مخاطر استخدام الذكاء الاصطناعي بشكل غير أخلاقي. وبالتالي، يوصى بأن تضع المؤسسات التعليمية سياسات وتدابير واضحة ليس لحظر، بل لتنظيم استخدام الذكاء الاصطناعي في التعليم العالي.

الكلمات المفتاحية: النزاهة الأكاديمية، الكتابة الأكاديمية، الذكاء الاصطناعي، التداعيات الأخلاقية.