



People's Democratic Republic of Algeria
Ministry of Higher Education and Scientific Research



University of Chadli Bendjedid El-Tarf

Faculty of Letters and Languages

Department of English

**The Impact of Artificial Intelligence (AI) on English Language Teaching
and Learning: Students' Writing Skills**

Dissertation Submitted to the Department of English in Partial Fulfilment of the
Requirements for the Master Degree in Didactics of English

Submitted by:

Amani Dahmani & Selma Bouacha

Supervised by:

Dr. Sana Bouras

Board of Examiners

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Supervisor: Dr. Sana Bouras	MCB	University of Chadli Bendjedid El-Tarf
Examiner: Mr. Amine Medjabra	MAA	University of Chadli Bendjedid El-Tarf

Academic Year

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Declaration of Authentic Authorship

We hereby declare that this research work, which we submit for assessment of the program of study leading to the award of Master in Didactics of English, represents our original work and has not been submitted to another assessment. We also declare that all words and ideas from other works have been appropriately cited and acknowledged.

Students' names: Amani Dahmani and Selma Bouacha

Signed:

Date:

Students' number:

Dedication

In the name of ALLAH, the Most Gracious, Most Merciful.

With deep gratitude, respect, and thanks, we dedicate this work to our dear families for their continuous care, support, and patience and to everyone who helped us throughout our educational journey.

Thanks words also go to our friends, Marwa, Nada and Meriem who supported us during the period of conducting this research and did not hesitate to provide us with the slightest information.

Amani & Selma

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Abstract

Education is one of the significant sectors that is constantly receiving a high degree of concern as it paves the way for future successful individuals. Several trends and emerging technologies are refined and will have an impact on the future of education including Generative Artificial Intelligence (Generative AI). The present study aims at exploring teachers and students' attitudes towards AI implementation and its impact on teaching/learning writing skills in English as a Foreign Language (EFL) context at Chadli Bendjedid University El-Tarf. Besides, It seeks to highlight the major writing-related difficulties that learners and teachers face and can be solved thanks to AI. It is hypothesized that EFL teachers and students have a favourable attitude towards AI writing tools that positively influence on teaching/learning writing skills. To test these hypotheses, qualitative research design is adopted based on a descriptive approach. Two data gathering tools were designed; an online survey administered to EFL students (N=366) in addition to an online questionnaire addressed to EFL teachers (N=24). The findings indicated that teachers and students perceive writing as a challenging skill; hence, they encounter some problems that impede them from performing their tasks properly. Moreover, the majority of the participants had a positive attitude towards AI writing tools that assist educators in their teaching practices. Nevertheless, it is worth mentioning that some of them remained neutral while a minority expressed a negative attitude regarding AI effectiveness. In light of the obtained results, the aforementioned hypotheses are successfully confirmed. The researchers concluded by providing a set of recommendations and limitations.

Keywords: Artificial Intelligence (AI), AI writing tools, EFL teachers/students attitudes, EFL teaching/learning, writing skills.

ملخص

التعليم هو أحد أهم القطاعات التي تحظى باستمرار بدرجة عالية من الاهتمام لأنه يمهد الطريق للأفراد الناجحين في المستقبل. هناك العديد من الاتجاهات والتقنيات الناشئة التي يتم تحسينها والتي سيكون لها تأثير على مستقبل التعليم بما في ذلك الذكاء الاصطناعي التوليدي. تهدف هذه الدراسة إلى استكشاف مواقف الأساتذة والطلاب تجاه تطبيق الذكاء الاصطناعي وتأثيره على تدريس/تعلم مهارة الكتابة باللغة الإنجليزية كلغة أجنبية في جامعة الشاذلي بن جديد -الطارف-. إلى جانب ذلك، تسعى هذه الدراسة إلى تسليط الضوء على الصعوبات الرئيسية المتعلقة بالكتابة التي يواجهها المتعلمون والمدرسون والتي يمكن حلها بفضل الذكاء الاصطناعي. من المفترض أن يكون لدى أساتذة وطلبة اللغة الإنجليزية كلغة أجنبية موقف إيجابي تجاه أدوات الكتابة بالذكاء الاصطناعي التي تؤثر بشكل إيجابي على تدريس/تعلم الكتابة. وللتأكد من صحة هذه الفرضية، تم اعتماد تصميم البحث النوعي المبني على المنهج الوصفي. تم تصميم أداتين لجمع البيانات؛ استبيان إلكتروني تم توجيهه لطلاب اللغة الإنجليزية كلغة أجنبية (العدد=366) بالإضافة إلى سبر آراء إلكتروني موجه إلى معلمي اللغة الإنجليزية كلغة أجنبية (العدد=24). أشارت النتائج إلى أن الأساتذة والطلاب ينظرون إلى الكتابة على أنها مهارة صعبة؛ وبالتالي، فإنهم يواجهون بعض المشاكل التي تعيقهم عن أداء مهامهم كما ينبغي. إضافة إلى ذلك، كان لدى غالبية المشاركين موقف إيجابي تجاه أدوات الذكاء الاصطناعي التي تساعد المدرسين في ممارساتهم التعليمية. ومع ذلك، تجدر الإشارة إلى أن بعضهم ظل محايداً بينما أعربت أقلية عن موقف سلبي فيما يتعلق بفعالية الذكاء الاصطناعي. وبالتالي، على ضوء النتائج المتحصل عليها فقد تم تأكيد الفرضيات المذكورة أعلاه بنجاح. واختتم الباحثون بتقديم مجموعة من التوصيات التي تضمن التنفيذ الناجح للذكاء الاصطناعي واقتراحات لمزيد من البحث.

الكلمات المفتاحية: الذكاء الاصطناعي، أدوات الكتابة بالذكاء الاصطناعي، مواقف أساتذة/طلبة اللغة الإنجليزية كلغة أجنبية، تدريس/تعلم اللغة الإنجليزية كلغة أجنبية، مهارات الكتابة.

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List of Acronyms and Abbreviations

AI: Artificial Intelligence

AIEd: Artificial Intelligence in Education

CDs: Cohesive Devices

ChatGPT: Chat Generative Pre-Trained Transformer

COVID-19: Coronavirus Disease 2019

EFL: English as a Foreign Language

ELT: English Language Teaching

ERT: Emergency Remote Teaching

et al.: et alia (and others)

etc.: et cetera

FL: Foreign Language

H: Hypothesis

i.e.: That is to say

ITSS: Intelligent Tutoring Systems

L1: First Language

L2: Second Language

NLP: Natural Language Processing

OECD: Organisation for Economic Co-operation and Development

PIC-RAT: Passive, Interactive and Creative / Replacement, Amplification and Transformation

Q: Question

TRI: Technology Readiness Index

TTF: Task-Technology Fit

UNICEF: United Nations International Children's Emergency Fund

UTAUT: Unified Theory of Acceptance and Use of Technology

%: Percentage

Chapter One**Introductory Chapter****Introduction**

Having good writing skills is essential in learning a foreign language (FL) so that learners will be able to communicate their thoughts and ideas clearly and comprehensively. Because most of the examinations and contests at the university level are based on this productive skill, students should develop their writing abilities. However, the reality is completely the opposite as the majority of EFL learners face many difficulties in different areas of writing including content, organization, grammar, and mechanics. Similarly, educators assert that while teaching writing is complex, maintaining students' motivation is even more challenging. With the technological advancement and the release of ChatGPT in 2022, the education sector deviated towards the use of AI to facilitate the teaching/learning process.

This study endeavours to gain insights into EFL teachers and students' attitudes towards AI writing tools and the extent to which these applications influence their writing skills. As such, this introductory chapter encompasses the statement of the problem, the aims of the study and its significance. In addition, it provides the research questions along with the hypotheses and the research design. It concludes with the structure of the dissertation.

Statement of the Problem

After the shock of the COVID-19 pandemic, the education sector witnessed an incredible shift in teaching and learning practices and has been subject to greater levels of digital disruption, especially after the Emergency Remote Teaching period (ERT). Digital disruption, which refers to the changes that are caused by emerging digital technologies and innovation, has become very prominent particularly after the rise of AI heralded by the public release of ChatGPT by Open AI in 2022. Recently, AI has become a trend in education due to its infinite

benefits that revolutionize the field of didactics, most prominently in English Language Teaching (ELT). However, it is noteworthy that many EFL students encounter numerous challenges throughout their journey of English language learning, notably when it comes to writing. Limited linguistic repertoire, lack of ideas and information, grammatical and syntactic errors, difficulty in expressing their thoughts coherently and cohesively, deficiency in writing mechanics (punctuation, capitalization and spelling), and the literal translation from the mother tongue to the FL are among the barriers that may impede students' writing proficiency; hence, creating a sense of frustration and disappointment among them and even a negative attitude towards learning the target language.

Additionally, since writing is a challenging skill, teachers face some problems as well, most importantly the time constraints as they cannot provide feedback and detailed information regarding all the students' pieces of writing, let alone the large classes which make the assessment process more labor intensive. In the same vein, the recursive aspect of writing that is based on re-drafting and re-editing will present a dilemma for teachers as it will be time and effort consuming. Moreover, the students' uneven level of writing ability requires practitioners to use different approaches and diversify the selected materials and activities, which becomes a burden for them.

Although many studies have examined the role of AI, there is a lack of research on how this technology affects EFL teaching/learning in general and the writing skill in particular. Therefore, it is important to address the topic of AI integration in the EFL context and how it can mitigate to some extent the majority of the hurdles they encounter to facilitate the process of teaching/learning writing skills especially that it has never been tackled previously at Chadli Bendjedid University.

Research Questions

To carry out the current study, the following research questions have been formulated:

Q1: What are EFL students' attitudes towards the implementation of AI tools in teaching and learning writing skills at Chadli Bendjedid University?

Q2: How do EFL teachers perceive the idea of teaching and learning writing skills using AI applications at Chadli Bendjedid University?

Q3: To what extent do AI tools influence EFL students' writing skills at Chadli Bendjedid University?

Research Hypotheses

In light of the above raised questions of our research, we hypothesize that:

H1: EFL students at Chadli Bendjedid University have a favorable attitude towards the use of AI tools in teaching and learning writing skills.

H2: EFL teachers at Chadli Bendjedid University have positive perceptions towards the use of AI tools in teaching and learning writing skills.

H3: AI applications have a positive impact on EFL students' writing skills and help them improve their writing abilities.

Aims of the Study

The salient aim of the current study is to shed light on AI as a new technological innovation and its impact on teaching and learning writing skills in the EFL context at Chadli Bendjedid University. More specifically, it seeks to identify the writing difficulties that learners encounter and the potential problems that prevent educators from teaching writing as it should be. Furthermore, this research endeavors to gain insights into teachers and students' attitudes

towards the idea of implementing AI. Hence, the study aims at describing the extent to which AI tools enhance EFL students' writing proficiency and help teachers overcome obstacles by focusing on the possible areas where AI can be incorporated in addition to the guidelines and tips to use such technology effectively.

Significance of the study

Research in the area of AI with reference to higher education is considered to be of a great importance since that technology has not yet taken its intended significance in Algeria as it should be. This study is worth conducting to raise teachers and students' awareness of the role AI has in facilitating the process of teaching and learning writing skills. Moreover, the current study tends to pave the way for teachers and students for the successful implementation of AI writing tools to improve learning outcomes.

Research Design

Method

The current study seeks to shed light on the impact of AI on EFL students' writing skills, so a qualitative research design and a descriptive approach are used to better depict teachers and students' attitudes towards the use of AI writing tools and the extent to which these applications influence the teaching and learning of writing skills.

Participants

The population of this study comprises both students and teachers of the Department of English at Chadli Bendjedid University in which all the levels (first year, second year, third year, master one, and master two), and all the teachers have been selected. The reason behind addressing all the levels is to gain insights into different perceptions of students and teachers regarding the impact of AI writing tools.

Data Gathering Tools

To collect the required data for this study, two research instruments were employed: an online survey and an online questionnaire. The former is administered to EFL students and the latter to EFL teachers to examine the participants' attitudes towards both the writing skill and the use of AI writing tools as well as to determine the extent to which AI applications influence the teaching and learning of this productive skill.

Structure of the Study

The present dissertation consists of five chapters. The first chapter is an introductory chapter that deals with the statement of the problem, research questions and hypotheses, aims and significance of the study. It also highlights the research design and the structure of the dissertation.

The second chapter demonstrates the literature review related to the notions of AI and FL writing, and it is divided into two sections: AI and an overview of the literature on FL writing that provide the theoretical basis of the study.

The third chapter is concerned with the methodology adopted in the research. It presents the research design and the description of the carried survey and questionnaire. Moreover, the fourth chapter is devoted to showcase the research results.

Finally, the last chapter is related to the discussion and interpretation of the results to answer the research questions and prove or disprove the hypotheses. It also entails some pedagogical implications, recommendations, limitations of the study, and suggestions for further research related to the topic of the dissertation.

Conclusion

This chapter serves as the opening of the dissertation in which a reader is provided with the background of the research, its aim, and significance. The problem that this research seeks to shed light on is identified and supported by the research questions and hypotheses. It also contains a brief description of the methodology used to undertake the study along with the structure of this work. In the following chapter, the theoretical background of the study in addition to the main concepts and definitions will be discussed.

Chapter Two

Literature Review on Artificial Intelligence and Writing Skills

Introduction

With the digital transformation and the technological innovations witnessed in recent decades, AI has become deeply rooted in education due to its infinite benefits that make a revolution in the field of didactics. Researchers are insisting on the necessity of AI incorporation as it improves teaching philosophies and learning experiences, and they are attempting to familiarize people with such innovation. Particularly, AI applications have a crucial role in FL teaching/learning, especially when it comes to the writing skill which is considered to be one of the most challenging skills for FL learners. Therefore, this chapter is divided into two main sections that highlight the most important information about AI and FL writing. In the first section, clear definitions of AI will be provided. In addition, this section attempts to shed light on AI in education and in EFL teaching/learning along with AI writing applications. In the second section, insights about the writing skill, its nature, aspects, basic rules, and importance will be introduced. It also intends to focus on the stages of the writing process and the most dominant approaches to teaching writing. The chapter concludes with the common writing difficulties that EFL students face.

Section One: Artificial Intelligence

Definition of Artificial Intelligence

John McCarthy, who is regarded as the father of AI, first used this term in 1955 when he and his colleagues prepared a proposal for the 1956 Dartmouth Summer Research Project on AI (Sumakul et al., 2022). From that time, AI started to emerge as a branch of computer science, and many researchers from different fields including anthropology, biology, philosophy, psychology, and linguistics contributed to the development of AI. Its

interdisciplinary nature makes it challenging to come up with a single definition for this term since different authors provided definitions from several perspectives (Luckin et al., 2016).

According to McCarthy (1955), AI is defined as “the science and engineering of making artificial machines” (as cited in Manning, 2020, para.2). Similarly, Saini (2023) conducted a research about AI and its applications in which she defined it as a branch of computer science that studies the intelligence of machines.

Sheikh et al. (2023), on the other hand, claimed that defining AI is not an easy task, and there is no universally accepted single definition of the concept. They argued that AI can be viewed simply as the use of algorithms, but they later explained that such definition is too broad. The common one they have agreed upon is that “AI is a technology that enables machines to imitate various complex human skills” (Sheikh et al., 2023. p. 15). These human skills include perception, pursuing goals, actions' initiation, and learning from feedback loop. In the same vein, Southgate et al. (2019) consider AI as an interdisciplinary field of computer science that seeks to create machines that mimic human-like traits and capable of carrying out tasks that normally need human intelligence. To achieve this, AI uses computation models and algorithms to analyze data and identify patterns and insights.

Another definition was provided by the United Nations International Children's Emergency Fund (UNICEF) (2021) which is, in turn, derived from a definition agreed by the Organisation for Economic Co-operation and Development (OECD) which stated,

AI refers to machine-based systems that can, given a set of human-defined objectives, make predictions, recommendations, or decisions that influence real or virtual environments. AI systems interact with us and act on our environment, either directly or indirectly. Often, they appear to operate autonomously, and can adapt their behaviour by learning about the context. (p. 16)

Simply put, UNICEF's definition highlights the role humans have in setting AI system's aims and providing data or inputs, and how these systems have varied degrees of autonomy and can produce a variety of outputs, including predictions, suggestions, decisions, and content.

Bearman et al. (2022) conducted a critical literature review on the discourses of AI in higher education in which they have found that only few articles defined AI in a broad and imprecise manner. The only current discussion of definitions was provided by Breines and Gallagher (2020, as cited in Bearman et al., 2022, p. 374) who stated,

Artificial intelligence is often referred to as a technology that can transform “traditional” education where students are passive recipients of information to more dynamic and better forms of education through “highly personalized, scalable, and affordable alternative AI [artificial intelligence] solutions. (p. 1)

Based on the above-mentioned quote, AI is defined from a didactic perspective to explain how it makes a shift in higher education and becomes a supporting tool that revolutionizes traditional education in which learners become active individuals in the teaching and learning process.

Artificial Intelligence in Education (AIEd)

Education is one of the significant sectors that is constantly receiving a high degree of concern as it paves the way for the advancement of human civilization (Mureşan, 2023). The method of learning has always been a dynamic process, changing frequently due to the new technological innovations. We are all acquainted with conventional educational methods that are based on transmitting knowledge to a group of students within the walls of classrooms.

According to the Horizon Report on Teaching and Learning, several trends and emerging technologies and practices are refined and will have an impact on the future of education including, but not limited to, Generative Artificial Intelligence (Generative AI)

(Pelletier et al., 2023). With the public release of ChatGPT by OpenAI, the education sector, which had just begun to recover from the shock of the COVID-19-induced ERT period, must now react to the disruptive impact of AI solutions (Tuomi, 2022).

AI tools are recognized as key technologies that will have a substantial impact on education in the future by the latest Horizon Report on Teaching and Learning, which focuses on AI for Learning Analytics (from an institutional perspective) and AI for Learning Tools (from a student perspective) (Pelletier et al., 2022). Despite the controversy surrounding ChatGPT's public release, since COVID, 25% of educational institutions have effectively implemented some AI technologies. This percentage increased by 10% between 2019 and 2022 with a further 21% and 23% plan to introduce AI in the medium- or long-term, respectively (Education Intelligence Unit, 2023).

Papaspyridis (2020) emphasized the significance of education sector that requires high concern in order to improve its quality. The author further clarified that such goal can be attained through the integration of AI that has many advantages such as offering personalized learning, assessing students, providing feedback, and testing hypotheses just like humans do.

Given the extent to which technology has altered education in the 21st century and the growth in machine intelligence, it is likely that in the near future, AI will be able to manage classrooms as expected of human teachers and build affective relationships with students in addition to acting as peer mentors or classroom assistants. Additionally, the fact that they can outperform human teachers on cognitive tasks at much higher levels implies that their subject knowledge will be superior. All of these point to "classrooms" of the future where fully automated teachers are highly desired and in charge (Sharkey, 2016).

Significant changes to educational institutions and its processes are anticipated as AI is used more frequently in the classroom. Based on the study's findings, Sekeroglu et al. (2019)

suggested that AI might support teachers in providing learners with a more personalized education (as cited in Gocen & Aydemir, 2020). Similarly, The Office of Educational Technology at the US Department (2023) explained the role AI plays in offering adaptivity in learning, and it is stated, "AI may improve a technology's ability to meet students where they are, build on their strengths, and grow their knowledge and skills" (The Office of Educational Technology, 2023, p. 18).

Pedro et al. (2019) highlighted a dual-teacher model with AI in terms of individualized education: teachers spend a lot of time on administrative and routine tasks, like repeating things over and over again and answering questions about a variety of topics. However, by having AI-supported assistants (teacher-assistants) in the classroom, teachers will be able to spend less time on these routine procedures and more time guiding students and communicating one-on-one. Pedro et al. (2019) further claimed that People with disabilities, refugees, out-of-school youth, and those living in remote areas could all benefit from having access to suitable and improved learning options thanks to AI.

Harry (2023) explained the role AI plays in education by making learning more efficient, personalized, and engaging. With the use of AI, teachers may better tailor the educational experience for each student, enabling them to learn at their own pace and in accordance with their unique needs and skills. In the same vein, Mureşan (2023) mentioned that AI enhances education by enabling personalized learning, offering immediate feedback and increasing the assessment process efficiency. Hence, it can be incorporated into online learning platforms so that activities and content can be tailored to each student's abilities.

Additionally, AI has the ability to automate repetitive processes like data analysis and grading; as a result, teachers and students will avoid time and effort consuming and focus on more important tasks. Moreover, AI can enhance student engagement by providing dynamic and captivating learning experiences. For instance, chatbots and virtual assistants have the

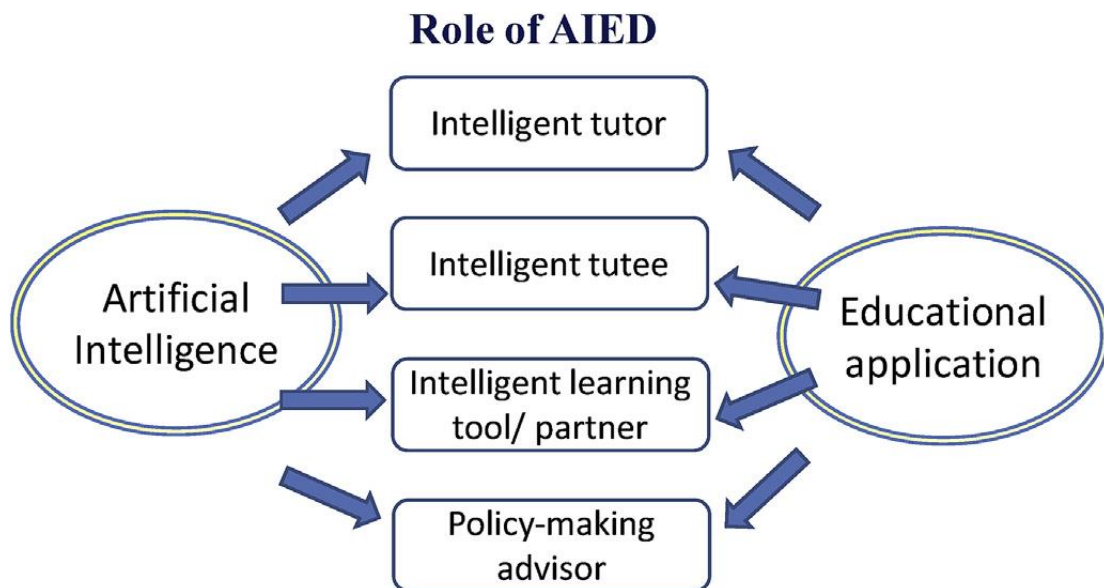
potential to make learning interactive and enjoyable, while adaptive learning technology can maintain students' engagement by tailoring the material to their level of comprehension (Harry, 2023).

Luckin et al. (2016) argued that AIED is so beneficial to the extent that it can provide intelligent personal tutors for every learner. This can be achieved via Intelligent Tutoring Systems (ITSs) that “use AI techniques to simulate one-to-one human tutoring, delivering learning activities best matched to a learner’s cognitive needs and providing targeted and timely feedback, all without an individual teacher having to be present” (Luckin et al., 2016, p. 24).

We are in no doubt that teachers need to be central agents in the next phase of AIED. In one sense this is obvious – it is teachers who will be the orchestrators of when, and how, to use these AIED tools. In turn, the AIED tools, and the data driven insights that these tools provide, will empower teachers to decide how best to marshal the various resources at their disposal. (Luckin et al., 2016, p. 31)

The integration of AI-powered technologies will change the teacher's role; however, this does not mean that they will replace teachers completely. AIED will act as an assistant to help instructors perform teaching tasks more efficiently.

Hwang et al. (2020) summarized the roles of AI in education into four main categories: intelligent tutor, intelligent tutee, intelligent learning tool/partner and policy-making advisor, as it is shown in the following figure:

Figure 1*Framework for the Roles of AIED*

Note. Reproduced from “Vision, challenges, roles and research issues of artificial intelligence in education”, by G. J. Hwang, H. Xie, B. W. Wah, and D. Gasevic, 2020, *computers and Education: Artificial Intelligence*, 1, p. 2.

Intelligent Tutor

This might be the most extensive AIED category with several applications including ITSs, adaptive/personalized learning systems and recommendation systems.

Intelligent Tutee

Research in this area is uncommon because most AI-based educational systems concentrate on assisting students rather than providing them with opportunities to play the role of a tutor or advisor. However, involving students in situations where they have to assist others in understanding difficult notions (i.e., become AI tutees) could be a great way to level up their higher order thinking skills and knowledge (Hwang et al., 2020).

Intelligent Learning Tool/Partner

The availability of an intelligent learning tool or partner is crucial from the constructivism and student-centered learning perspective. With the use of the gadget, students will be able to gather and evaluate data in an efficient and effective manner, focusing more on higher-order thinking skills like inference and prediction as opposed to simple tasks. Some applications can even intelligently evaluate and present data to encourage students to think critically and identify important implications (Hwang et al., 2020).

Policy-making Advisor

Effective educational policies can be developed and assessed by policymakers with the use of AI technologies, which enable them to analyze clearly trends and issues in educational settings from both macro and micro perspectives (Siemens et al., 2013).

Artificial Intelligence in EFL Teaching/Learning

The history of AI in ELT originally emerged in the 1970s and 1980s when computer technology was first utilized to enhance language instruction. The goal at the time was to create a grammar-checking machine (Schank, 1987). Subsequently, emphasis was placed on creating language learning software that could help students practice their grammar and vocabulary. In the 1990s and 2000s, improvements in AI brought about the introduction of Natural Language Processing (NLP) and the creation of increasingly advanced language learning software that could communicate with students in a human-like manner (Rukiati et al., 2023).

For the time being, Language teaching and learning is becoming more efficient, accessible, and engaging thanks to the growing use of AI in ELT. ChatGPT, Coursera, Duolingo, Elsa, Grammarly are among the AI-powered language learning tools and platforms that are commonly used by learners and teachers (Rukiati et al., 2023).

AI has shown to be a promising technology that can be used to enhance ELT in a number of ways. According to Huang et al. (2023), AI has the ability to improve personalized learning, providing real-time feedback, interactive activities, facilitate conversation practice, automate assessment tasks, expand accessibility, and provide adaptive learning (as cited in Rukiati et al., 2023). For example, AI-powered applications and platforms can provide a variety of engaging games and activities that keep students motivated and engaged while practicing a variety of language skills. Besides, AI can be used to develop virtual tutors that converse with students and offer them immediate feedback on their production (Rukiati et al., 2023).

Rukiati et al. (2023) shed light on the crucial role AI applications play in increasing students' autonomy in learning English, stating that AI “empowers students to take control of their learning journey and develop their English language proficiency independently” (p. 33). Another AI contribution in ELT that is worth mentioning is its ability to automate assessment tasks such as tests and assignments grading, giving teachers more time to concentrate on other aspects of teaching (Rukiati et al., 2023).

Edmett et al. (2023) explained the use of AI in ELT from a psychological perspective, claiming that AI mitigates anxiety and promotes self-regulation; hence, learners will be able to control their emotions, behaviours and thoughts to accomplish their goals. Additionally, Wang (2019) highlighted the relationship between AI and English teaching in the sense that AI can create an interactive learning atmosphere where English learning becomes stereoscopic and visual by the connection and logical analysis of information such as graphics, sound, and text in an intelligent system.

AI Writing Applications in EFL Teaching/Learning

Teachers all over the world are leaning towards the integration of technological tools in their teaching practices including AI applications that have been incorporated into educational settings. This has resulted in noticeable improvements in the teaching and learning process in general, and in teaching and learning the writing skill in particular (Tran, 2024).

AI Applications in Teaching Writing

The teaching of writing witnessed an incredible shift and development in the current digital era due to the prevalence of several technological innovations (Marzuki et al., 2023). Haleem et al. (2022) discussed how this transition is brought about because of the growing integration of digital utilities in the educational setting, which effectively turns pen-and-paper methods into significantly more innovative and dynamic learning experiences. There are many AI tools used in teaching writing, which are summarized in table 1:

Table 1

AI Applications in Teaching Writing

AI Writing Tools Used for	Function	Examples
Grading and Assessment	<ul style="list-style-type: none"> - Assist in automating the grading process; hence, reduce the workload for teachers and save time to provide students with instant feedback on their essays and written assignments (Owan et al., 2023). This can be done via supporting the AI tool with manually-graded samples so that it can learn and apply the grading scheme to the remaining ones (Lee, 2023). - The platform facilitates the design of flexible rubrics that can be modified even after grading has started and that are automatically applied to previously assessed papers (Lee, 2023). 	Gradescope, Turnitin, e-rater (Lee, 2023; Owan et al., 2023).
Plagiarism Detection	<ul style="list-style-type: none"> - Detect whether a piece of writing is generated by a human or an AI application, and identify any copied content (Lee, 2023; Owan et al., 2023). 	GPTZero, Copyscape, Dupllichecker, Originality AI (Hang,

		2023; Lee, 2023; Owan et al., 2023; Selim, 2024).
Coursework Preparation/ Content Creation	<ul style="list-style-type: none"> - Assist teachers in planning lessons and designing writing assignments (Hang, 2023). - Suggest various learning resources to create and vary learning materials and activities in writing classes (Hang, 2023). - Offer several writing models for various essay genres (Hang, 2023). 	ChatGPT, Gamma, Coursebox (Lee, 2023).

AI Applications in Learning Writing

AI-powered writing tools offer a vast array of uses such as text translation, spelling correction, text analysis, text rewriting, summarization, and plagiarism detection. These tools can easily and quickly provide comprehensive recommendations and suggestions for changing text components (Selim, 2024). The following table illustrates AI tools utilized in learning writing:

Table 2

AI Applications in Learning Writing

AI Writing Tools Used for	Function	Examples
Designing Digital Writing Portfolios	- Help students collect their pieces of writing to receive feedback from the teacher and the peers (Owan et al., 2023).	WordPress, Seesaw (Owan et al., 2023).
Content Generation	- Recommend reading materials and writing samples that can serve as an inspiration for writing assignments and help learners generate ideas (Hang, 2023).	ChatGPT, Copy AI, Magic Write (Lee, 2023; Selim, 2024).
Proofreading	- Provide personalized feedback on learners' written products for further revision and improvements (Hang, 2023).	Grammarly, Wordtune (Hang, 2023).

	- Facilitate the editing process by detecting errors in grammar, spelling, organization, language use, tone and writing styles (Hang, 2023).	
Research	<ul style="list-style-type: none">- Facilitate the review of literature by suggesting relevant sources (Lee, 2023; Selim, 2024).- Generate citations, paraphrase and summarize sentences and paragraphs (Lee, 2023; Selim, 2024).	Scispace, Elicit, QuillBot, Jenni AI, Paraphraser.io (Lee, 2023; Selim, 2024).

Section Two: An Overview of the Literature on Foreign Language Writing

Definition of Writing

Writing is one of the most challenging skills for L1 and L2 writers (Dorothy & Carlos, 2005), and it has been defined by many scholars. In its broadest sense, writing is made up of words that are put together in a certain way to form sentences, which are then put together to form paragraphs (Creme & Lea, 2003).

Additionally, Coulmas (1999) defined a writing system as “a set of visible or tactile signs used to represent units of language systematically, with the purpose of recording messages which can be retrieved by everyone who knows the language in question and the rules by which its units are encoded in the writing system” (as cited in Hossain, 2015, p.24).

Harmer (2003) defined writing according to a sequence of contrasts. It is both a physical and a mental act. At the most basic level, writing is the physical act of committing words or ideas to some medium, be it an email message typed into a computer or hieroglyphics written onto parchment. On the other hand, writing is the mental activity of creating ideas, considering how to convey them and arranging them into sentences and paragraphs that make sense to the reader.

Its purpose is both to impress and express. Writers usually have two masters: readers who require specific ideas to be expressed, writers themselves and their own desire to convey thoughts or emotions. Authors then need to decide which form works best for their work. Writing is both a process and a product. The writer organizes, imagines, drafts, reads and revises; the fact that makes writing a process that is frequently cyclical. Finally, whether it is a teacher or a larger audience, what the reader sees is a product (Harmer, 2003).

Based on the above definitions, we can summarize that writing, which is regarded as the graphic representation of the spoken language and a medium of communicating information to

others through written words, is not an easy task to be performed by FL learners, and it requires a deliberate practice.

The Nature of Writing

Writing is considered as one of the productive skills since it is based on producing rather than receiving an input. Robinson (2004) highlighted the mental aspect of writing when she claimed that this task is not only a natural spontaneous process but also a mental effort that requires ongoing practice, significant instruction and training. Furthermore, the author mentioned that mastering this talent necessitates the writer to engage in a number of intricate mental processes, including idea generation, planning, goal-setting, monitoring, and evaluation of the work in progress (as cited in Benidir, 2015).

In the same vein, Flower and Hayes (2004) explained the nature of writing from a cognitive perspective, and they stated, "Writing is best understood as a set of distinctive thinking processes which writers orchestrate or organize during the act of composing. These processes have a hierarchical, highly embedded organization in which any given process can be embedded within any other" (p. 366). That is to say, writing is considered as a set of cognitive processes that writers go through, and each process comprises sub-processes. This kind of embedding, where a process is embedded inside a larger version of itself, is referred to as recursion (Flower & Hayes, 2004).

Writing is considered as both an individual and a social act as Hyland (2003) put it, "While every act of writing is in a sense both personal and individual, it is also international and social, expressing a culturally recognized purpose, reflecting particular kind of relationship and acknowledging an engagement in a given community" (p. 27). This means that writing is not merely a set of distinctive thinking processes, but rather a public activity because when we

write, we are intending a particular audience whose mental representations should be taken into account during the act of composing.

Pedagogy-wise, since students must take written exams and jet down notes, writing is a crucial component of language instruction; nevertheless, it seems that writing has only been utilized as a tool to learn grammar and vocabulary. However, educators and methodologists have re-examined writing in FL classrooms and recognized the significance of writing as a fundamental skill for all students whether they are native or FL speakers (Harmer, 2004).

To cut it short, the nature of writing can be explained from different perspectives as it is mentioned above the fact that makes it a complex, cognitive, social, and cultural task that is crucial for all language users.

The Importance of Writing

In the modern world, the written language has a significant social and educational purpose (Urbanova & Oakland, 2002, as cited in Klimova, 2012), and it should receive equal importance as speaking does. Walsh (2010) listed the different tasks that are based on writing by stating,

Writing is important because it is used extensively in higher education and in the workplace. If students do not know how to express themselves in writing, they will not be able to communicate well with professors, employers, peers, or just about anyone else. Much of professional communication is done in writing: proposals, memos, reports, applications, preliminary interviews, e-mails, and more are part of the daily life of a college student or successful graduate (as cited in Klimova, 2012, p. 9).

According to Alfaki (2015), writing is frequently done in English language classrooms as a teaching tool; for example, to help students remember new language items or to reinforce the acquisition of new vocabulary and structures. In this sense, writing helps learners track their

development, receive feedback from their teachers and help them recognize problems they may face.

Khazrouni (2019) also asserted that the development of English writing skills is crucial for EFL students to acquire a variety of language learning abilities, including the ability to analyse, argue and think critically. Additionally, proficiency in English writing motivates students to use their knowledge of micro linguistics, that is, morphology, syntax, and semantics that they have already acquired in English classes.

Bhowmik (2021) emphasized the importance of mastering written communication skills in order to participate as competent communicators in academic or professional contexts. The stakes for developing these skills are high when it comes to EFL contexts, as many learners aim to pursue higher education abroad, primarily in English-speaking nations, while others set themselves the professional career goal of working for multinational corporations. Proficiency in written communication is essential in both cases (Rinnert & Kobayashi, 2009, as cited in Bhowmik, 2021).

Aspects of the Writing Skill

Spratt et al. (2005) explained that writing is based on using a set of criteria which are called *subskills*, and they are associated with two main aspects: accuracy and communicating ideas. The former encompasses “spelling correctly, forming letters correctly, joining letters together correctly, writing legibly, punctuating correctly, using correct layouts, choosing the right vocabulary, using grammar correctly, joining sentences correctly, and correctly using paragraphs” (Spratt et al., 2005, p. 37). The latter is based on employing a suitable style and register, arranging ideas in a useful manner, making use of the characteristics typical of the text type we are writing, linking words and sentences clearly, and using the right functions to convey meaning (Spratt et al., 2005).

According to Brown (2001, 2004), successful writing should be based on the following aspects:

- a. **Content:** Brown (2001) mentioned that content deals with “thesis statement, related ideas, development of ideas through personal experience, illustration, facts and opinions, use of description, cause/effect, and comparison/contrast” (p. 357).
- b. **Organization:** is about the effectiveness of introduction, logical sequence of ideas, conclusion, and the length of the writing.
- c. **Grammar:** is the music of our thoughts that has a crucial role in writing. It is not just about syntax but also about word formation, which allows words to take on diverse forms and convey different meanings (Harmer, 2007).
- d. **Vocabulary:** Wilkins (1972) stated, “Without grammar very little can be conveyed, without vocabulary nothing can be conveyed” (p. 111), which means that vocabulary is an essential component in writing to communicate meaning by selecting the appropriate diction.
- e. **Mechanics:** refers to the rules of the written language that entails spelling, punctuation, capitalization, citation of references, neatness, and appropriateness.
- f. **Discourse:** according to Brown (2001), it encompasses topic sentences, paragraph unity, transitions, cohesion, discourse markers...etc.
- g. **Syntax:** the study of arrangements of words into phrases, clauses and sentences, or syntactical constructions.

All in all, the aforementioned aspects are very important in FL writing and should be taken into account in order to enhance students' writing abilities.

The Basic Rules of Writing

Since writing is a means of conveying meaning, it should be done effectively. To attain such goal, FL learners should respect a set of criteria including clarity, simplicity and brevity, coherence, and cohesion.

Clarity

Quintilian stated, "One should not aim at being possible to understand, but at being impossible to misunderstand" (as cited in Lucas, 1955). In this respect, it is crucial to communicate ideas clearly without leaving any room for ambiguity to ensure that readers will understand the intended message (Starkey, 2004). To do so, Starkey (2004) listed five guidelines that will clarify writing:

1. Eliminate ambiguity by avoiding using words or phrases that might be interpreted in multiple ways.
2. Use modifiers such as powerful and specific adjectives and adverbs.
3. Be concise by using necessary words and phrases and the active voice to avoid wordiness and redundancy.
4. Avoid unnecessary repetition as it will lead to sloppy writing.
5. Make good use of pronouns that should not be unclear, useless or too far from the antecedent.

Brevity and Simplicity

Brevity and simplicity are two essential basic rules that should be taken into consideration during the writing process. Brevity is to be concise in conveying information without mentioning superfluous ideas because this will distract the reader from the gist of the written product (Huguet et al., 2018). Simplicity is based on using clear and understandable language to avoid confusion and obscurity because there are some writers who believe that a

successful piece of writing is measured by the sophisticated vocabulary they will use (Huguet et al., 2018).

Coherence and Cohesion

Coherence and cohesion are two major aspects that go hand in hand in writing. According to Langan (2010), “the supporting ideas and sentences in a composition must be organized in a consistent way so that they cohere, or stick together” (p.76). That is to say, coherence is all about making ideas interconnected and interwoven by creating a smooth transition from one sentence to another. Using transitions and other linking phrases as signposts along with a clear style of organization (such as time order or emphatic order) are key strategies for tying ideas together (Langan, 2010). In the same vein, Murray and Hughes (2008) stated,

Coherence, then, has to do with arranging your ideas in a way that makes them most easily understood by the reader. A good writer ‘sticks’ their ideas together so that they act as links in a chain, each link connecting the one before it with the one after. If any links are missing, the connections become unclear and the argument structure breaks down. (p. 45)

Cohesion, on the other hand, refers to the use of cohesive devices (CDs) to connect sentences and clauses (Halliday & Hasan, 1976, as cited in Waller, 2015). In other words, a cohesive text is characterized by grammatical and lexical connections between sentences and paragraphs. Halliday and Hasan (1976) classified cohesive devices into five categories (as cited in Wahby, 2014):

1. **Reference:** i.e., pronouns, demonstratives, and comparatives.
2. **Substitution:** nominal substitution, verbal substitution, and clausal substitution.
3. **Ellipsis:** nominal ellipsis, verbal ellipsis, and clausal ellipsis.
4. **Conjunction:** additive, adversative, clausal, temporal, and continuative.

5. **Lexical Cohesion:** Reiteration and Collocation

The Process of Writing

In the past ten years, researchers that have studied writing in both first and second language have tackled a number of issues related to this skill. One crucial point that unites them all is that writing is a process. In fact, it is common for writers to discover exactly what they want to write about only after putting their ideas down on paper, the reason that makes writing a process of discovery that involves several simultaneous steps (Langan, 2010).

Additionally, Connelly (2010) stated, “writing is often a recursive, or repeated process” (p. 11), i.e., the writer can go back and forth during the act of composing where they can revise one of the stages for further refinement and editing.

The process of writing includes several stages, mainly pre-writing, organizing, drafting, revising, editing, and publishing stages (Laksmi, 2006; Oshima & Hogue, 2006).

Pre-writing Stage

As its name suggests, pre-writing stage is the first step to undertake before you start writing. It is based on two major sub-steps which are choosing and narrowing a topic and generating ideas (Oshima & Hogue, 2006). Laksmi (2006) explained in details this stage by comparing it to a “warm-up” activity at which writers check their background knowledge and decide which way to take their ideas. Some pre-writing techniques include brainstorming, listing, freewriting, clustering, mapping etc. (Oshima & Hogue, 2006).

More than that, Connelly (2010) asserted that writing is based entirely on the context, and he stated, “when you write, ask yourself four key questions about context: what is your goal, who is the reader, what is the discipline or situation, and what is expected in the document” (p. 5). It means that the writer should first determine the context that will shape the piece of

writing, the reason behind writing as it will affect the organization and the language to be used and then decide to whom it is addressed as this will dictate on them what to say and how to say it appropriately.

Organizing Stage

In this stage, the writer organizes the ideas into an outline that is going to be helpful in deciding which information to include or exclude and in what order ideas will be arranged. Making sub-lists can facilitate this stage by omitting items that do not serve the topic of writing (Oshima & Hogue, 2006).

Drafting Stage

The third step in the writing process is to start writing the rough draft and put ideas down on paper. During this stage, primacy is given to content rather than mechanics, i.e., the writer is not supposed to focus on grammar rules, spelling, punctuation, or capitalization as these aspects will be tackled in a subsequent stage (Oshima & Hogue, 2006). In this respect, Galko (2002) stated, "As you draft, you do not need to worry about grammar, spelling, or punctuation. You will have time to refine these mechanical parts of your paper at a later stage" (p. 49). Throughout the drafting stage, the writer is free to remove or add ideas that may not be mentioned in the outline as long as they are relevant to the topic (Oshima & Hogue, 2006).

Revising Stage

According to Oshima and Hogue (2006), this stage is also known as polishing stage where the writer refines the piece of writing in terms of content and organization as they stated "do not try to correct grammar, sentence structure, spelling, or punctuation; this is proofreading, which you will do later" (p. 272). This stage is very important because the writer will have an opportunity to improve their writing by changing, adding, or removing ideas (Oshima & Hogue, 2006).

Editing Stage

This stage is closely related to the previous one, except that editing has to do more with mechanics rather than content and organization (Galko, 2002; Oshima & Hogue, 2006). It is here where the writer can proofread the written product for possible errors in grammar, spelling, punctuation, capitalization, and sentence structure (Oshima & Hogue, 2006).

Publishing Stage

Publication is the final stage of the writing process in which the written product is shared to the prospective audience. Hale (2009) stated that the act of publishing a work serves the dual purposes of allowing readers to access it and giving the author a sense of pride and achievement upon viewing their creation in its final state (as cited in Asriati & Maharida, 2013).

Each of the aforementioned stages is concerned with a particular aspect of writing; hence, they are very crucial and should be taken into account by FL learners to end up with an effective writing.

Approaches to Teaching Writing

Writing is a complex process that represents a serious problem in EFL context for both teachers and learners. As a result, a number of approaches have developed to facilitate teaching this productive skill including, but not limited to, the product approach, the process approach, and the genre approach that are supposed to be the most popular ones (Kumar, 2020).

The Product Approach

Years ago, teaching writing was based on the conventional grammar-focus paradigm represented in the product approach (Nemouchi, 2019). White (1978) pointed that the main focus of this approach is the final product, i.e., what you achieve rather than the process of writing, i.e., how you achieve it, and he explained this point by saying,

Not only does the model come first in the teaching sequence, it also shows a finished text. In other words, the focus right from the start is on the product, which is, of course, someone else's writing. What the model does not demonstrate is how the original writer arrived at that particular product. In other words, it gives no indication of process. (as cited in Nemouchi, 2019, p.51)

The essence of the product approach is imitation as teachers provide a model text and learners are required to mimic that model after analysing its features including structures of grammar, syntax, mechanics, organization, and rhetorical patterns (White, 1988, as cited in Hamadouche, 2010).

According to Steele (2004), there are four stages that characterized the product approach: familiarization, controlled writing, guided writing, and free writing. The goal of the first stage is to get learners familiar with the model text and highlight its characteristics. The next two stages are based on a deliberate practice of the highlighted principles and the organization of ideas to enable learners write freely in the last stage (as cited in Nemouchi, 2019).

The Process Approach

In contrast to the conventional product-oriented approach of teaching writing, the process approach has been promoted and is widely used by English teachers in their classroom teaching of writing (Sun & Feng, 2009). The authors consider writing as a process; hence, it focuses on the different stages that learners go through while writing rather than on the final result as Sun and Feng (2009) defined it,

Process approach to teaching writing should be a process including several stages, namely prewriting or invention activities (brainstorming, group discussion, assessing ideas,); drafting; seeking feedback from peers or the instructor; revising on the whole-

text level (looking at the overall focus, reconsidering organization, deciding whether there is enough evidence, etc.); followed by revising at the paragraph or sentence level, proofreading, and “publishing” the final text. In essence, process approach to teaching writing focuses on the writing process rather than the final product. (p. 150)

Badger and White (2000) identified four main stages of the writing process: pre-writing, drafting, revising, and editing and that this process is cyclical, i.e., recursive in which writers can move forward or backward for editing or revision. As opposed to the product approach, the process approach focuses on developing learners' linguistic skills such as developing or planning instead of the linguistic knowledge (Kumar, 2020). In addition to that, it encourages creative thinking and writing by providing learners with opportunities to review, clarify, and reorganize what they have written (Belferragui & Aidi, 2021).

The Genre Approach

As the name indicates, this approach focuses on teaching specific genres that students need to grasp in order to perform correctly in various situations. This may include both the written products' content and context in which they were produced (Nemouchi, 2019). The core tenet of the genre-based approach is that language has a functional purpose, allowing us to accomplish specific objectives. Furthermore, language is a contextual tool for communication; it cannot be understood outside its specific social and cultural settings (Hamadouche, 2010).

Dirgeyasa (2016) mentioned that genre approach involves a combination of process and product approaches. It is like a single coin with two sides, i.e., it can be both an approach to teaching writing and a product of the writing itself. As an approach, genre describes the writing process and the steps that students or teachers must follow. However, genre as a product demonstrates its unique writing qualities in terms organization, physical design or layout, and communicative purpose.

Hyland (2007) proposed five steps for a genre-based writing approach: setting the context, modelling, joint construction, independent construction, and comparing. The goal of the context-setting stage is to determine a genre's communicative purpose. During the modelling phase, teachers can assist students in identifying the linguistic characteristics of a sample text and the author's intentions. Third, the joint construction stage aims at highlighting the textual features that students examined in the preceding phase. At the fourth stage, students work with teachers to compose essays; ultimately, at the comparing stage, they can compare the communicative goal and linguistic traits of the genre they have learnt to those of other writing genres in order to identify similarities and differences (as cited in Bui & Pham, 2021).

EFL Students' Writing Difficulties

The majority of students face difficulties in learning a FL, especially when it comes to writing, which is believed to be a challenging task both in a FL and in a mother tongue (Astuti et al., 2020). The term *writing difficulties* describes the areas in which learners struggle with one or more writing-related elements that will impede their ability to generate pieces of writing (Ben Aissa, 2018). The main issues that EFL students may encounter are linked to grammar, spelling, punctuation, vocabulary, and native language interference (Seely, 1998).

Grammar

According to Cobbett (1984), grammar is made up of guidelines and rules that assist learners to utilize words and combine them to create meaning (as cited in Rezwana et al., 2022). For the majority of EFL learners, learning English grammar is the most challenging aspect of the language.

Seely (1998) found that EFL students believe that grammar is hard or impossible to learn due to the way it has been taught at schools. Moreover, he asserted that students consistently struggle with sentence structure by making grammatical errors or incomplete

sentences. The verb, object, adverbials, coordinating conjunction, and word order are the main issues that may hinder learners' writing success (Seely, 1998), which are discussed below:

- **The Verb:** subject-verb agreement errors are a common problem for EFL learners, especially the omission of the third person marker "s" that is thought to be the most frequent grammatical error (Sandanbråten, 2020).
- **The Object:** The issue that most students have with objects is when pronouns shift depending on whether a word is the object or the subject of the sentence.
- **Adverbials:** Students may encounter the challenge of determining the appropriate placement for adverbials since they are flexible, and there is no fixed rule where they can be put within sentences.
- **Coordinating Conjunctions:** students face a difficulty in using coordinating conjunctions properly, and they are unaware of their semantic functions; hence, a mismatch between sentences may occur.
- **Word Order:** Students should be aware that the word order of sentences conveys its meaning.

Spelling

According to Fellag (2002), learners find English spelling challenging since there is often a discrepancy between a word's pronunciation and the way it is spelt. Another spelling problem is that some letters in English are silent, or you can find one sound with multiple spellings.

The primary cause of spelling errors is irregularities of the English pronunciation. For example, in the words he and she, for instance, the vowel /e/ is pronounced as /i/. Similarly, in the words come and move, /o/ is spelled as /a/ or /oo/ (Smith, 1973, as cited in Ben Aissa, 2018).

Punctuation

Many EFL students' little concern about punctuation has a significant impact on the written text's communicated meaning. One of the main problems that they encounter is the misplacement of punctuation. For instance, they are unable to use a colon to divide two related clauses or a hyphen to link two words to create compound ones (Mansouri, 2016). Besides, some learners tend to exaggerate in using full stops and commas even when they are not required, or they will end up in run-on sentences due to the misuse of punctuation marks (Rahmanita, 2023).

Vocabulary

Al-Zahrani (2011) claimed that one of the biggest issues facing EFL teachers and students is vocabulary teaching and learning. The majority of EFL students find it challenging to communicate in English due to their small vocabulary, and they struggle to express their thoughts freely. Similarly, Lin (2002) added, "there are several problems facing learning English vocabulary. These include forgetting new vocabulary because learners do not use them in their daily life since they are not surrounded by English speakers" (p.65, as cited in Al-Zahrani, 2011, p.5).

Native Language Interference

Language transfer or language interference has been a continuous issue in FL for a long time. According to Phuket and Bidin (2016), "the interference of the native language occurs when EFL speakers or writers apply the linguistic elements, structures or rules of their native language in the production of the target language" (p. 26). That is to say, when EFL students write sentences or paragraphs, they consider their native language rather than the target language, and they will apply conventions from the mother tongue to FL.

It is widely recognized that L1 has a great influence on FL writing, and this is evident in the written products of EFL students who are unable to write in English without using their mother tongue. As a result, learners will encounter significant challenges in acquiring the writing skill due to the differences between Arabic and English language in different aspects including, but not limited to, the cultural aspect. Moreover, since every language has its own set of principles, writing rules vary from one language to another and this may lead to interference that makes learners write poorly in English (Kheddadi, 2017).

Research findings reveal that Arab students are more likely to develop their thoughts and prepare them in their mother tongue before using English, and they transfer the writing style and mode (Khuwaileh & Shoumali 2000, as cited in Abdelmalek, 2017).

Grammar, spelling, punctuation, vocabulary, and native language interference are among the major problems that have a significant influence on EFL writing that teachers should take into account to remedy them so they will not affect the learners' writing proficiency.

Conclusion

This chapter has dealt with the review of literature in which we have shed light on AI and the writing skill as two main concepts in the study. It first introduced AI definition along with its significance in education in general and in EFL context in particular. Moreover, a set of AI writing applications that can be implemented in teaching and learning were highlighted. The second section provided background information about writing, most notably the difficulties that EFL learners encounter in writing. In the next chapter, the research design and methodology of the study will be explained.

Chapter Three

Method

Introduction

In order to identify EFL teachers and students' attitudes towards AI writing applications and their impact on teaching/learning writing skills, this chapter is devoted to the research design and methodology used in the current study. An online survey and questionnaire were used to collect the necessary data, which will be described in details throughout this chapter along with the targeted population of the investigation.

Research Design

Method

To address the research questions, a qualitative research design is used in order to better undertake this study because the researchers have collected and analysed non-numerical data to gain an in-depth understanding of the participants' perceptions and experiences regarding the main topic of the dissertation. Qualitative research is the richness of the description of the phenomenon under study, and it does not need any calculation of frequency, means, standard deviation or other types of statistical procedures. As such, a descriptive approach is employed to identify EFL teachers and students' attitudes towards AI integration in teaching/learning writing and to highlight the impact of AI tools on teaching/learning writing skills. The findings are analysed both qualitatively and quantitatively, and they are separated into two categories based on the study instruments: students' survey and teachers' questionnaire.

Participants

The targeted population of the current research comprises EFL students of all levels from first year to master two students (N=366) and EFL teachers (N=24) in which 17 teachers are permanent and seven are associates at Chadli Bendjedid University El-Tarf.

The main reason behind addressing the whole population is to gain insights into different perceptions of students and teachers regarding the impact of AI in teaching/learning writing. Stated differently, the variety of learners' writing proficiency will help determine how each level perceives and uses AI tools. Moreover, not all the teachers are specialized in teaching written expression module, so restricting the selection of the sample to include only this category may not be appropriate for ensuring the reliability and validity of the results.

Data Gathering Tools

Two research instruments are used to collect the required data for this study: an online survey for students and an online questionnaire for teachers. The aim behind the choice of these tools is to explore the participants' opinions about the idea of incorporating AI in teaching/learning writing skills and the extent to which these applications influence this process. Besides, the researchers opted for electronic data collection method for the sake of three reasons: some participants were not available like the case of master two students who do not have classes in the second semester; the majority of students did not attend during the month of Ramadan; some teachers were having pedagogical and teaching responsibilities. The online instruments will give more time for the participants to answer the questions carefully.

Description of Students' Survey

The present survey (See Appendix A) endeavours to elicit information about EFL students' attitudes towards the writing skill and AI and the impact of AI applications on teaching/learning this productive skill. It comprises 21 questions classified into two sections.

Different types of questions are used including closed-ended questions where students answer by “yes” or “no”, or by ticking one answer from a set of options as well as to provide justifications whenever necessary, multiple choice questions along with open-ended questions.

Section One: EFL Students' Attitudes towards Writing Skills (Q1-Q6)

This section consists of six questions that aim to provide information about students' attitudes towards writing skills. The first three questions (1), (2) and (3) are about learners' level of writing proficiency, their practice frequency of this skill, and their perceptions about written expression module with justifications. The last three questions (4), (5) and (6) are set to determine students' opinions about the complexity of the writing skill and the areas where they find difficulties. Because the goal of the present section is simply to figure out EFL learners' writing problems that can be resolved with AI assistance, it does not have as many questions as the one that follows.

Section Two: EFL Students' Attitudes towards AI Use in Teaching and Learning Writing Skills (Q7-Q21)

This section consists of 15 questions that seek to elicit information about students' attitudes towards AI use in teaching and learning writing skills. The first three questions (7), (8) and (9) are administered to see whether students are familiar with the concept of AI writing applications and if they use them in their learning. They are also asked to mention some AI-based tools they rely on while writing.

Question (10) is addressed to investigate students' attitudes towards the idea of integrating AI tools in teaching/learning writing skills with explanations. Then, in questions (11) and (12), participants are asked if their teachers encourage them to use AI tools in doing writing assignments and whether they prefer their teachers to integrate them in written expression sessions in addition to providing justifications for their responses.

After that, questions (13) and (14) are put to identify students' degree of confidence in the ability of AI tools to support their writing performance and their opinions about the effectiveness of these applications by justifying their stances.

In questions (15) and (16), students are required to choose among AI writing tools' features that they find helpful in facilitating the writing process; in addition, they are asked to choose the aspects that they focus on while using these applications. They have the possibility to choose more than one answer if necessary.

For questions (17) and (18), respondents are required to provide their opinions about two main ideas. The former is designed to examine the effect of AI writing applications on students' motivation throughout the writing process by using a Likert scale, and the latter is about the ability of these tools to replace human editors and proofreaders with explanations given by students.

In question (19), students are asked whether they noticed any improvements in their writing skills after the use of AI applications, and they are supposed to mention them if they answer "yes".

The survey ends with two concluding questions (20) and (21) in which students are required to assess their experience with AI tools in developing writing compositions and if they recommend these applications to other EFL learners along with an explanation if the answer is "yes".

Description of Teachers' Questionnaire

This questionnaire (See Appendix B) is made up of 24 questions classified into two sections that seek to give detailed insights into EFL teachers' attitudes towards the writing skill and AI and the impact of AI applications on teaching/learning this productive skill. Different types of questions are used including closed-ended questions where teachers answer by "yes"

or “no”, or by ticking one answer from a set of options as well as to provide justifications whenever necessary, multiple choice questions along with open-ended questions.

Section One: EFL Teachers' Attitudes towards Writing Skills (Q1-Q8)

This section consists of eight questions that aim to provide information about teachers' attitudes towards writing skills. The researchers used some questions that are similar to those in students' survey to collect data from the teachers' perspective and make a comparison with students' responses so that the discussion of the results will be accurate.

In the first four questions (1), (2), (3) and (4), teachers are asked whether their students enjoy written expression sessions and if they find a difficulty in writing. Besides, these questions aim at providing information about the aspects that learners have problems with along with the difficult stages of the writing process.

Questions (5) and (6) are set to determine teachers' opinions about the complexity of teaching writing, the difficulties they face, and their assistance to students when writing.

Questions (7) and (8) are designed to shed light on teachers' opinions about the convenience of the current methods of teaching writing and the difficulty of assessing written products along with justifications for their answers.

Section Two: EFL Teachers' Attitudes towards AI Use in Teaching and Learning Writing Skills (Q9-Q24)

This section consists of 16 questions that seek to elicit information about teachers' attitudes towards AI use in teaching/learning writing skills. The first four questions (9), (10), (11) and (12) are administered to investigate teachers' awareness, knowledge and frequency of using AI-based tools. They are also asked to mention some AI-based tools they rely on while teaching writing.

Then, in questions (13), (14) and (15), participants are asked if their students use AI writing applications and whether they encourage them to use these tools in doing writing assignments with justifications. Moreover, they are required to give their opinions regarding the importance of raising learners' awareness of AI writing tools.

Question (16) and (17) are put to investigate teachers' attitudes towards the idea of integrating AI tools in teaching/learning writing with explanations.

Questions from (18) to (20) are set to determine participants' degree of confidence in the ability of AI tools to support students' writing performance, the services that these applications offer to develop EFL students' writing skills and the different tasks they do with the assistance of AI tools in teaching writing.

For questions (21) and (22) that are based on a Likert scale, teachers are supposed to give their opinions about the ability of AI writing tools to replace human editors and proofreaders and reduce the workload along with providing justifications.

The questionnaire ends with two concluding questions (23) and (24) in which teachers are required to determine the value of AI tools in teaching/learning writing and provide tips for using AI writing application effectively and responsibly for EFL writing.

Conclusion

Throughout this chapter, the practical methods and tools of the research are explained along with justifications about the choice of the participants and instruments. Also, a detailed description of the survey and the questionnaire is provided. In the next chapter, research results will be displayed and analysed thoroughly to test the hypotheses, answer the research questions, and achieve the reliability of the study.

Chapter Four

Results

Introduction

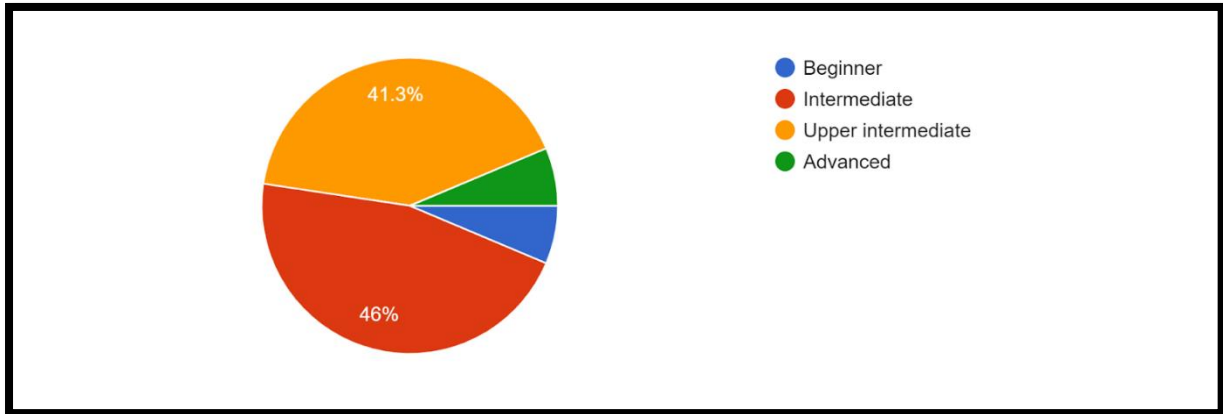
This chapter gives a comprehensive overview of the data analysis in order to determine teachers and students' attitudes towards writing skills and AI writing tools' integration in teaching and learning. In addition, the analysis will help identify the extent to which these applications influence the teaching/learning of EFL writing. Following the collection of data, several outcomes were ready to be evaluated and assessed in order to answer the study questions and test hypotheses.

Analysis of Students' Survey

Section One: EFL Students' Attitudes towards Writing Skills

Question 1: What is your level of writing proficiency?

Beginner Intermediate Upper intermediate Advanced

Figure 2*Students' Level of Writing Proficiency*

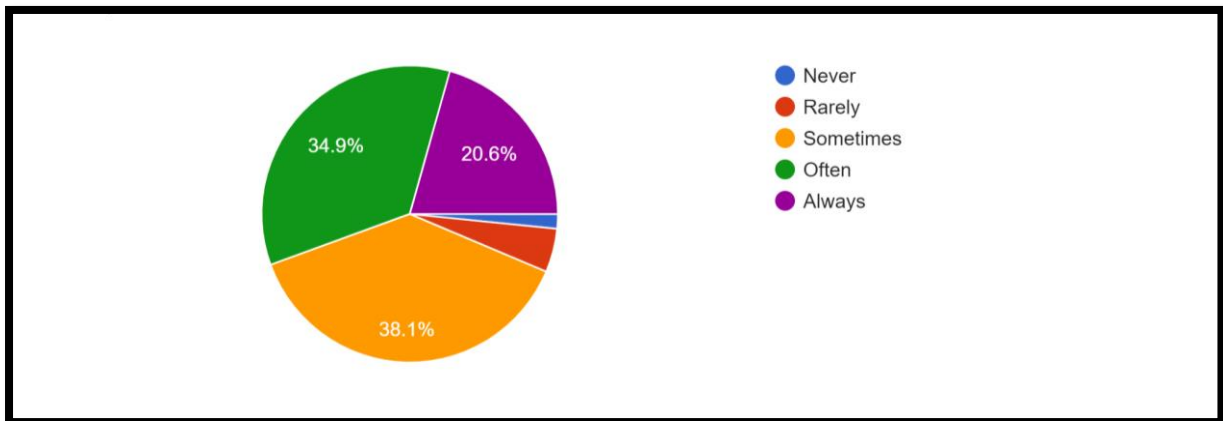
As it is shown in figure 2, there is a variety in the writing abilities because the target population covers all the levels from first year to master two. Forty-six percent of the respondents represented their level of writing proficiency as intermediate and 41.3% as upper intermediate, which can be attributed to third and second year or master one students. Only few respondents claimed to have a beginner and an advanced level with almost the same percentage 6.4% and 6.3%.

Question 2: How often do you write in English?

Never Rarely Sometimes Often Always

Figure 3

Students' Practice Frequency of the Writing Skill



A Likert scale was used to measure the frequency of practising writing, and it is revealed that 38.1% of the respondents pointed out that they sometimes practise the skill, whereas 34.9% reported that they are often involved in this task. On the other hand, the results indicated that 20.6% claimed that they always write. The minimum percentages came as 4.8% of participants who stated that they rarely practise writing, while 1.6% was the lowest percentage, indicating that the rest of them had never practised it. The results illustrated that most of the students are interested in writing, and it has gained importance among EFL learners.

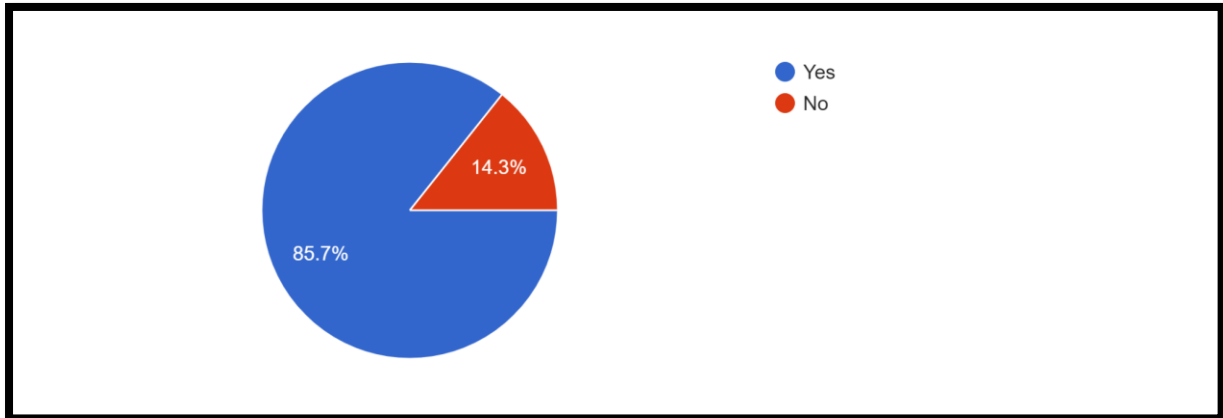
Question 3: Do you like the module of written expression?

Yes No

If "No", explain why?

Figure 4

Students' Perceptions about Written Expression Module



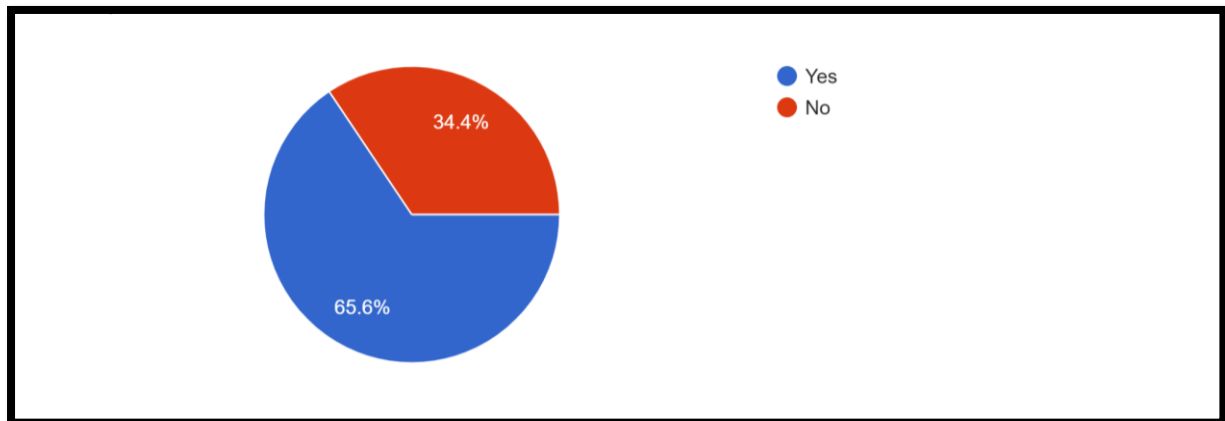
As clearly manifested through the answers of the students, the majority 85.7% stated that they do like written expression module, whereas a minority 14.3% claimed the opposite due to some reasons. Respondents explained their dislike by saying that writing is a complex skill to learn since it requires a lot of concepts and details to be mastered, the fact that makes written expression sessions boring. They also pointed that teachers of writing are firm in evaluating their written products and focusing on every single detail; hence, creating a sense of demotivation and frustration among learners. Other students justified their answers by prioritizing speaking over writing and showing interest to other modules like linguistics.

Question 4: Is writing an easy task for EFL students?

Yes No

Figure 5

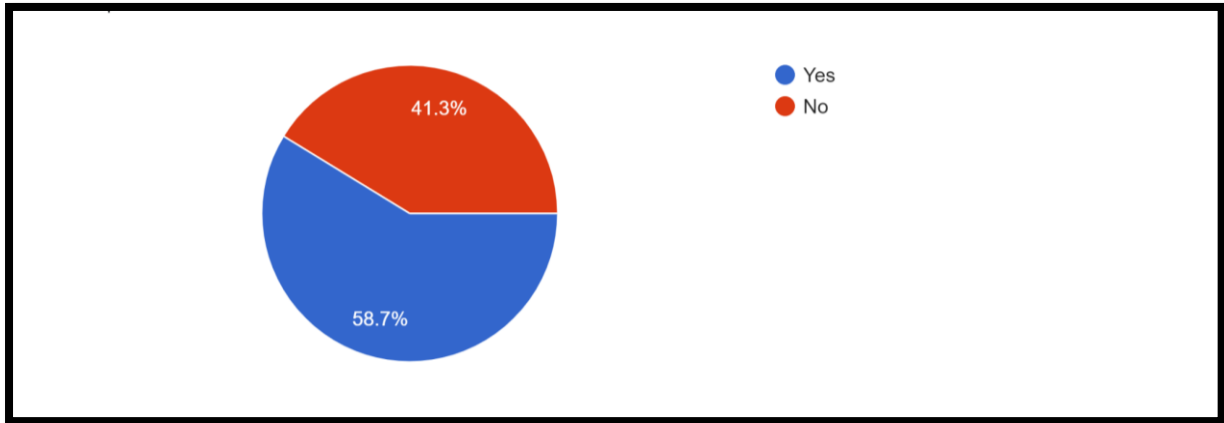
Students' Perceptions about the Degree of Complexity of the Writing Skill



The above figure displays that 65.6% of the students believed that writing is an easy task for EFL learners while 34.4% considered it as the most complex skill that requires a deliberate practice to achieve a high level of proficiency.

Question 5: Do you find a difficulty in writing?

Yes No

Figure 6*Students' Difficulty in Writing*

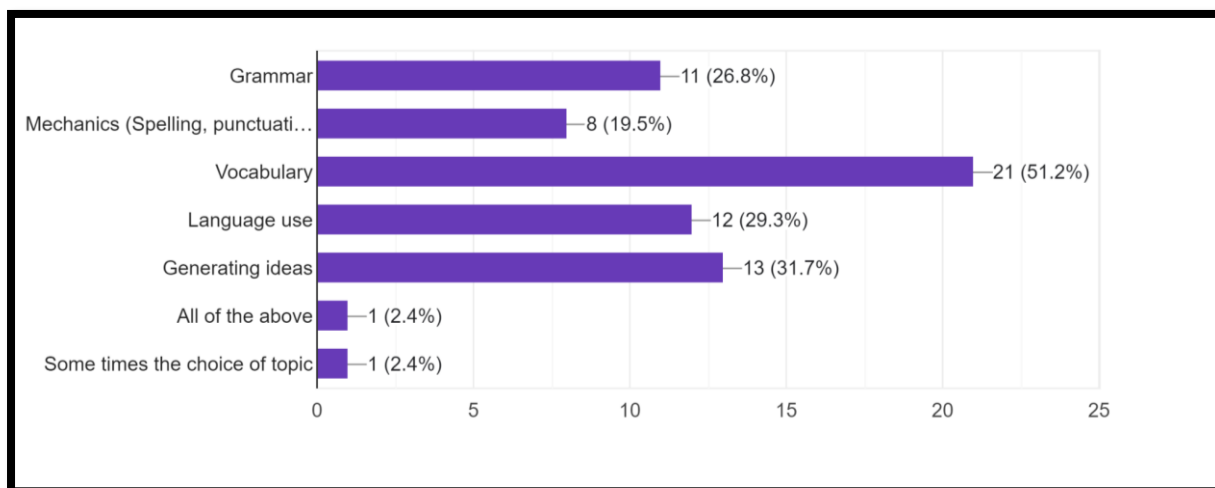
We observe from the figure above that 41.3% of the respondents claimed that they do not encounter any problem in writing. However, almost more than half of the participants 58.7% replied that they face some difficulties that may hinder them from producing well- thought of pieces of writing, the fact that confirms the complexity of this skill.

If "Yes", what is the area you have difficulty with? (You can tick more than one box)

Grammar Mechanics (Spelling, punctuation, capitalization)

Vocabulary Language use Generating ideas

All of the above Other.....

Figure 7*Students' Areas of Difficulties in Writing*

According to the answers of the students who tick "Yes" showing that they were having difficulties when it comes to writing, it is noticed that all the areas mentioned above are the most common writing problems.

The most selected option was vocabulary with a rate of 51.2% as it is expected, indicating that students' limited vocabulary makes it difficult for them to communicate their thoughts clearly on paper especially for those who prefer speaking over writing as it is mentioned earlier. Generating ideas is another major issue learners encounter with a rate of 31.7% by struggling to come up with ideas due to insufficient knowledge about topics.

Additionally, 29.3% of the respondents stated that language use is the reason that influences their writing abilities, whereas 26.8% of the participants claimed that grammar represents a hurdle for them when learning writing.

The last item is mechanics which students rated with 19.5%. This reflects that spelling, punctuation, and capitalization are not a big deal for EFL learners. Few of the respondents 2.4% pointed that all of the above-mentioned areas are regarded as main problems and cannot select

only one item over the other, and a similar percentage represents those who added other writing difficulties such as the choice of the topic that can be unfamiliar, resulting in the previously-mentioned issue of generating ideas.

Question 6: In the writing process, what stage do you find difficult for you? (You can tick more than one box)

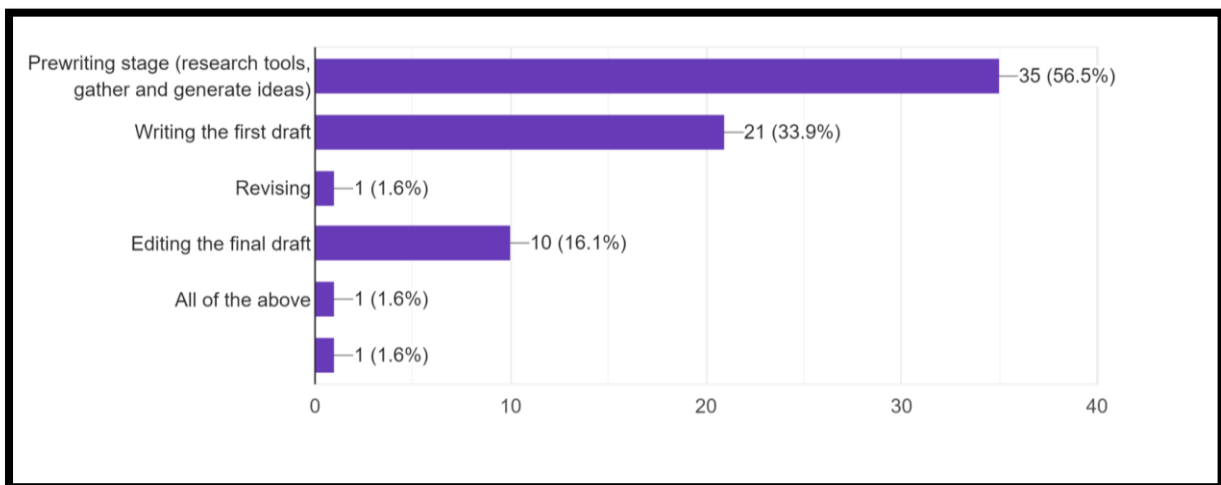
Prewriting stage (research tools, gather and generate ideas)

Writing the first draft Revising Editing the final draft

All of the above Other:.....

Figure 8

Students' Opinions about the Difficult Stages of the Writing Process



The results obtained from the data showed that more than half of the respondents 56.5% said that the hardest part in the writing process was the prewriting phase. Students perceive it as challenging because they need to come up with and collect ideas on the assigned topic.

Other students 33.9% believed that writing the first draft is daunting as well since they have to decide which information to include and exclude to end up with a coherent and cohesive

piece of writing. For the revising stage, only 1.6% agreed upon the difficulty of this phase though it is important in the writing process.

However, editing the final draft seemed problematic for some respondents 16.1% while a minority 1.6% signalled that they struggle with all the stages and 1.6% selected the option "Other" without any specification.

Section Two: EFL Students' Attitudes towards AI Use in Teaching and Learning Writing Skills

Question 7: Are you familiar with the concept of AI writing applications?

Yes No

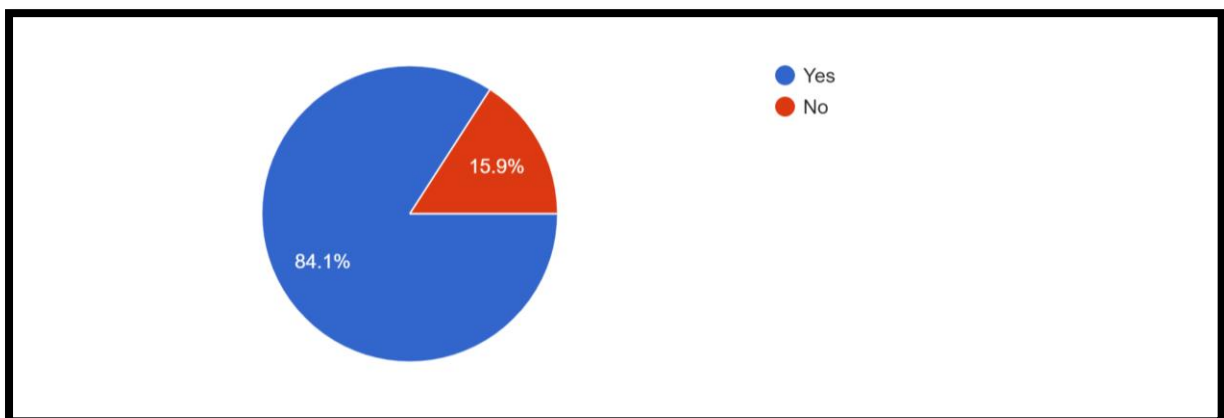
If "Yes", from where? (You can tick more than one box)

Teacher recommendation Classmate recommendation Advertisement

Social media All of the above Other:.....

Figure 9

Students' Awareness of AI Writing Applications

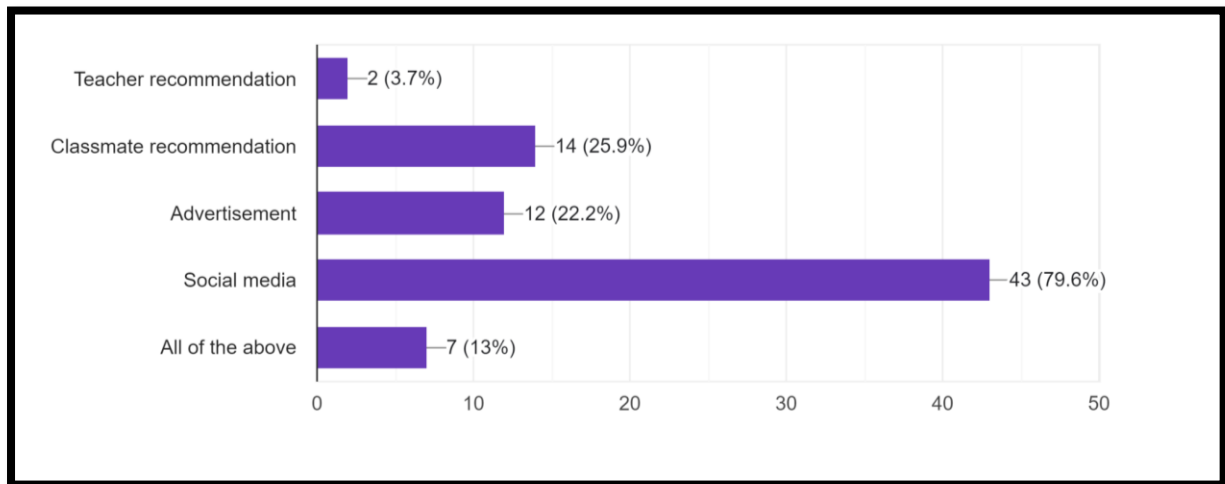


We can observe through the figure above, the vast majority of students were familiar with AI writing applications with a rate of 84.1%, and only 15.9% claimed that they were

unaware of such concept. This reflects the popularity of AI in general and AI writing tools in particular among EFL learners.

Figure 10

Students' Sources of Discovery of AI Writing Applications

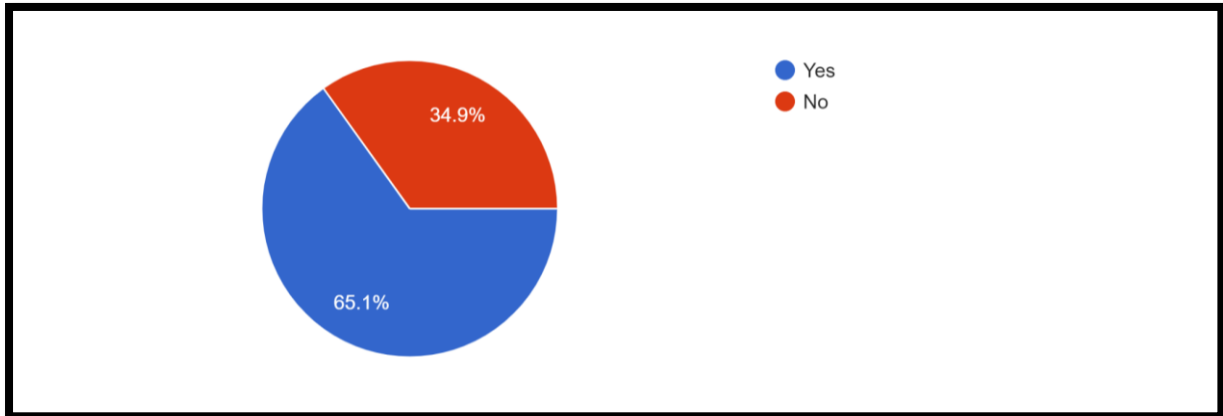


It is apparent from the figure above that social media was the most common source from which students got to know AI writing applications with a rate of 79.6% since the majority of them possess accounts in various media platforms where exchanging information is quicker and easier. 25.9% of the respondents stated that their classmates recommended them to use these tools whereas 22.2% knew about them through advertisements. Teacher recommendation received the least percentage 3.7%, indicating that they rarely advise their learners to use AI writing applications. Some respondents 13% declared that they became aware of AI tools thanks to all of the above-mentioned sources.

Question 8: Have you ever used any AI writing tool in your learning before?

Yes No

If "Yes", what are they?

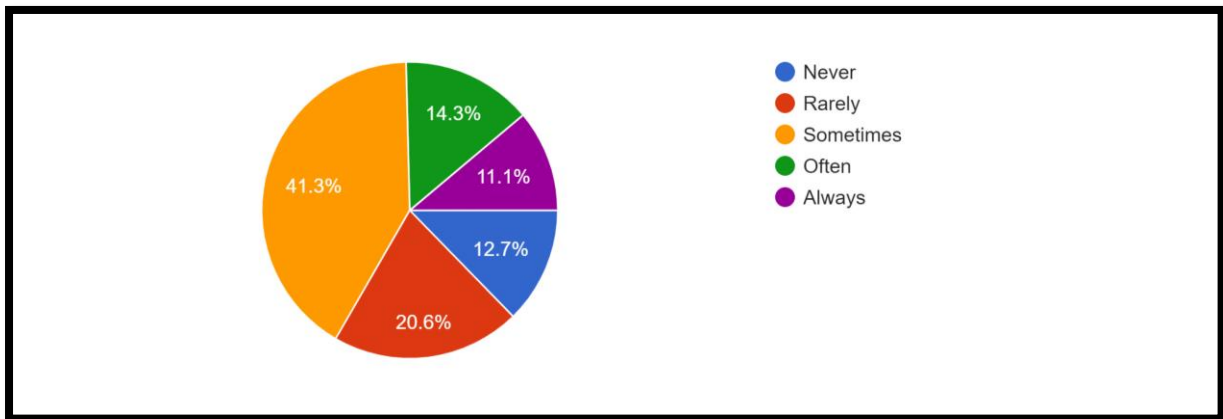
Figure 11*Students' Use of AI Writing Tools*

The findings revealed that more than half of the participants 65.1% have used AI writing applications in their learning the fact that confirms their awareness of these tools. Nevertheless, 34.9% of the students declared that they have never used them.

Respondents, who ticked “Yes”, listed a set of AI writing applications that they are relying on while writing. It can be noted that some of the tools were mentioned repeatedly such as ChatGPT, Quillbot, Grammarly, Claude AI, Perplexity AI, Character AI, AI Paraphraser, AI Summarizer, Snap AI, and Gemini, which is also known as Bard. Others mentioned applications that can be used in research like Semantic Scholar, Chat PDF, ProWritingAid, AI Writer, Sudowrite, Discord and DeepL. It can be noticed that most of the students were leaning towards the use of AI writing tools that help them in generating ideas, paraphrasing, and summarizing information in addition to proofreading and to some extent translating.

Question 9: How often do you use AI writing tools?

Never Rarely Sometimes Often Always

Figure 12*Students' Frequency of Using AI Writing Applications*

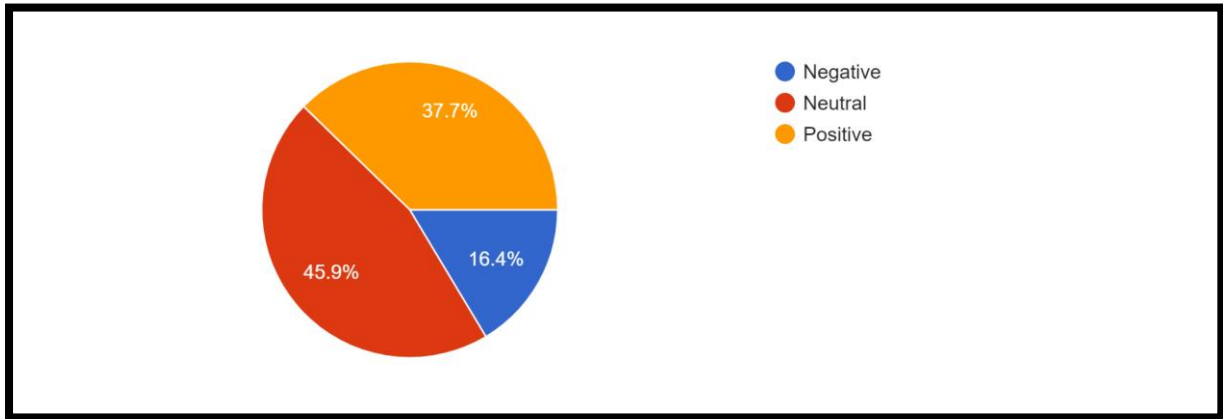
As it is displayed in the figure above, 41.3% of the participants declared that they sometimes use AI writing applications; on the contrary, 20.6% rarely use them. The approximate percentages 14.3% and 12.7% represent respectively students who often and never employ these tools, and only 11.1% claimed that they always use them. The results demonstrated students' interests in implementing AI writing applications, and as it is stated before, most of them face writing difficulties in different areas; therefore, these tools will assist them in overcoming their weaknesses.

Question 10: What is your attitude towards the idea of integrating AI tools in teaching and learning writing skills? Justify your stance.

Negative Neutral Positive

Figure 13

Students' Attitudes towards the Idea of Integrating AI Tools in Teaching and Learning Writing Skills



As it is illustrated in the figure above, 45.9% of the students took a neutral stance regarding the idea of integrating AI tools in teaching and learning writing because AI is a new trend, so it is too early to make a judgment on its efficacy as justified by students,

“It is a new idea to fully make either negative or positive attitude.”

Besides, they claimed that AI is a double-edged sword that has pros and cons; it can be beneficial as long as it is used appropriately, i.e., its effectiveness is based on its users. Some students said,

“The AI tools have double swords because some people use it in a good way whereas others do not.”

“It can be both positive and negative to use AI in the writing process on one hand AI can help learners improve their writing by providing them with new ideas and topics to work on. On the

other hand, it can be negative as learners might rely solely on AI instead of working independently.”

On the contrary, 37.7% of the participants had a positive attitude towards the use of AI writing tools in teaching and learning because they assist both teachers and students in fixing problems they may encounter such as correcting spelling and grammatical errors; hence, avoiding time and effort consuming. Additionally, AI writing tools help learners generate ideas, enrich their linguistic repertoire, and offer immediate feedback without forgetting how they can be easily accessed anytime and anywhere. In this respect, students stated,

“It will help teachers for gaining time correcting grammar mistakes (Grammarly stands for correcting the errors and provide students with the correct way of writing).”

“I think integrating AI tools in teaching and learning writing skills can be super helpful. It can provide personalized feedback and tips to improve writing. Plus it's a great way to practice and enhance writing skills.”

“These tools can help identify areas for improvement, provide suggestions for strengthening writing, and offer personalized guidance to learners, ultimately enhancing the overall learning experience.”

Some respondents pointed that these tools help students who suffer from psychological barriers, and they reported,

“Some students feel shame or shy of being corrected by the teacher or in front of their classmates, so dealing with a virtual application is more comfortable for them.”

Only 16.4% of the respondents showed a negative attitude concerning this concept. This can be explained by the fact that these applications encourage laziness since students will find ready-made content, and they will just copy-paste it. Therefore, the participants emphasized on how AI tools decrease the thinking skills and kill human creativity. They declared,

“It is not effective sometimes I mean it doesn't give you what you really need to get.”

“Reduces our thinking and creativity via offering ready templates and solutions.”

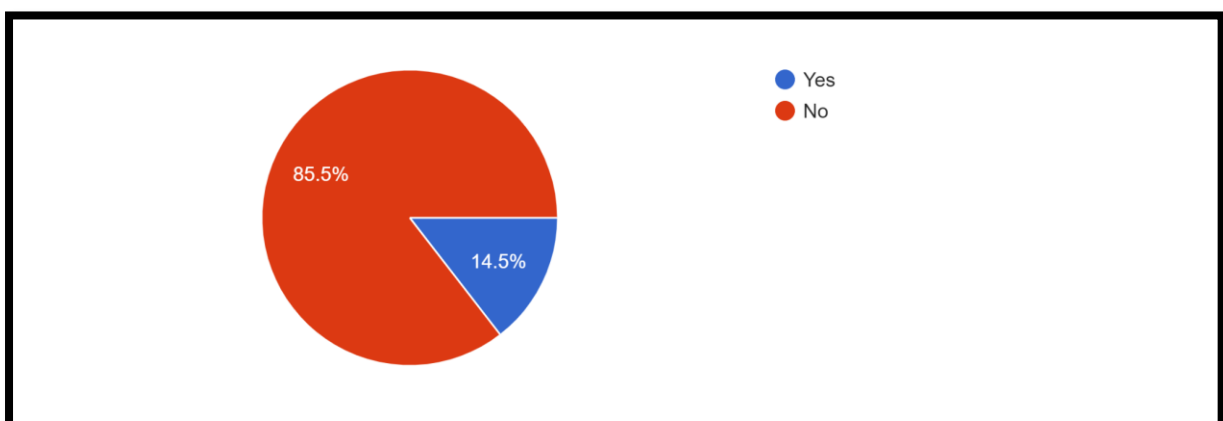
“Writing does not require such tools.”

Question 11: Do your teachers encourage you to use AI writing tools in doing your writing assignments? Justify your answer.

Yes No

Figure 14

Teachers' Support of Students to Use AI Writing Tools in Doing Assignments



From the students' answers, it can be noticed that the vast majority of them 85.5% declared that teachers do not encourage them to use AI tools in writing due to many reasons.

They all agreed on the fact that instructors want their learners to depend on themselves and use their background knowledge because overreliance on AI applications will not improve the writing skills, but rather they will hamper creativity. Students said,

“Teachers want us to be the independent learners that make their own research work.”

“They usually instruct us with the expression “your own words” because teachers want to know and see our style in writing.”

They further argued that teachers always urge them to seek originality and make an effort in doing assignments to enhance the style of writing as justified by some respondents who asserted,

“Most of our teachers don't encourage us for using AI in general because they always look for our own knowledge and our own words which is right because with AI you would do everything easily without doing any effort or trying.”

Only 14.5% of the respondents stated that teachers do support them to make use of these tools to facilitate the writing process since they will be able to produce an error-free product, receive a personalized guidance as they claimed,

“AI writing tools help us to write a good piece of writing without mistakes.”

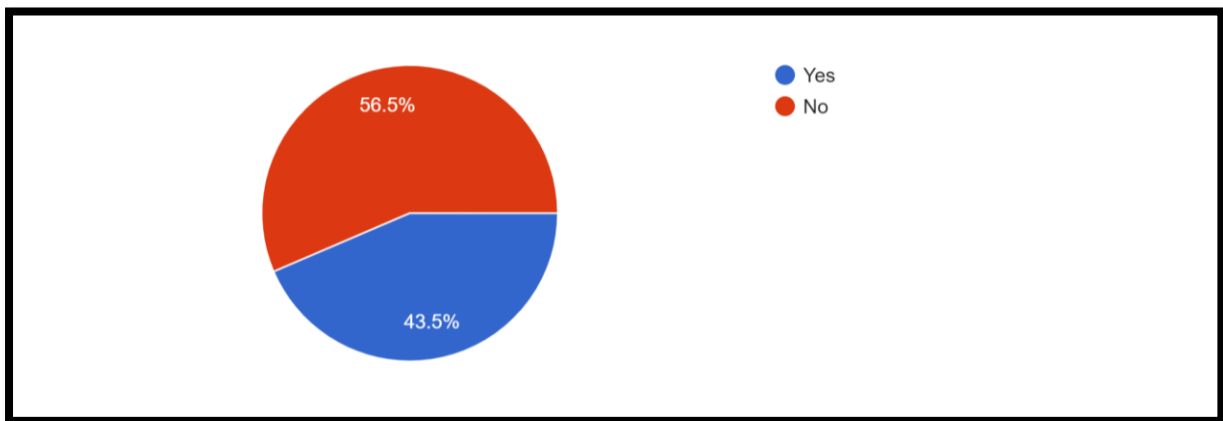
“Yes, I think that teachers as well started to realise how the integration of AI can positively foster students' abilities since it's customised and quickly serve you.”

Question 12: Would you prefer your teachers to use AI tools in written expression sessions? Justify your answer.

Yes No

Figure 15

Students' preferences of Using AI Tools by Teachers in Written Expression Sessions



As it is clearly observed from the figure above, 43.5% of the students expressed their preference for using AI writing applications by teachers in written expression sessions because they are more efficient in helping them enhance their level in writing as one of the participant mentioned,

“Using AI tools in written expression sessions can provide valuable feedback and help students improve their writing skills.”

Moreover, AI tools are time and effort saving, and they keep learners motivated during the writing process. They elucidated this point by saying,

“Because the countries that use those methods are the most developed countries in the educational system and they fit their teaching and learning requirements.”

On the other hand, 56.5% refused the idea of employing AI tools in written expression sessions because they believed that the traditional methods of teaching are more convenient, and it is needless to integrate such technology as explained by some students,

“Personally, I got used to my teacher’s ways as they are, it would be the same if they use AI, and they can probably use it in some presentations (maybe) but not in explaining or the whole teaching process.”

“Our teachers don't need the AI because it's a new technology and it's for our generation. They have other sources that they use to teach us.”

Additionally, learners remained skeptical about the reliability of information obtained by AI, so they did not want to be fully dependent on it. A minority kept neutral regarding this question, stating that neither traditional methods of teaching nor the integration of AI would make genuine sense without each other. In other words, there should be a combination between the two methods to guarantee good results.

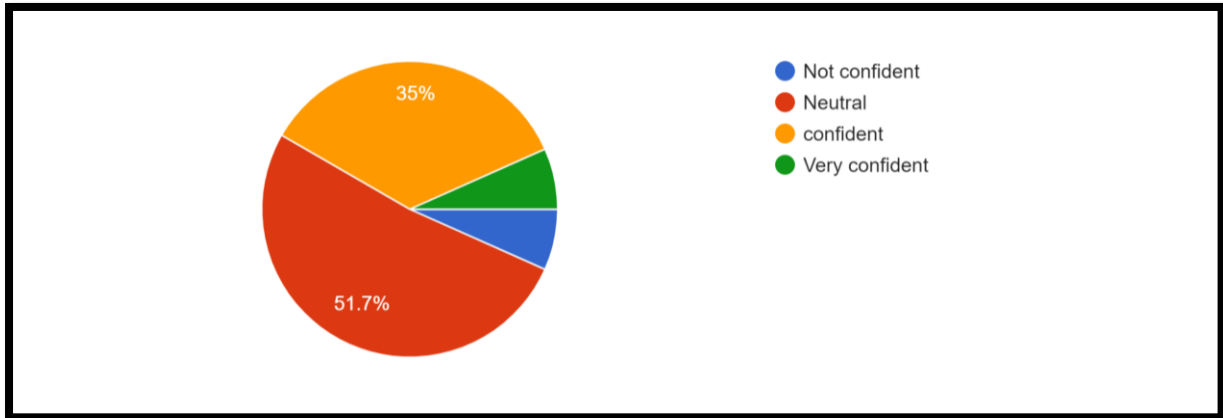
From the students' responses, it can be deduced that those who prefer their teachers to use AI tools in written expression sessions are the same who showed a positive attitude towards AI and vice versa.

Question 13: How confident are you in the ability of AI tools to support your writing performance?

Not confident Neutral Confident Very confident

Figure 16

Students' Confidence in the Ability of AI Tools to Support their Writing Performance



The results obtained from the data showed that more than half of the participants 51.7% took a neutral position on whether they were confident in the ability of AI tools to support their writing performance, which is similar to those who had a neutral attitude towards AI writing applications in the fourth question. Likewise, students who expressed a positive attitude stated that they were confident in the services they get from these tools with a rate of 35% while others expressed their extreme confidence with a rate of only 6.7%. Few respondents, who had a negative attitude concerning AI, declared that they were not confident at all with a rate of 6.6%.

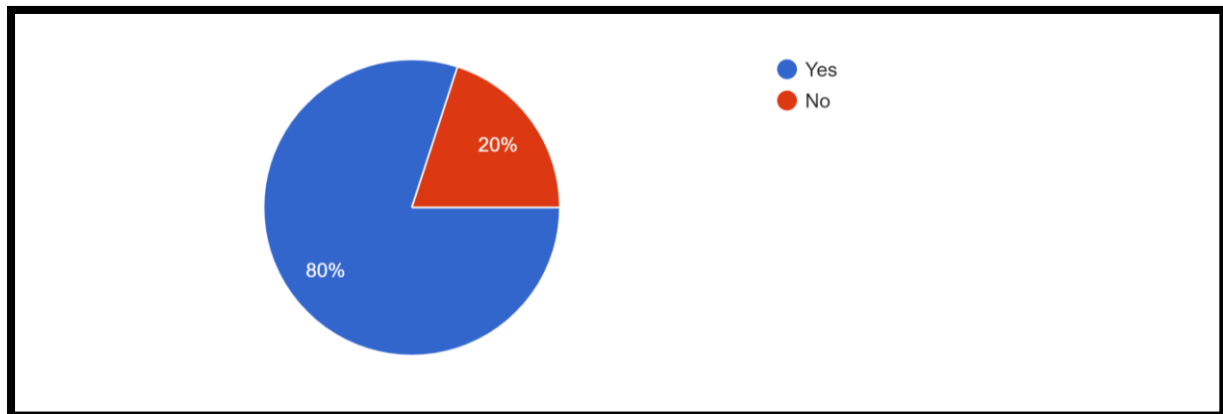
Question 14: Do you find AI writing applications effective? Justify your answer.

Yes

No

Figure 17

Students' Opinions about the Effectiveness of AI Writing Applications



Unsurprisingly, 80% of the respondents find AI writing applications effective and helpful to foster various aspects of writing in order to end up with well-formed and designed written products. They emphasized on the feature of autocorrection that these tools offer in terms of grammar, spelling, punctuation, and sentence structure. Besides, AI tools facilitate many writing-related tasks, starting from generation of ideas to editing; therefore, saving a lot of time and effort. Some students linked the effectiveness of AI applications not only to the development of the writing skill but also the improvement of English language because when they use them, they will automatically utilize the target language. In the same vein, participants explained how their vocabulary was enlarged after the implementation of AI writing applications.

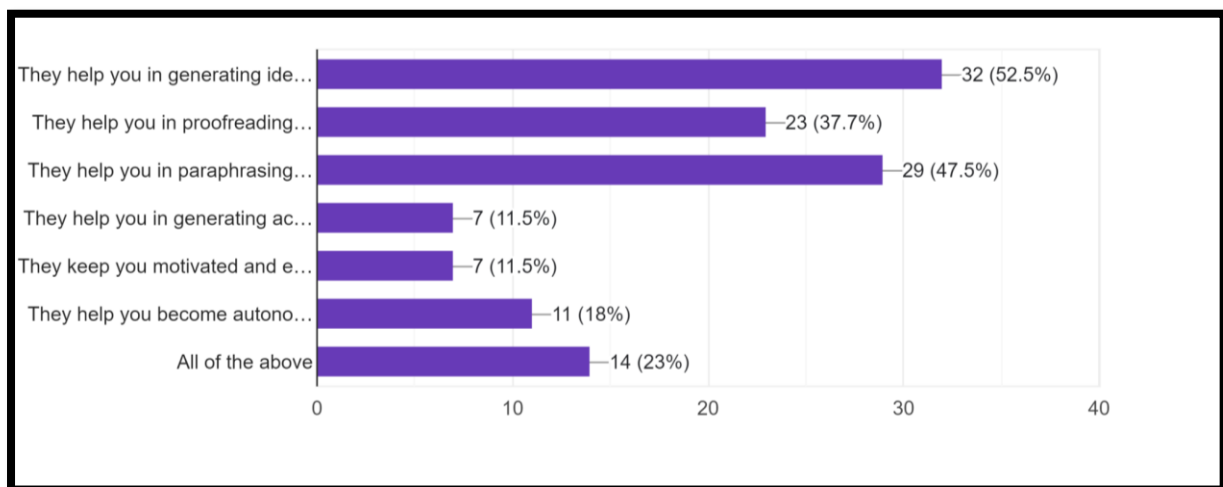
Conversely, 20% of the participants did not agree on the effectiveness of these tools because if students rely solely on AI, they will never learn how to write. Problems of receiving incorrect information or having the same ideas among learners when doing assignments.

Question 15: What specific AI writing tools' features have you found helpful in facilitating the writing process? (You can tick more than one box)

- They help you in generating ideas
- They help you in proofreading your written products (correcting spelling and grammatical mistakes)
- They help you in paraphrasing and summarizing written texts
- They help you in generating accurate citations
- They keep you motivated and engaged throughout the writing process
- They help you become autonomous learners while writing
- All of the above

Figure 18

AI Writing Tools' Features Students Have Found Helpful in Facilitating the Writing Process



The aim behind this question is to figure out the main peculiarities of AI writing applications that students acknowledge and consider significant in facilitating the writing process. The results indicated that most of the students 52.5% use them to generate ideas since AI tools provide them with limitless information about different topics. Paraphrasing and summarizing written texts were the second-ranked features that pushed learners to incorporate them in writing with a rate of 47.5% while 37.7% of the participants focused on how these tools

assist them in proofreading pieces of writing, i.e., correcting mechanics-related errors. In addition, some respondents believed that AI applications help them in generating accurate citations whereas others pointed that they keep them motivated and engaged throughout the writing process with a similar rate of 11.5%. Twenty-three percent claimed that all of the above-mentioned features are useful and facilitate the process of writing.

Question 16: What do you usually focus on while using AI writing tools? (You can tick more than one box)

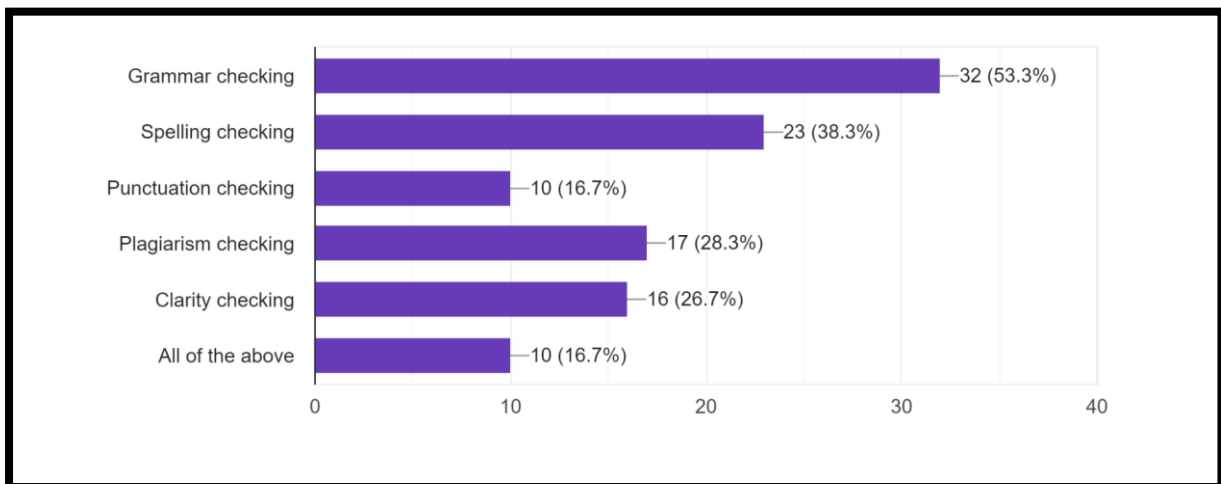
Grammar checking Spelling checking Punctuation checking

Plagiarism checking Clarity checking All of the above

Other:.....

Figure 19

Students' Focus while Using AI Writing Tools



As it is manifested through the figure, it is noticed that 53.3% of students focus on grammar checking while using AI writing applications to avoid any grammatical mistakes that may affect the quality of the written product. Respectively, 38.3% and 16.7% represent respondents who declared that they use AI tools for the sake of spelling and punctuation

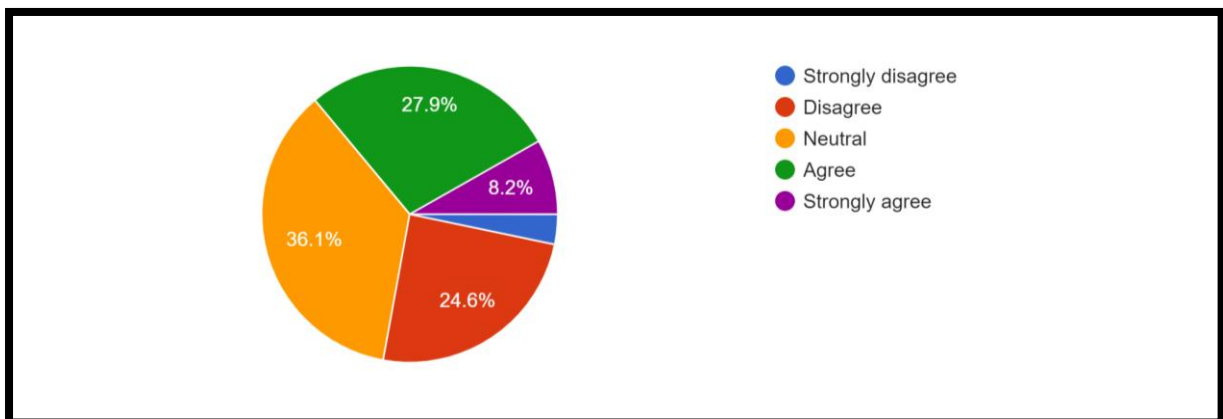
checking. Additionally, some of them stated that they focus more on plagiarism and clarity checking with approximate percentages of 28.3% and 26.7% whereas only 16.7% of the students claimed that they take into account all of the aforementioned aspects while using AI writing applications.

Question 17: Do you agree with the statement “AI writing applications keep learners engaged and motivated throughout the writing process”?

Strongly disagree Disagree Neutral Agree Strongly agree

Figure 20

Students' Opinions about the Statement “AI Writing Applications Keep Learners Engaged and Motivated throughout the Writing Process”



The aim behind this question is to elicit information about the effect of AI writing applications on students' motivation throughout the writing process. The findings revealed that 36.1% took a neutral position whereas 27.9% agreed on the fact that these tools help them feel motivated while writing. Conversely, 24.6% stated that AI applications never increase learners' engagement in writing. Only 8.2% expressed extreme agreement and 3.2% showed extreme disagreement with the statement. It has been concluded that judging AI tools' ability in keeping

students motivated is a bit difficult but also undeniable although some of the participants were against this idea.

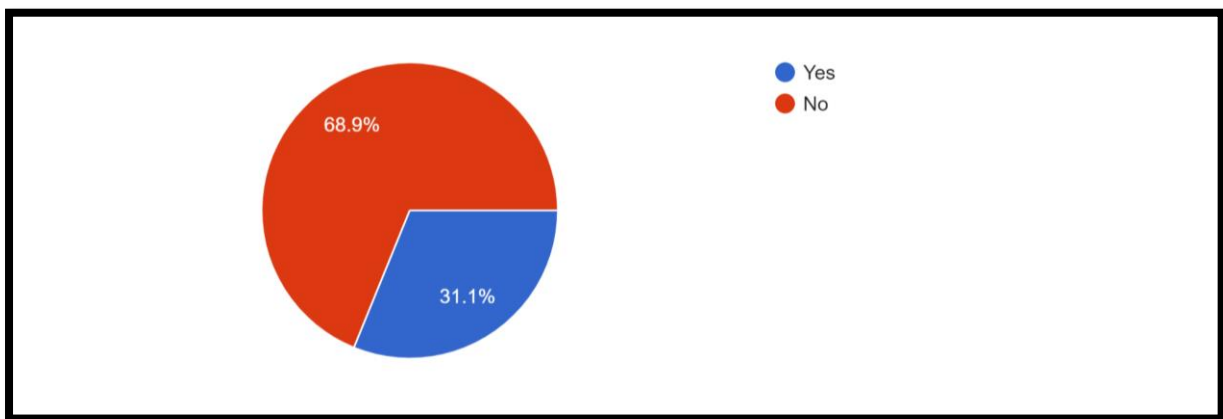
Question 18: Do you think AI writing tools can replace human editors or proofreaders?

Justify your answer.

Yes No

Figure 21

Students' opinions about the Ability of AI Writing Tools to Replace Human Editors and Proofreaders



68.9% of the participants were against the fact that AI writing tools can replace human editors or proofreaders. They supported their point of view by claiming that AI is a new concept, so it will likely be used in the future. Despite the development of AI writing applications, they lack the human creativity that makes a piece of writing unique as stated by a student,

“No matter how much AI is improved in the field of writing, it wouldn't give that specific feeling of a written work done by a human.”

Furthermore, respondents preferred human editors and proofreaders because they can come up with new ideas while AI tools are unable to fully understand the nuances and contexts of language use since they require orientation and good implementation as justified,

“Nothing can replace the human. They are human-discovered tools! So how can they replace the human?”

However, 31.1% of the students believed that AI writing applications are more advanced, efficient and capable enough to perform tasks much more accurate than those done by human editors since they are programmed. Participants stated,

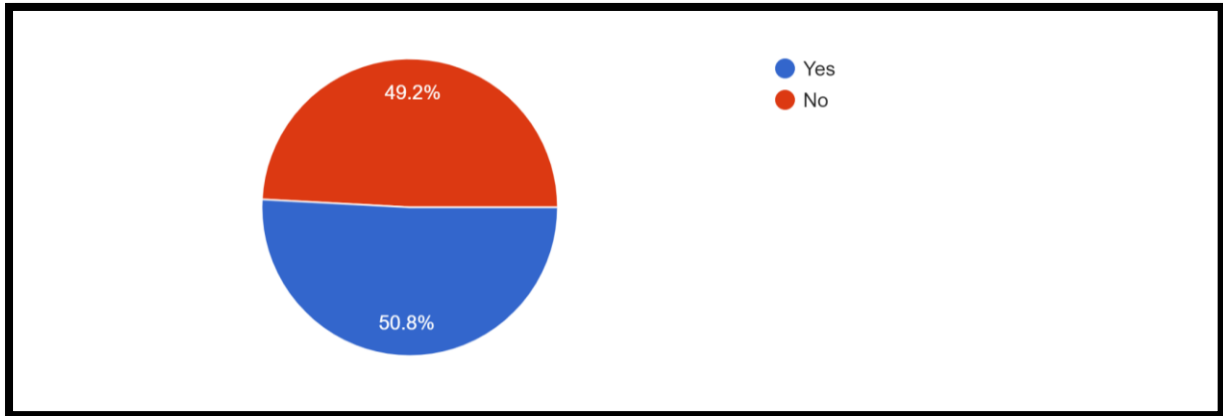
“AI is so advanced nowadays, it is always a step ahead from humans, it can do anything you expect from generating images to edit several things ... so yeah it can strongly replace human editors.”

Question 19: Have you noticed any improvements in your writing skills after using AI writing tools? If "Yes", mention them.

Yes No

Figure 22

Students' Improvements in Writing Skills after the Use of AI Writing Applications



The findings revealed that 50.8% of the students witnessed an improvement in their writing skills whereas 49.2% expressed their dissatisfaction after using AI writing applications. Participants, who ticked “Yes”, explained how AI tools helped them enhance their writing abilities. The majority of them agreed on the fact that vocabulary, grammar, and style of writing were boosted thanks to these applications as justified,

“I’ve definitely noticed improvements in my writing skills after using AI writing tools. They’ve helped me enhance my grammar, sentence structure, and even expand my vocabulary.”

“Of course since I start using AI, I fully get to the next level!”

“I learnt new words and phrases suggested by the AI.”

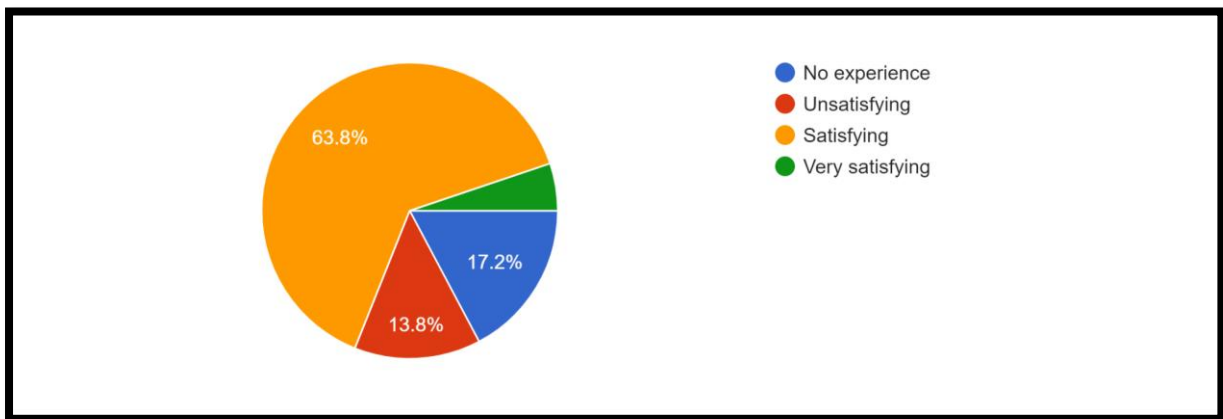
Others noted that they could produce coherent and cohesive texts without spelling and punctuation errors. Moreover, participants focused on how they could think out of the box and formulate catchy introductions and conclusions because of the insights they can get from AI tools.

Question 20: How would you assess your experience with AI tools in developing your writing compositions?

No experience Unsatisfying Satisfying Very satisfying

Figure 23

Students' Experience with AI Tools in Developing their Writing Compositions



Clearly seen, 63.8% of the respondents claimed that they had a satisfying experience with AI tools in developing their writing compositions because of the benefits these applications offer, which are previously mentioned, and only 5.2% expressed extreme satisfaction. On the contrary, 13.8% of the participants stated that they had an unsatisfying experience while 17.2% declared that they had no experience at all with AI writing tools.

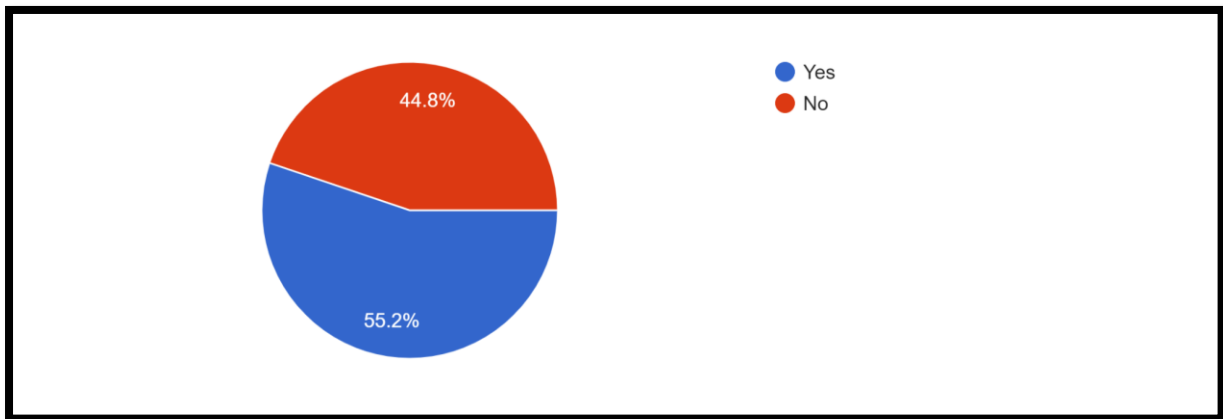
Question 21: Would you recommend AI writing tools to other EFL learners?

Yes No

If "Yes", explain why?

Figure 24

Students' Recommendations of AI Writing Tools to EFL Learners



This was a concluding question that seeks to summarize students' opinion of those who defended the idea of integrating AI tools to improve the writing skills and those who expressed a negative attitude towards it. The findings revealed that 55.2% of the participants recommended EFL learners to incorporate AI tools to facilitate and improve their writing proficiency as it is stated,

"I advise EFL learners to benefit from the revolution in AI and use it in a positive manner."

They claimed that AI is worth using especially for learners who struggle with brainstorming ideas and organizing them. In other words, AI tools help them express themselves clearly while writing. Moreover, they provide immediate feedback and suggestions that can boost confidence and make the writing process enjoyable. Finally, learners will be able to produce pieces of writing with minimal errors.

Some participants recommended EFL learners to make use of AI applications as long as it is combined with human assistance as justified,

“Yes, I recommend AI writing tools for EFL learners as a supplementary resource for grammar and vocabulary, but emphasize the importance of traditional learning methods and human guidance.”

However, 44.8% of the respondents stated that EFL learners should not use AI writing applications. This can be explained by the same reasons that students mentioned to express their negative attitude towards AI use in teaching and learning writing skills.

Analysis of Teachers' Questionnaire

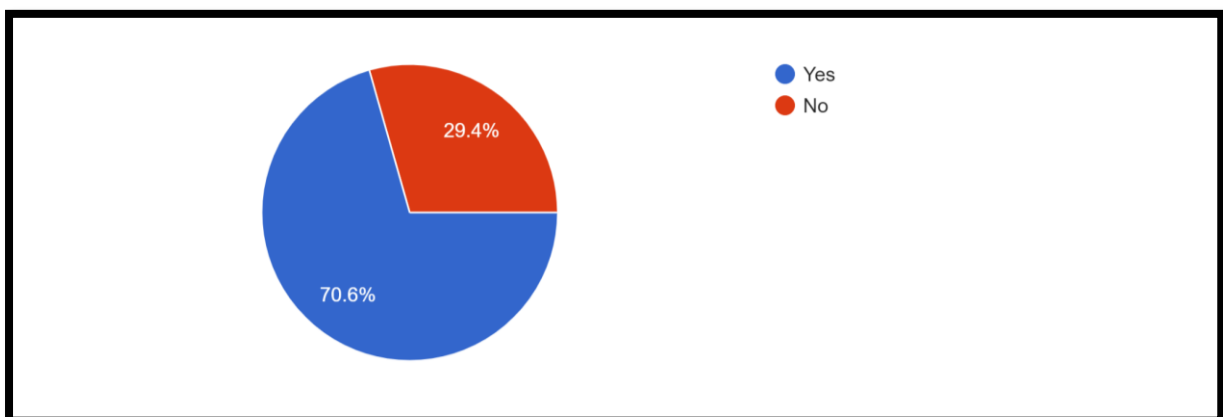
Section one: EFL Teachers' Attitudes towards Writing Skills

Question 1: Do EFL students enjoy written expression sessions?

Yes No

Figure 25

Teachers' Opinions about Students' Attitudes towards Written Expression Sessions



As clearly manifested in the figure, 70.6% of the teachers stated that EFL students enjoy written expression sessions while 29.4% declared that their students do not like written

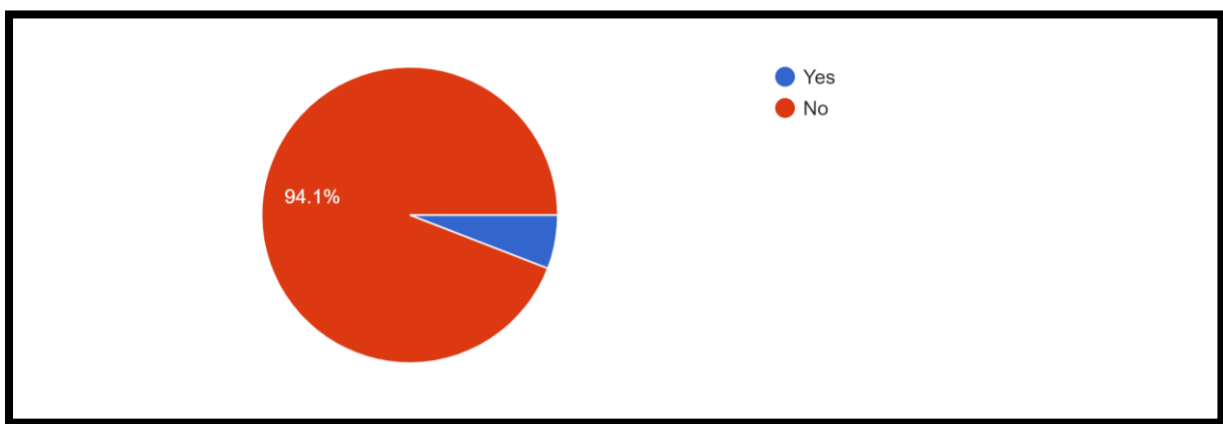
expression module due to the complexity of the writing skill that requires a lot of concepts and details to be mastered, the fact that makes it tedious.

Question 2: Is writing an easy task for EFL students?

Yes No

Figure 26

Teachers' Perceptions about the Degree of Complexity of the Writing Skill



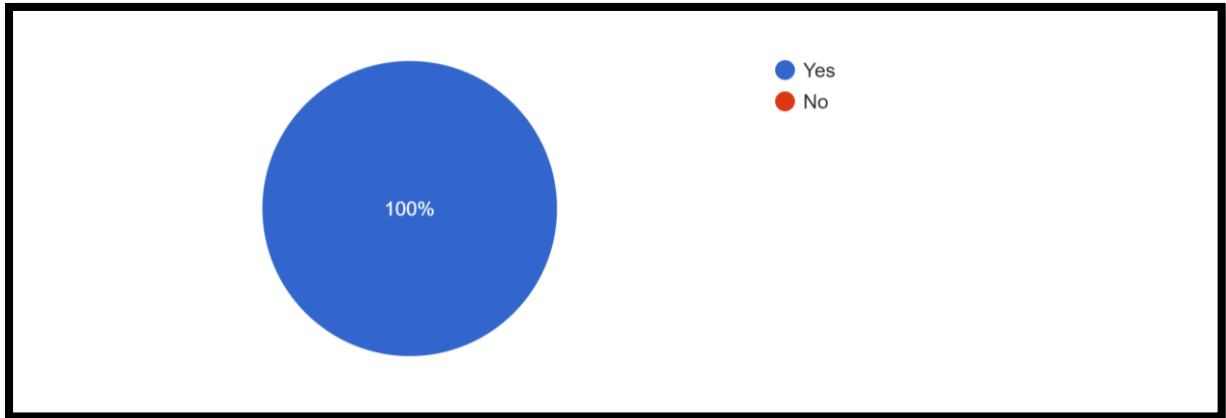
The findings revealed that almost all of the teachers agree on the complexity of the writing skill with a rate of 94.1%, and only 5.9% viewed writing as an easy task. Because no one can deny the fact that writing is one of the most challenging skills in any FL, teachers struggle to find the convenient methods of making this productive skill easier for EFL learners that face difficulties with it.

Question 3: Do EFL students find a difficulty in writing?

Yes No

Figure 27

Teachers' Attitude towards Students' Difficulties in Writing



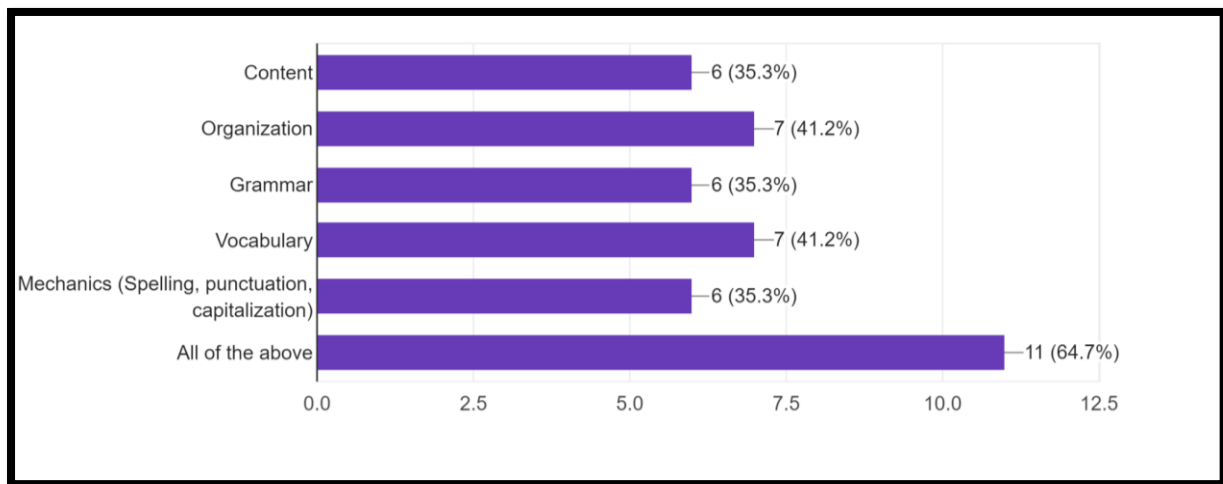
We can observe from the figure above, all of the participants 100% claimed that EFL students struggle in writing and face many difficulties that influence their writing proficiency. This confirms how much complex teaching and learning the writing skill in the EFL context.

If "Yes", what are the aspects of writing that they have problems with? (You can tick more than one box)

Content Organization Grammar Vocabulary

Mechanics (Spelling, punctuation, capitalization) All of the above

Other:

Figure 28*Teachers' Opinions about Students' Areas of Difficulties in Writing*

As clearly displayed in the figure above, teachers believed that content, organization, grammar, vocabulary, and mechanics are all representing a dilemma for students during the act of composing with a percentage of 64.7%. However, some respondents pointed that organization and vocabulary are the most difficult aspects of writing with an equal rate of 41.2%. According to other teachers, learners' problems in writing can be associated with content, grammar and mechanics, which received the same percentage of 35.3%. It can be deduced that teachers struggle with all of the aforementioned areas as well when assessing students' pieces of writing.

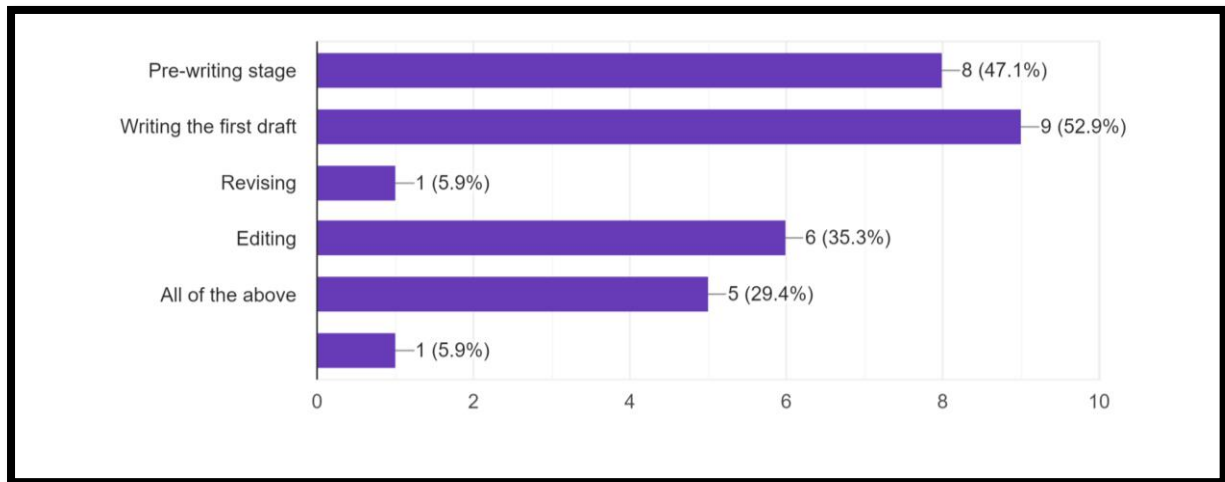
Question 4: What stage of the writing process do you find difficult for EFL students? (You can tick more than one box).

Pre-writing stage Writing the first draft Revising Editing

All of the above Other:.....

Figure 29

Teachers' Opinions about the Difficult Stages of the Writing Process for EFL Students

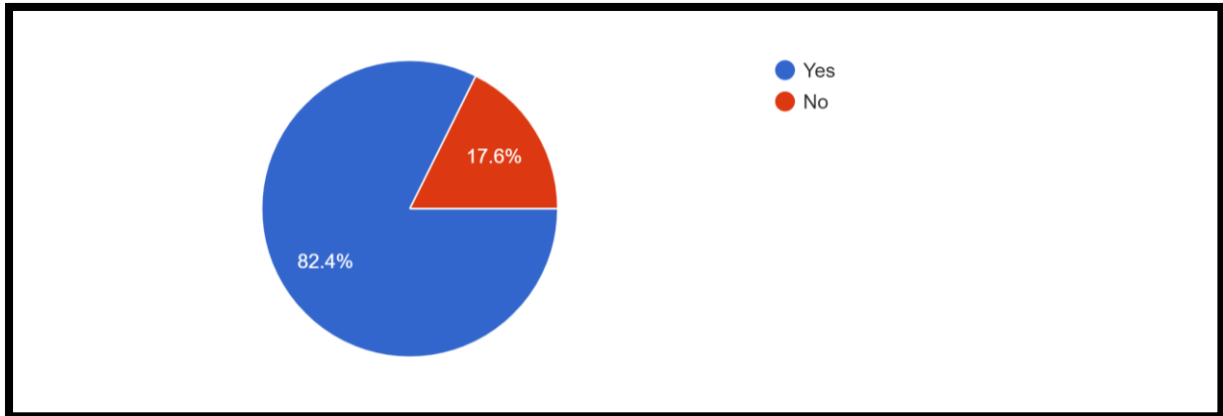


The results revealed that 52.9% of the teachers claimed that writing the first draft is the most difficult stage whereas 47.1% went for the pre-writing stage. It was apparent that both teachers and students agreed on the difficulty of these two phases since they represent the starting point where learners have to come up with ideas and translate them into written words.

Other teachers considered editing to be more problematic with a rate of 35.3, and only 5.9% pointed that EFL learners find a difficulty in revising their written products. 29.4% of the participants stated that all of the aforementioned stages seem difficult, and this varies from one student to another. Only 5.9% selected the option “Other” without any specification.

Question 5: Do you find teaching writing to EFL students difficult?

Yes No

Figure 30*Teachers' Attitudes towards Teaching Writing to EFL Students*

Clearly seen, the vast majority of teachers emphasized on the difficulty of teaching writing to EFL learners with a rate of 82.4% and only 17.6% stated the opposite. Because most of the students suffer from various writing problems in different areas, particularly beginners, the process of teaching this skill will be challenging, and teachers will also struggle to opt for the suitable approaches of teaching writing.

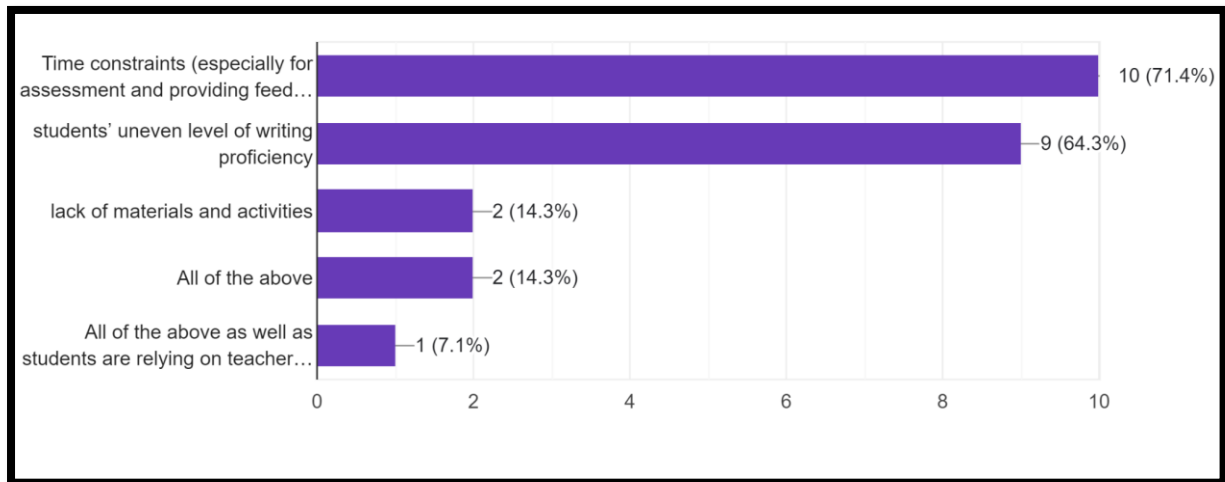
If "Yes", what are the difficulties you face while teaching writing? (You can tick more than one box).

Time constraints (especially for assessment and providing feedback)

Students' uneven level of writing proficiency

Lack of materials and activities

All of the above Other:.....

Figure 31*Teachers' Difficulties in Teaching Writing*

According to the answers of the teachers who ticked "Yes" showing that they were having difficulties when it comes to teaching writing, it is noticed that the most selected option was time constraints with a rate of 71.4%. It is evident that most educators do not find enough time to assess learners' pieces of writing and provide them with immediate feedback because they are restricted by the syllabus that should be covered in addition to the large classes that make the situation worse.

64.3% of the respondents attributed the difficulty of teaching this productive skill to the students' uneven level of writing proficiency. Within the same class, we can find learners with poor writing skills that require more attention from teachers to enhance their writing achievements; however, those with more developed writing skills will not receive the intended information that align with their needs.

Lack of materials and activities is another major issue that teachers face with a rate of 14.3%. Because of the individual differences of learners, teachers struggle to find interactive and engaging activities and materials that can be utilized in written expression sessions.

Some teachers indicated that all of the above-mentioned reasons hinder them from doing their work as it should be with a rate of 14.3%, and only 7.1% of the participants added another problem which is the students' overreliance on teachers in terms of motivation as justified by one of them,

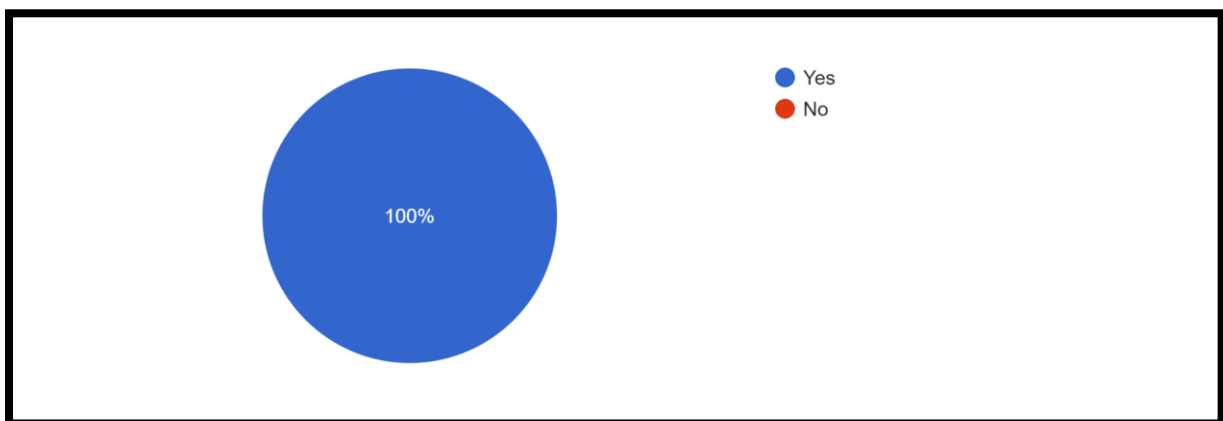
“Students are relying on teachers for motivation despite that they are advanced learners and should be self-motivated.”

Question 6: Do you help your students when they write?

Yes No

Figure 32

Teachers' Assistance of Students in Writing



The figure displays that 100% of the respondents declared that they help their students when they write because as it is mentioned previously, most of the participants considered writing as a difficult skill to be taught and learnt; hence, learners require assistance from the part of their teachers.

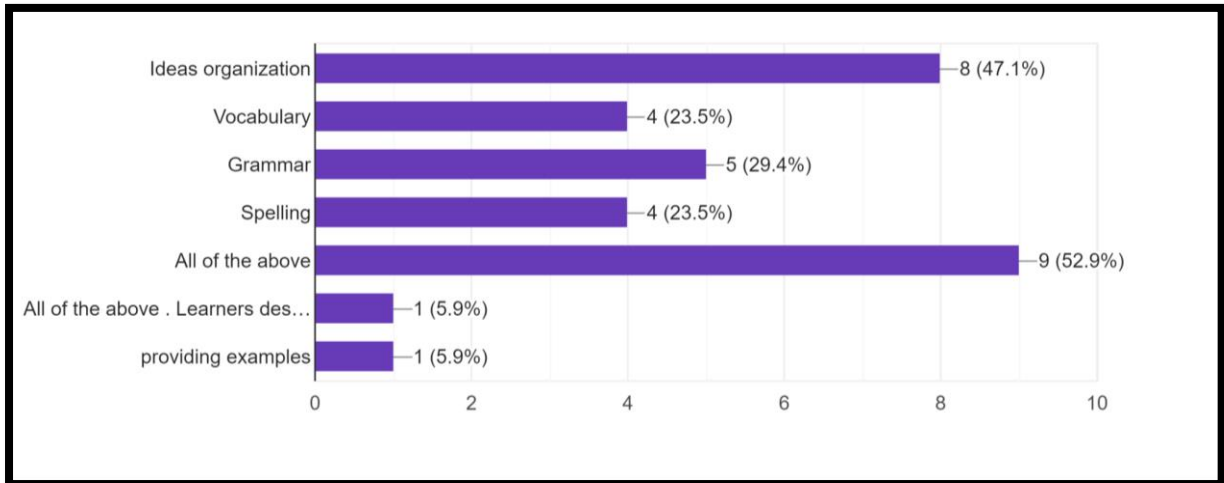
If “Yes”, do you help them editing:

Ideas organization Vocabulary Grammar

Spelling All of the above Other:.....

Figure 33

Teachers' Areas of Guidance to EFL Students



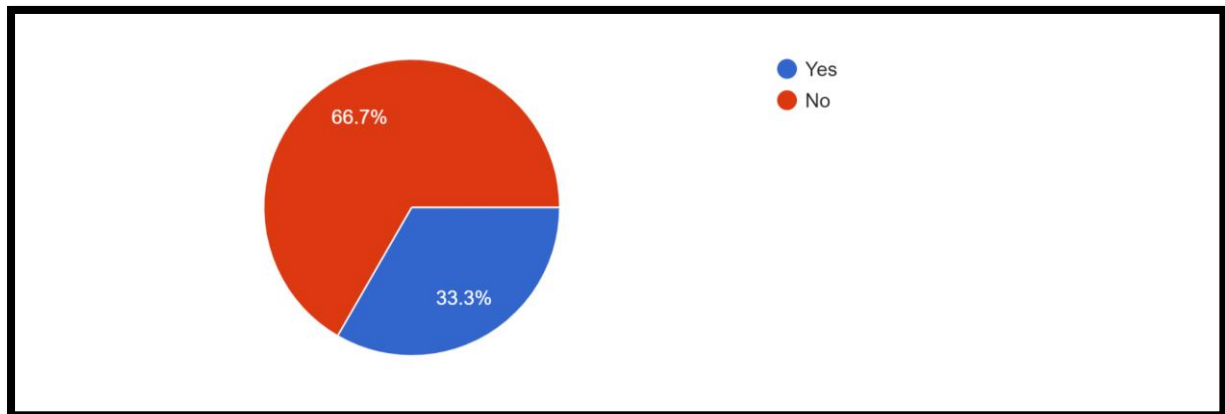
The figure demonstrates the areas that teachers help their students in while writing. 52.9% of the participants claimed that they assist learners in ideas organization, vocabulary, grammar, and spelling since they are the common aspects that students struggle with. Additionally, 47.1% stated that they help learners in ideas organization while 29.4% provide guidance in grammar. Vocabulary, and spelling are also among the areas that teachers assist their learners in with a similar percentage of 23.5%, and only 5.9% said that their aid could be in the form of providing examples.

Question 7: Do you think the current methods of teaching written expression are convenient? Justify your answer.

Yes No

Figure 34

Teachers' Attitudes towards the Convenience of the Current Methods of Teaching Writing



The results obtained from the data showed that 66.6% of the respondents are not satisfied with the current methods of teaching writing because of many reasons. Teachers claimed that the traditional methods should be updated and revised because they are demotivating and do not meet with the learners' needs. Moreover, the EFL classroom at the university does not foster efficient learning due to the limited number of written expression sessions, and the classes are too crowded for teachers to provide detailed feedback on the writing of students.

Furthermore, the current methods of teaching writing do not help students overcome their writing difficulties since they do not adopt themselves to the new developments and theories related to the learner as an individual as justified by one of the teachers,

“Since we repeatedly receive learners with several writing issues, MA2 learners, to mention an example, struggle to write in a flowy, compelling way, though they have been under the instruction of different teachers with different teaching methods. Regrettably, they proved to be inefficient for some, if not many, learners.”

Conversely, 33.3% believed that the current methods of teaching are convenient because they help learners develop their writing skills and deal with challenging concepts. Some teachers claimed that they are obliged to use these methods because there are no other alternatives.

Few respondents took a neutral side regarding the convenience of the teaching methods because the teacher should be eclectic in choosing the suitable methods that align with their students' needs and capacities. In this respect, one teacher said,

“My answer is neither 'yes' nor 'no'. It is just “to some extent”. In fact, there is no common convenient method to teach writing since every teacher uses his/her own method and depending on the level and needs of his/her learners.”

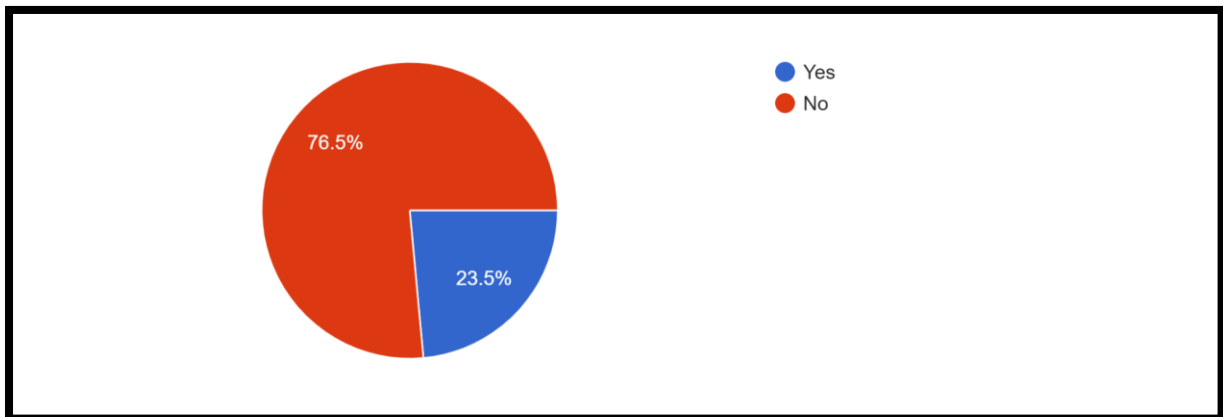
Question 8: Do you find the process of assessing written products easy?

Yes No

If "No", explain why?

Figure 35

Teachers' Opinions about the Process of Assessing Written Products



76.5% of the teachers declared that assessing learners' written products is a complex process that requires careful consideration and expertise, and only 23.5% stated the opposite.

Participants explained the difficulty of writing assessment by stressing on the fact that it is time and effort consuming especially that many aspects and criteria will be taken into account, and there is no fixed rule for the evaluation of content. Teachers stated,

“It is not that easy task since writing is a complex process, when you write you should pay attention to many areas: grammar, spelling, punctuation, cohesion, and coherence, structure....and most student unfortunately have problems within these areas, so when correcting a piece of writing all these things should be assessed.”

“You need to pay attention to every detail and take into consideration all the aspects of writing. The more factors you consider for the assessment the more difficult the task will be.”

Additionally, some respondents linked the difficulty of assessment to the variety of students' writing styles particularly in creative writing or open-ended tasks, making it harder to establish standardized criteria for assessment. There can be also a kind of subjectivity from teachers that may result in unfair evaluation.

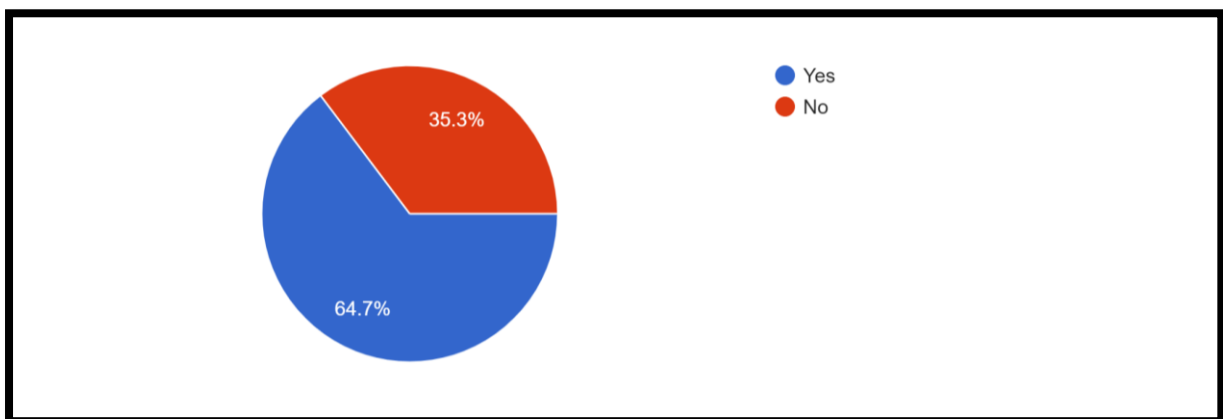
Section Two: EFL Teachers' Attitudes towards AI Use in Teaching and Learning Writing Skills

Question 9: Are you familiar with AI writing tools?

Yes No

Figure 36

Teachers' Awareness of AI Writing Tools



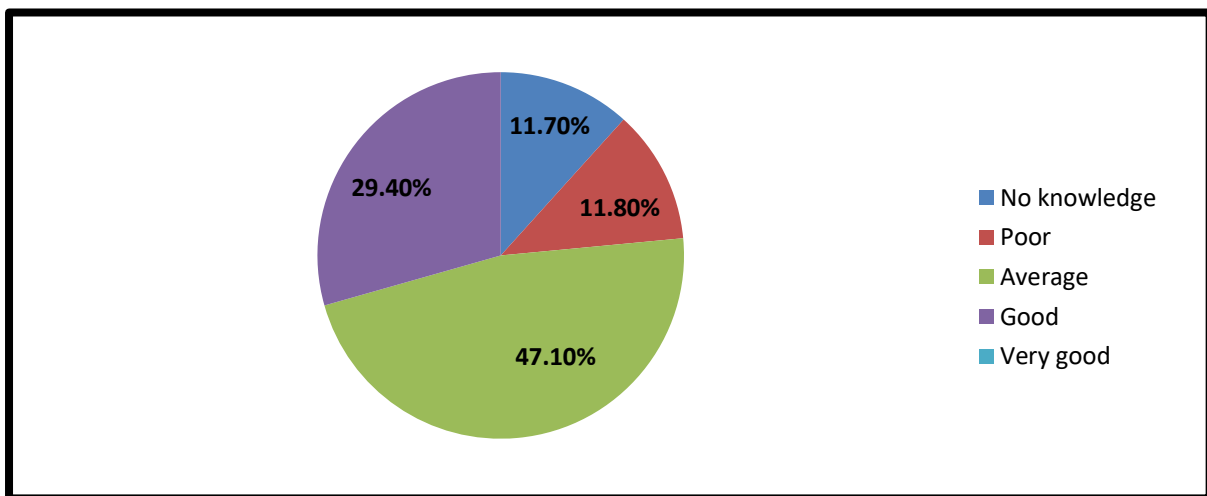
We can observe through the figure above that more than half of the respondents are familiar with AI writing tools with a rate of 64.7%, and only 35.3% claimed that they are unaware of such concept. This reflects the popularity of AI in general and AI writing tools in particular among EFL teachers.

Question 10: How would you rate your knowledge about AI-based applications for EFL teaching?

No knowledge Poor Average Good Very good

Figure 37

Teachers' Knowledge of AI-based Applications for EFL Teaching

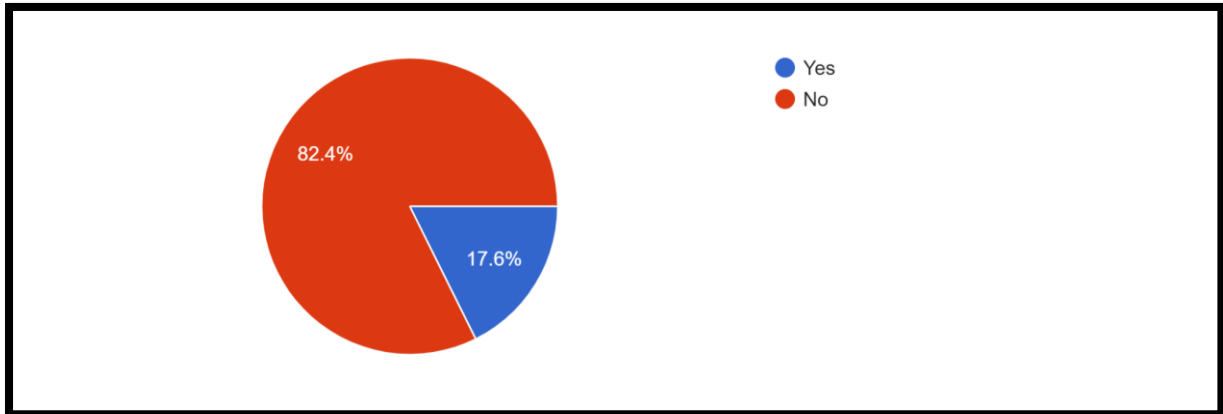


It is apparent from the figure above that a significant number of teachers know about AI applications that can be used in EFL context, and their knowledge ranges between average and good with percentages of 47.1% and 29.4%, respectively. On the other hand, some teachers showed their poor knowledge of these tools with a rate of 11.8% and 11.7% did not know about them at all.

Question 11: Have you ever used any AI writing tool in teaching writing before?

Yes No

If "Yes", what are they?

Figure 38*Teachers' Use of AI Writing Tools*

The vast majority of teachers stated that they had never used AI writing tools in teaching writing with a rate of 82.4% since AI is a new concept that has been integrated in the field of education. Nevertheless, only 17.6% confirmed their use of these applications.

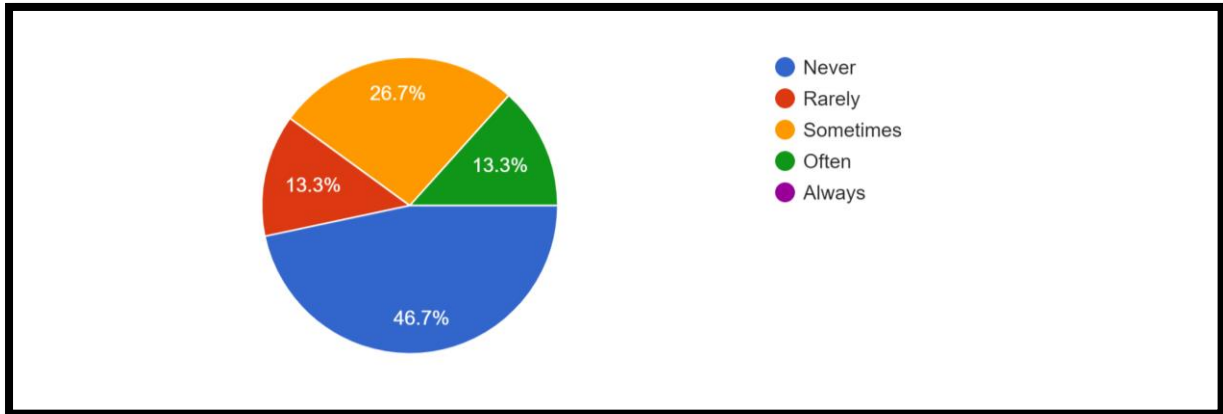
Respondents, who ticked “Yes”, listed a set of AI writing applications that they are relying on while teaching writing including ChatGPT, Wordtune, Semantic Scholar, AI Writer, Bard AI, Twee that offers free lesson plans, Forefront AI, and MailAI.

Some teachers did not answer the question because they rarely teach the writing skill as justified by one of them,

“Honestly, teaching writing has never been on my agenda, and I am answering as a teacher who constantly assesses and observes learners' written productions, be they homework assignments or exam papers. This justifies why I answered the previous question negatively.”

Question 12: How often do you use AI writing tools?

Never Rarely Sometimes Often Always

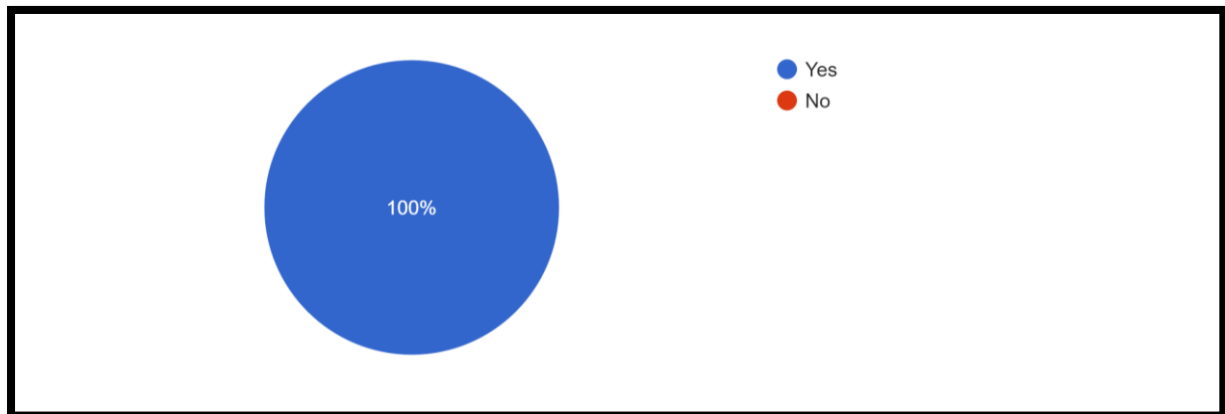
Figure 39*Teachers' Frequency of Using AI Writing Tools*

As it is displayed in the figure above, 46.7% of the participants declared that they have never used AI writing applications, which is confirmed in the previous question. Some teachers the options “Rarely” and “Often” with a similar percentage of 13.3% whereas 26.7% said that they sometimes use these tools.

Question 13: Do EFL students use AI writing tools?Yes No

Figure 40

Teachers' Opinions about EFL Students' Use of AI Writing Tools



As it is illustrated in the figure above, all of the participants agreed on the fact that their students use AI writing tools, which reflects how much interested learners are in this new technology.

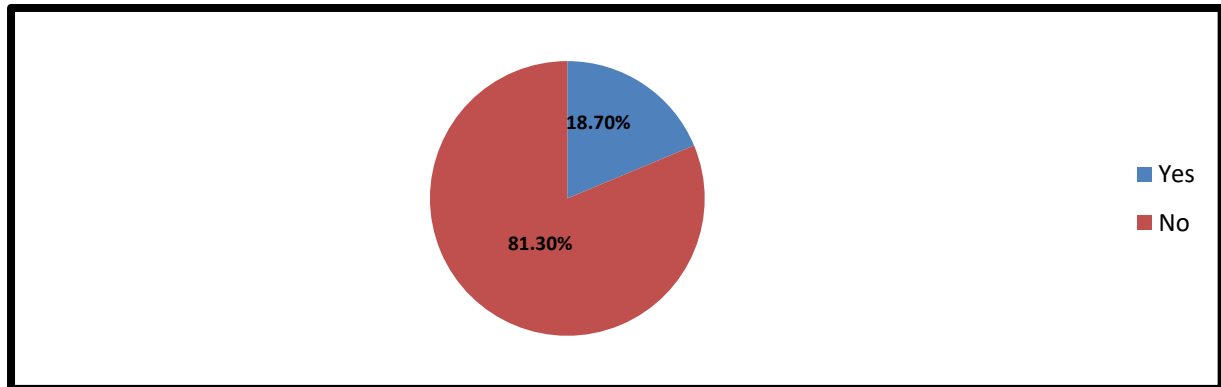
Question 14: Do you encourage EFL students to use AI writing tools in doing their writing assignments? Justify your answer.

Yes

No

Figure 41

Teachers' Support of EFL Students to Use AI Writing Tools in Doing Writing Assignments



It is apparent from the figure above that the vast majority of teachers did not encourage their students to depend on AI writing applications in doing their assignments with a rate of 81.3%. Participants claimed that the aim behind writing is to evaluate the learners' abilities so they can identify their weaknesses and develop them. One of the teachers pointed,

“They should rely on themselves and their abilities to figure out their weaknesses, work harder to overcome them, and develop their writing in the end. The use of AI writing will make assignments useless.”

Additionally, using AI in writing should be supervised, and it is difficult to do so because students are not using them wisely. Teachers also stressed on how AI applications encourage laziness and kill creativity and critical thinking since learners will put no effort in their assignments; they will simply ask the machine, and it will write everything for them. Some respondents even mentioned how these applications become a tool for cheating and not for learning as justified by one of the teachers,

“They will be passive learners and such tools hinder their creativity in case of any overuse.”

However, only 18.7% declared that they did encourage students to use these tools in doing their writing assignments for many reasons, the most important of which is the time constraints. As it is stated earlier, teachers are running out of time, so these tools will assist them in different tasks including providing feedback. Because learners are sometimes asked to write outside the classroom; hence, they can rely on AI applications to get immediate feedback or some ideas especially if they are stuck in the pre-writing stage.

Moreover, teachers clarified that they encourage their learners to integrate these tools as long as they will not use them blindly. For instance, they can take ideas generated by AI and reformulate them to add their own touch. In the same train of thought, participants stated,

“AI is a good tool to help students enhance their writing products especially when it comes to organizing their structure and check grammar and spelling.”

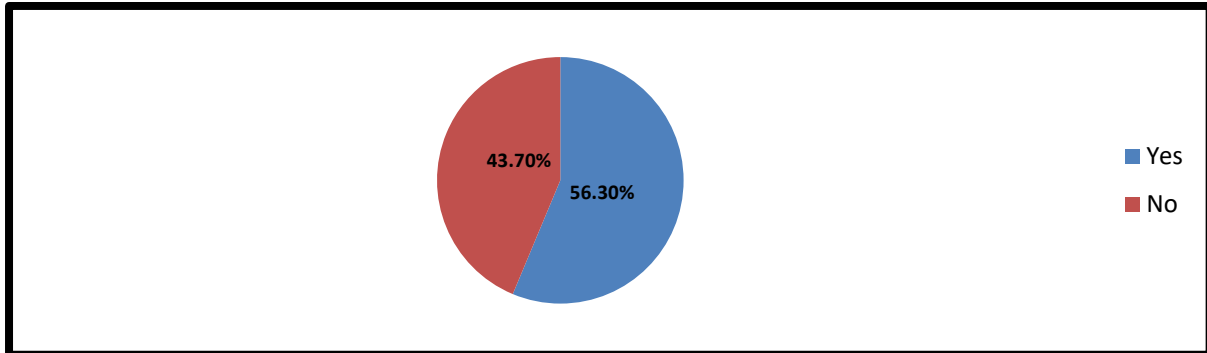
Question 15: Do you think that making learners aware of AI writing tools is essential in writing?

Yes

No

Figure 42

Teachers' Opinions about Raising Students' Awareness of AI Writing Tools



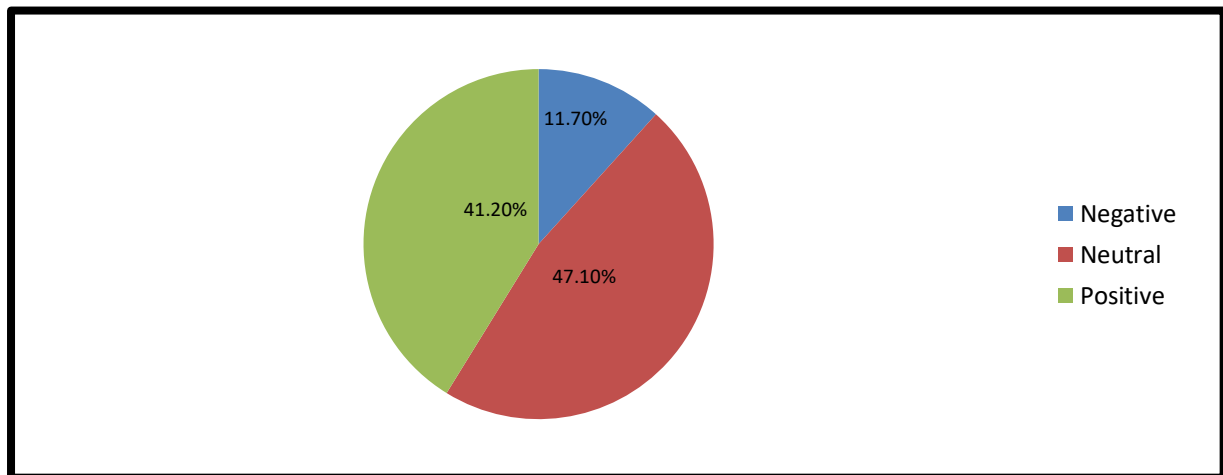
The percentages that represent teachers' opinions about the necessity of making learners aware of AI tools that can be integrated in writing were almost approximate, in the sense that 56.3% of the respondents expressed their willingness to raise students' awareness of these applications while 43.7% expressed the opposite.

Question 16: What is your attitude towards the idea of integrating AI tools in teaching and learning writing skills? Explain why?

Negative Neutral Positive

Figure 43

Teachers' Attitudes towards the Idea of Integrating AI tools in Teaching and Learning Writing Skills



As it is illustrated in the figure above, 47.1% of the participants took a neutral stance regarding the idea of integrating AI tools in teaching and learning writing because they cannot guarantee the effectiveness of these tools as justified by one of the teachers,

“I am not sure whether they will benefit of AI tools or it will harm their learning process.”

Besides, they claimed that incorporating AI applications in teaching can be helpful, but they may backfire when it comes to learning. Therefore, it is too early to make a judgement because many studies should be conducted on the effects of such tools on students' learning and achievements. One respondent stated,

“Though I stood neutral regarding this question, I need to vocalize the fact that I may encourage it if it is used appropriately by both teachers and learners.”

On the contrary, 41.2% had a positive attitude towards the use of AI tools in teaching and learning writing. They help teachers easily detect errors in grammar, syntax, and punctuation. They may also recommend changes to enhance vocabulary, clarity and sentence structure. Therefore, AI tools are time-savers for teachers, allowing them to focus more on complex aspects like content and style as emphasized by one of the teachers,

“I believe that technology can only be a plus in teaching and learning alike, therefore, integrating AI tools will be the moving standard in learners' development either academically or professionally.”

Furthermore, participants stated that these applications provide rubrics for assessment, and motivate learners to ameliorate their writing. Other respondents claimed that AI-based tools could be helpful in writing if they are used appropriately.

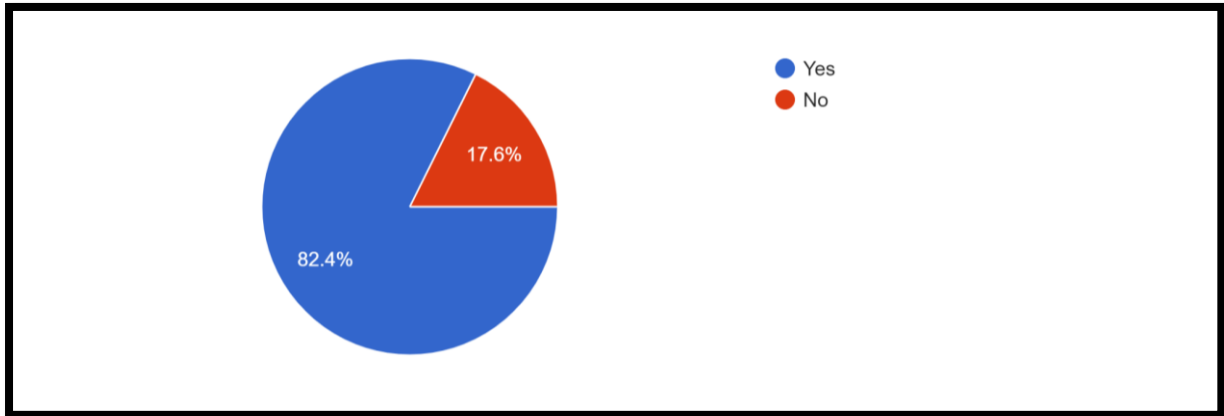
Only 11.7% of the respondents showed a negative attitude concerning this concept. They defended their position by saying that these tools encourage learners to be passive as they just copy-paste what they find without thinking and understanding.

Question 17: Do you think that using AI writing tools can be helpful in teaching writing?

Yes No

Figure 44

Teachers' Opinions on whether Using AI Writing Tools can be Helpful in Teaching Writing



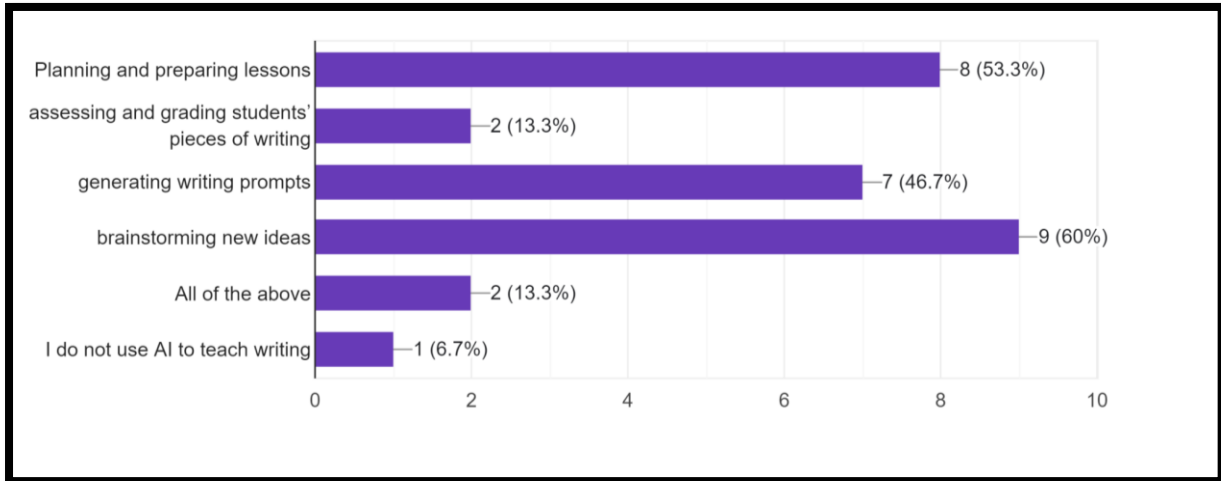
The results obtained from the data showed that 82.4% of the participants believed that using AI writing tools could be helpful in teaching writing because of the advantages that teachers mentioned. Nevertheless, 17.6% claimed that these applications do not help at all in teaching writing.

Question 18: What are the different tasks you do with the assistance of AI writing tools in teaching writing? (You can tick more than one box).

- Planning and preparing lessons
- Assessing and grading students' pieces of writing
- Generating writing prompts
- Brainstorming new ideas
- All of the above
- Other:.....

Figure 45

Tasks performed by Teachers with the Assistance of AI Writing Tools in Teaching Writing



As clearly seen, 60% of teachers use AI writing tools to brainstorm new ideas that can be used in written expression courses, and 53.3% use them for planning and lessons. Besides, 46.7% of the respondents claimed that AI assists them in generating writing prompts that facilitate the writing process for learners. Some teachers 13.3% stated that the assessment and grading of students' pieces of writing becomes easier thanks to AI applications. Moreover, 13.3% believed that these tools help them in doing all of the aforementioned tasks whereas a minority declared that they did not use these tools in teaching writing with a rate of 6.7% which determines that AI is relied on by the majority of teachers for generating prompts and ideas, assessment, and lesson design.

Question 19: How confident are you in the ability of AI tools to support students' writing performance?

Not confident

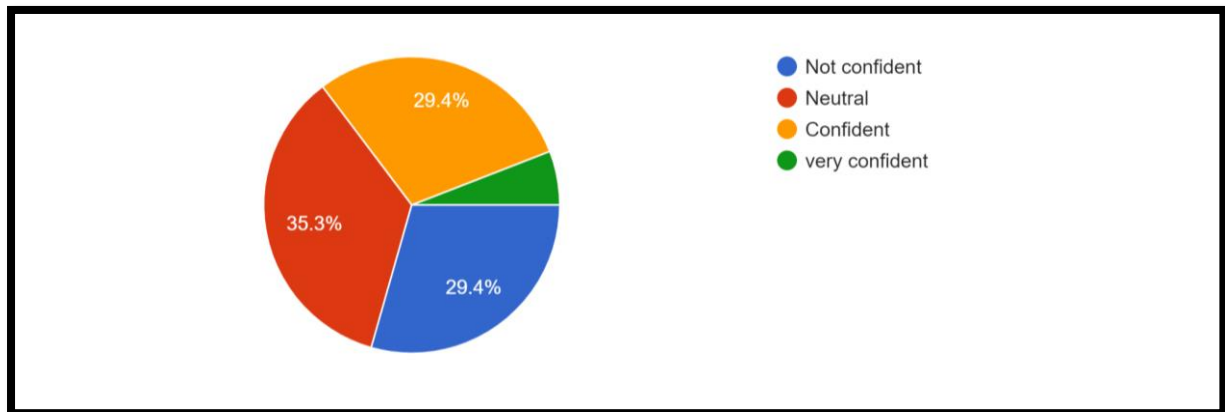
Neutral

Confident

very confident

Figure 46

Teachers' Confidence in the Ability of AI Tools to Support Students' Writing Performance



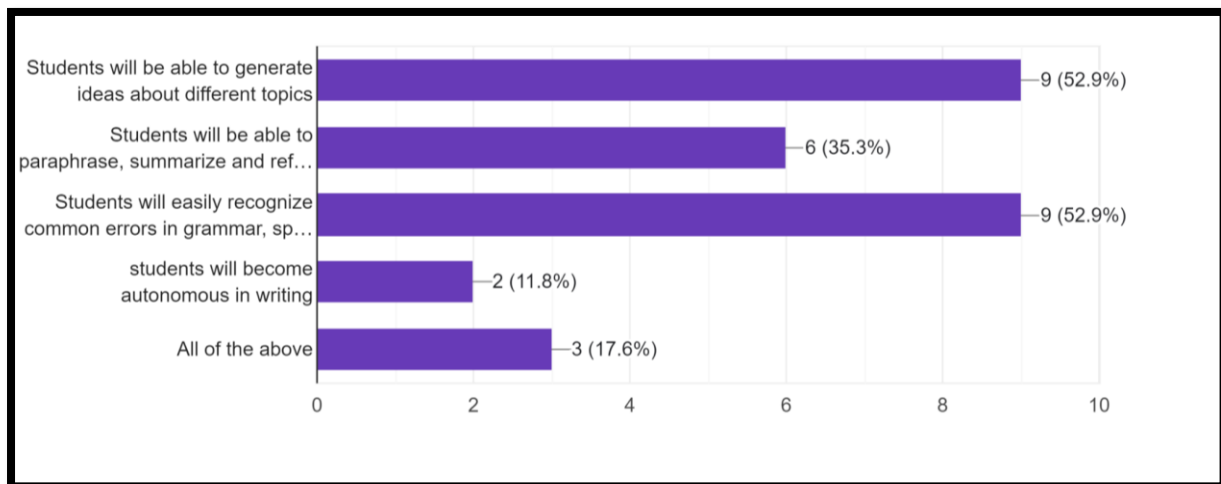
The results obtained from the data showed that 35.3% of the participants took a neutral position on whether they were confident in the ability of AI tools to support students' writing performance, which is similar to those who had a neutral attitude towards AI writing applications. Likewise, teachers who expressed a positive attitude stated that they were confident in the services that these tools offer to learners with a rate of 29.4%, and only 5.9% expressed their extreme confidence. However, 29.4% of the respondents who had a negative attitude concerning AI declared that they were not confident in the ability of AI applications to support students' writing performance.

Question 20: How can AI tools develop EFL students' writing performance? (You can tick more than one box).

- Students will be able to generate ideas about different topics
- Students will be able to paraphrase, summarize and refine sentences for enhanced effectiveness
- Students will easily recognize common errors in grammar, spelling, punctuation and syntax
- Students will become autonomous in writing
- All of the above

Figure 47

Teachers' Perceptions on how AI Develops EFL Students' Writing Performance



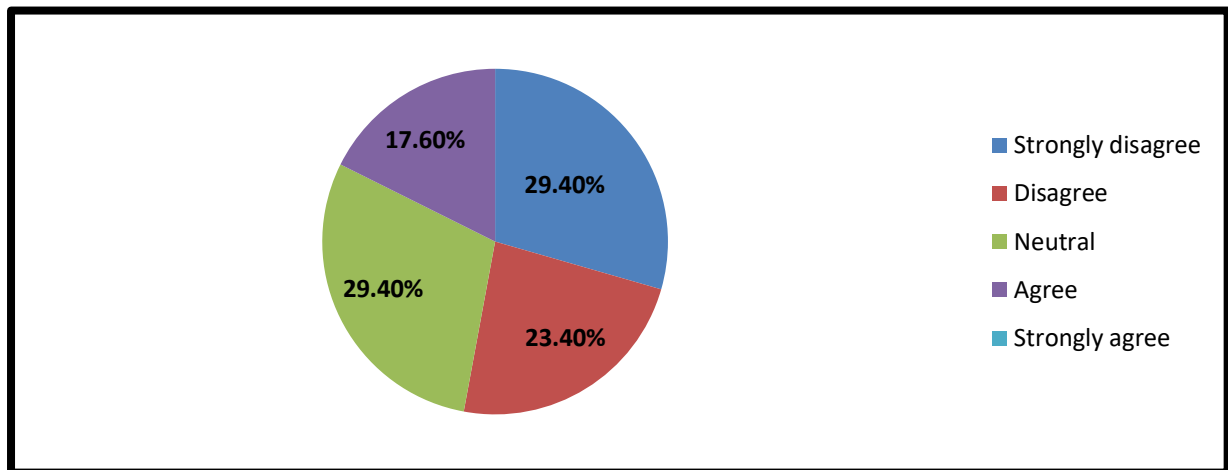
As it is manifested above, 52.9% of the teachers pointed that AI helps learners generate ideas about different topics, and a similar percentage went for participants who said that AI tools assist learners to easily recognize common errors in grammar, spelling, punctuation, and syntax. Moreover, 35.3% of the participants claimed that AI facilitates the process of paraphrasing and summarizing written texts in addition to refining sentences for enhanced effectiveness. According to 11.8% of teachers, students will become autonomous in writing when using AI tools while 17.6% stated that AI develops learners' writing proficiency in all of the above-mentioned areas.

Question 21: In your opinion, do you think that AI writing tools can replace human editors or proofreaders? Justify your stance.

Strongly disagree Disagree Neutral Agree Strongly agree

Figure 48

Teachers' Opinions about the Ability of AI Writing Tools to Replace Human Editors and Proofreaders



We can observe through the pie-chart, 29.4% of the teachers strongly disagreed with the statement because AI cannot replace human intelligence since it is actually developed by humans themselves as justified by one of the respondents,

“Since there is a touch of a human being in the writing so there must be a human touch in the editing and proofreading.”

The participants further argued that AI writing tools lack the nuanced understanding, creativity and critical thinking skills that human editors and proofreaders possess, and they suggested that a combination of AI tools and human editors would be the most effective approach to produce high-quality writing. Some teachers stated,

“AI and human editors will likely work together in a complementary fashion. AI will handle the mundane tasks, while human editors will focus on the creative, strategic aspects of editing.”

“AI tools can help with initial suggestions and corrections, but human editors and proofreaders are essential for providing the final polish and ensuring that the writing meets the desired standards of quality and coherence.”

In the same vein, 23.4% of the teachers expressed their disagreement claiming that AI cannot replace the monitoring attribute of humans as they sometimes yield wrong and unreliable information. Moreover, when dealing with humans, we will get more than one opinion and receive different pieces of advice and suggestions. One of the teachers stated,

“AI tools can assist or help the human editors, but never replace them.”

Some teachers were neutral regarding this idea with a rate of 29.4%. AI writing applications are quite capable of editing, but this process frequently incorporates social and cultural factors, which AI tools lack the capacity to handle. Other teachers did not provide justifications as they have never used them, so they cannot provide a consistent answer.

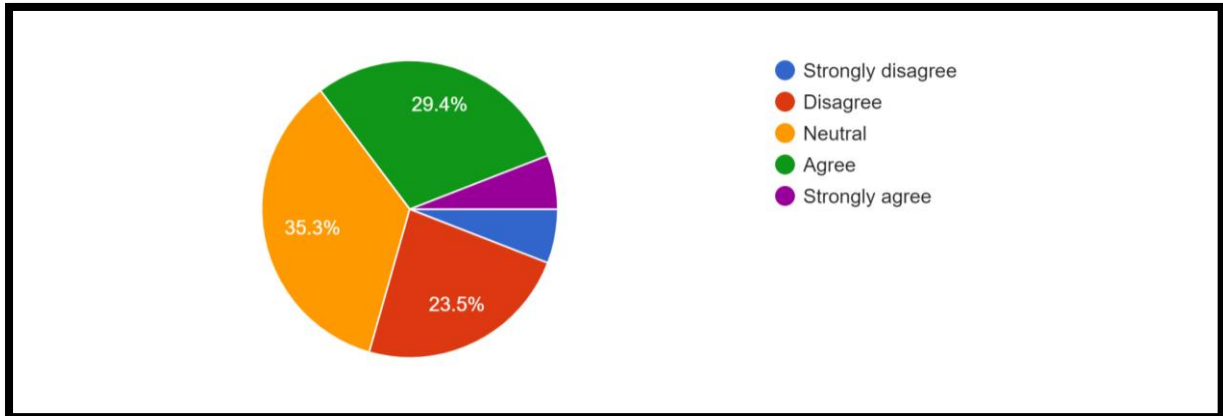
Only 17.6% agreed with the fact that AI can replace human editors and proofreaders since it highlights all the issues and areas of mistakes.

Question 22: Do you agree with the statement “AI writing tools’ implementation will reduce the teachers’ workload”?

Strongly disagree Disagree Neutral Agree Strongly agree

Figure 49

Teachers' Opinions about AI Writing Tools' Ability in Reducing Teachers' Workload



As it can be noticed, 35.3% of the teachers took a neutral position concerning the ability of AI writing tools in reducing the workload while 29.4% expressed their agreement towards this idea because of the useful services they receive from these tools. Similarly, 5.9% of the respondents showed that they strongly agree with the statement; however, the same percentage represents those who strongly disagreed with it. Likewise, 29.4% disagreed with the fact that AI can reduce the teachers' workload.

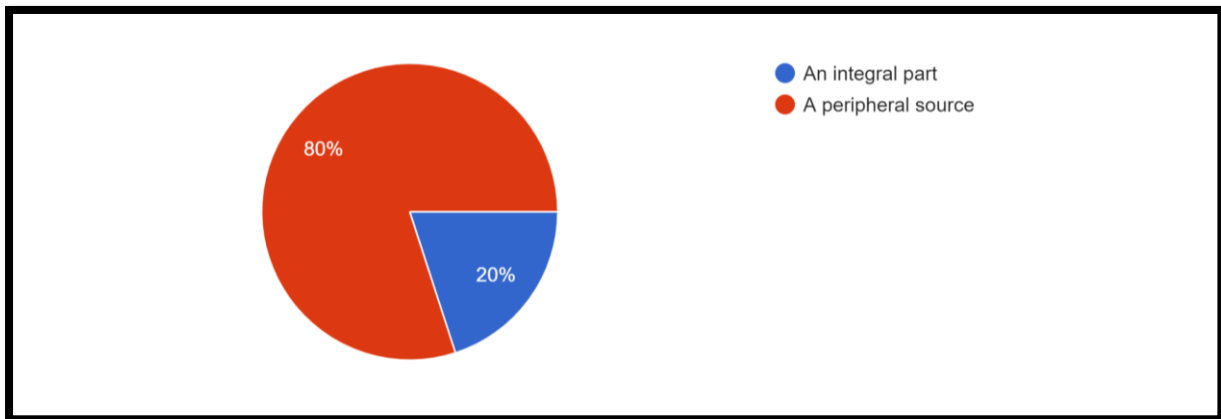
Question 23: AI tools in teaching and learning writing must be:

An integral part A peripheral source

Justify your answer.

Figure 50

AI Tools' Value in Teaching and Learning Writing



Eighty percent of the participants declared that AI tools must be a peripheral source in teaching and learning writing. They justified their opinion by saying that EFL students should be guided and monitored by teachers inside classes. Outside the classrooms, they are urged to boost their writing skill by themselves by using specific AI tools as a reinforcement manner. Additionally, since AI is still relatively new to the area, we must be cautious when judging its worth in the teaching profession. One of the respondents mentioned,

“Relying solely on these tools will limit creativity and students' will to challenge themselves and learn more.”

“If there is no training for teachers and no control over the use of these tools by learners, then it will be better if these tools remain peripheral.”

Besides, teachers believed that AI writing tools should be used as a facilitator rather than the main tool of instruction as explained by some of the participants,

“AI is a powerful tool, but it shouldn't replace teachers. Instead, it should be used to supplement their instruction and free them up to focus on what they do best: guiding and inspiring students.”

On the other hand, 20% of the teachers pointed that AI must be used as an integral part in teaching and learning writing because it will help learners and teachers and facilitate their tasks by providing learners with new ideas and supporting teachers in assessment.

Question 24: What are the best tips for using AI writing tools effectively and responsibly for EFL writing?

This was a concluding question that seeks to summarize teachers' tips and recommendations for using AI tools effectively and responsibly in EFL writing. Almost all of the participants emphasized on a common point that AI writing applications should be used wisely and ethically as mentioned by one of the teachers,

“Moderation is a key.”

Moreover, providing training for both EFL teachers and students is mandatory to guarantee the successful incorporation and use of these tools. Furthermore, teachers need to supervise the use of AI applications inside the classroom while providing appropriate tasks that align with the objectives of the integration.

Additionally, teachers claimed that it is crucial to raise learners' awareness of AI writing tools and their impact, and it will be better if they do not use them until they develop their writing skills with the help of teachers. Stated differently, students should not depend heavily on AI and use it just as a supplement as stated by one of the respondents,

“Embrace AI tools as helpers, not replacements.”

In this respect, teachers advised learners to paraphrase the content generated by AI tools and reformulate the question to confirm the correctness of the provided answer as they sometimes go out of the subject. In the same vein, AI tools can make mistakes, so students have to always proofread and edit their work for accuracy and clarity. To avoid any kind of plagiarism, they need to properly cite any information or ideas they use from AI tools or other sources.

Conclusion

This chapter presented the results obtained from the survey answered by students and the questionnaire administered to teachers at the Department of English at Chadli Bendjedid University. Data are gathered to determine their attitudes towards AI integration in teaching/learning writing and how they can affect their writing proficiency. According to the findings, we deduce that AI writing applications are used by EFL teachers and students to facilitate the teaching/learning of writing skills. These findings are going to be discussed in details in the following chapter.

Chapter Five**Discussion****Introduction**

The present chapter is devoted to the discussion of the results presented in the previous chapter. Moreover, it comprises four major parts that provide answers to the research questions; respectively it aims at checking the validity of the formulated hypotheses. Finally, the chapter concludes by discussing implications of the research findings, offering some recommendations concerning the successful and effective integration of AI writing tools by EFL teachers and students at Chadli Bendjedid University, in addition to limitations of the study and suggestions for further research related to the theme of the dissertation.

Discussion of the Research Questions and Hypotheses**EFL Teachers and Students' Attitudes towards Writing Skills**

In light of the students and teachers' answers to the first section of the survey and questionnaire, it can be deduced that EFL students at the Department of English perceive writing as a challenging skill though the vast majority were interested in it and enjoyed written expression sessions. The answers of the students are compatible with teachers' answers in the questionnaire where they insisted on learners' difficulties in writing in different aspects including, but not limited to, vocabulary, content, organization, grammar, mechanics, and generation of ideas despite the teachers' assistance they receive to overcome these hurdles. In the same vein, both teachers and students agreed on the fact that the prewriting stage and writing the first draft are the most complex stages since they pave the way for learners to generate thoughts and put them into written words.

Additionally, EFL teachers at the same Department asserted that teaching writing is not an easy task because of the obstacles they encounter most notably the time constraints and the students' uneven level of writing proficiency. Indeed, educators are unable to assess learners' written works and provide them with immediate feedback since they are restricted by the curriculum and the large-class size, which exacerbates the issue. Moreover, writing abilities vary among students as we can find a combination of novice and expert writers within the same class. Consequently, teachers will find a difficulty in imparting the knowledge that meets learners' needs. Furthermore, the inadequacy of the current methods of teaching writing makes this task more intricate and does not help students overcome their writing problems.

In a nutshell, EFL teachers and students perceive writing as a difficult skill, and they encounter various problems that impede them from performing their tasks properly. As a result, AI writing tools are viewed as facilitators that can be incorporated in the EFL teaching and learning process.

Question One

The first question was set to gain insights into students' attitudes towards the implementation of AI tools in teaching and learning writing skills.

The results obtained from the students' survey and teachers' questionnaire revealed that the majority of EFL learners used AI writing applications in their learning, which confirms their awareness of AI as a new concept. This popularity is thanks to social media that has been the most popular way for students to learn about AI writing tools since most of them have accounts on several media platforms where information can be shared more quickly and easily in addition to advertisement and recommendations from classmates and teachers.

As shown in the results of the survey, some students expressed a neutral attitude towards the integration of AI tools in teaching and learning writing while others had a positive attitude

regarding this idea. The main reason that led learners to stand neutral is that AI is still a new trend, so it is quite early to make judgements about this topic, and many studies should be conducted to guarantee its effectiveness. Additionally, AI writing tools can be beneficial and useless at the same time depending on how students will use it; hence, it is difficult to make decisions on whether AI will positively affect their writing skills.

According to students, who showed a positive attitude, AI is considered as a helping tool and has proven its effectiveness in teaching and learning writing. AI writing applications not only help teachers and learners detect common errors in grammar and spelling, for instance, but also assist them in generating ideas, enlarging their linguistic repertoire, and receiving immediate feedback, and this is aligning with Hang (2023). Therefore, AI tools save time and effort as they are available anytime and anywhere. Moreover, they can be advantageous for learners who face psychological problems like shyness or the fear of being judged in front of their peers because they will not feel embarrassed when getting negative comments.

Nevertheless, it is worth mentioning that a minority expressed a negative attitude claiming that AI tools encourage learners to be passive and decrease their thinking skills and creativity.

It can be concluded that most of EFL students at Chadli Bendjedid University had a satisfying experience with AI writing tools, and they recommend other students to integrate them in their learning. As a consequence, the first hypothesis, which states that EFL students have a favourable attitude towards AI incorporation in teaching and learning writing, is proved to be true as learners confirmed how much beneficial AI writing applications are.

Question Two

The second question was set to gain insights into teachers' attitudes towards the implementation of AI tools in teaching and learning writing skills.

Based on the responses to the administered questionnaire, it can be inferred that most of EFL teachers are familiar with AI writing applications, and they do have enough knowledge about them.

The results obtained from the questionnaire showed that teachers' attitudes towards the integration of AI in teaching and learning writing were varying between neutral and positive with approximate percentages, the fact that pushed the researchers to state both positions because they are worth mentioning and to avoid any kind of bias. The reasons that led teachers to take a neutral stance are similar to those of students, most commonly the difficulty of making a judgement concerning the efficacy of these applications. In other words, AI is a double-edged sword; it can be beneficial as long as it is used reasonably and appropriately.

From a positive perspective, a significant number of teachers had a favourable attitude and believed that AI tools are helpful in teaching writing. They emphasized the necessity of raising learners' awareness of AI tools in writing because of many reasons. Teachers can quickly identify grammatical, syntactic, and punctuation mistakes. Additionally, these applications might suggest modifications to improve sentence structure, vocabulary, and clarity. Thus, time will be saved for teachers to focus on more important elements like content and style. This was also highlighted by Harry (2023) who pointed that AI can automate repetitive tasks in order to avoid time and effort consuming.

Additionally, assessing written products of students with different levels of achievement has proven to be challenging, let alone the various criteria that should be taken into account; hence, AI writing tools will facilitate this process by providing rubrics for assessment as it was emphasized by Mureşan (2023). Also, teachers' responses indicated that they rely on AI-based tools in performing other tasks such as generating writing prompts, generating new ideas, and planning lessons. Therefore, it can be deduced that AI has the potential of reducing teachers' workload.

Furthermore, it should be noted that only a few number of teachers did not encourage their learners to rely on AI applications in doing writing assignments because the purpose of writing is to assess students' abilities so they can recognize and strengthen their areas of weakness. Besides, any overuse of these tools may engender in a total loss of creativity and critical thinking and a motive for laziness.

As a result, the second hypothesis, which states that EFL teachers have a positive attitude towards AI incorporation in teaching and learning writing, is proved to be true because teachers claimed that AI tools are useful as they develop learners' writing performance and facilitate the process of teaching writing skills.

Question Three

The third question was set to determine the extent to which AI applications influence EFL students' writing skills.

Through students' survey and teachers' questionnaire, it is confirmed that AI tools have a vital role in facilitating the writing process and improving learners' writing abilities. Results indicated that these applications assist them in writing from the starting point until the final stage. More particularly, AI applications such as ChatGPT, Gemini, and Sudowrite help learners generate ideas about different topics, preventing them from being stagnated during the prewriting stage. When students feel at ease right from the beginning, they will be more motivated to carry on writing. Consequently, it can be deduced that AI writing tools have a significant role in increasing learners' motivation and engagement throughout the writing process.

Because learners struggle to proofread their pieces of writing especially for beginners, AI applications will help them in the editing and revising stages by detecting and correcting errors in grammar, mechanics (spelling, punctuation, and capitalization), not to mention the

ability of enhancing the clarity, coherence, and cohesion of texts. Research-wise, generating accurate citations, paraphrasing, and summarizing written texts become easier thanks to AI writing tools like Quillbot, AI summarizer, and many others. It can be inferred that AI applications increase EFL learners' autonomy in writing as it is compatible with Rukiati et al. (2023) who emphasized that students will be responsible of their own learning when they rely on AI tools.

However, this does not mean that AI may backfire when it comes to learning the fact that led teachers to emphasize the use of AI writing tools as a peripheral source and not as a main medium of instruction. This is in line with Luckin et al. (2016) who claimed that teachers should not be replaced by AI tools but rather they should be in charge of deciding how and when to employ them. Basically, there is no machine that can replace human mind and creativity especially in proofreading and editing due to different contexts of the English language. If learners do not use these applications wisely, they will never improve their writing proficiency.

Therefore, the third hypothesis, which states that AI applications have a positive impact on EFL students' writing skills and help them improve their writing abilities, is proved to be true, and this evident in the various services offered by AI tools, which learners can benefit from as long as they use them properly.

Implications of the Study

Our findings imply that AI integration in the education sector in general and in the EFL context in particular has made an incredible shift in the teaching/learning process. This new technology is able to create an engaging and stimulating atmosphere that upgrades teachers and learners' competencies and skills through various tools and applications. Moreover, it helps educators adjust their teaching philosophies and methodologies to ensure better learning experiences for their students.

The results, also, implied that writing is regarded as a challenging skill to be taught and developed. On the one hand, students find difficulties in producing well-formed written products because many writing-related aspects must be mastered, and on the other hand, teachers struggle to find the convenient methods that enhance learners' writing proficiency and fit their needs and expectations.

Additionally, the technological advancement and the digitization that the Algerian higher education seeks to establish urged practitioners to cope with AI technology and integrate it in educational settings. Therefore, EFL learners and teachers at Chadli Bendjedid University incorporated AI writing tools in their agenda to facilitate the teaching and learning of writing skills.

To increase learners' autonomy and mitigate teachers' workload, there should be a successful implementation of AI writing applications, and this can be achieved by raising their awareness of the efficient way to use these tools in order to guarantee satisfactory results because there are some teachers who do not know about AI tools at all. Besides, it is mandatory to equip teachers and students with the necessary guidelines and tips to avoid any overuse of such applications that may engender in negative consequences. Further studies should be carried out to investigate the reasons that led some teachers and students to adopt a neutral attitude towards AI integration in the EFL context.

Limitations of the Study

While carrying out this research study, we came across a number of limitations that should be noted. Initially, EFL students at the Department of English were not cooperative as it is expected; almost more than half of the participants did not respond to the survey though it was online, so they were not restricted by time. More importantly, students did not provide justifications where it was needed, and some of the participants left the questions blank

(especially open-ended questions). Moreover, it was noticed through learners' results that they were confused and could not make up their minds concerning their attitudes towards AI integration in teaching and learning writing. On the one hand, they expressed a neutral attitude towards AI, and on the other hand, 80% of the respondents claimed that AI writing tools are effective. Consequently, it was difficult to end up with a clear conclusion without any misunderstanding. Another limitation, unfortunately, some teachers could not respond to the questionnaire given to them; thus, only 17 out of 24 teachers responded. Teachers are overwhelmed with workloads, exams, supervision and doing their own research, all of that result in not having time to answer the questionnaire. Finally, some of them claimed that they are not specialized in teaching written expression module.

Recommendations for the Research Findings

On the basis of the study results, a set of recommendations can be offered to EFL teachers and students:

- Having discovered that AI applications have a positive impact on the teaching/learning of writing skills, EFL teachers and students should integrate these tools in their teaching practices and learning strategies.
- In order to guarantee an effective use of AI writing applications, the latter should be accompanied with human assistance.
- Teachers should raise students' awareness on how to use AI writing tools wisely and ethically.
- Teachers should cultivate a positive attitude towards the use of AI technology in teaching/learning writing.
- It is recommended that learners should not use these tools as the only medium of learning but rather as a supporting tool to avoid any negative results.

- Learners ought to verify the accuracy of the answers offered by AI tools by reformulating the question and proofreading their pieces of writing after any use.
- In the generation of ideas, students should paraphrase the content generated by AI applications instead of copying and pasting information.
- Trainings should be provided for both teachers and learners to develop their competencies and skills concerning the successful integration of AI writing applications.

Suggestions for Further Studies

Since AI is a new trend in the education sector in general and in the EFL context in specific, further research should be carried out to delve deep in this new technology. Hence, we suggest the following:

- An experimental study is recommended to create a paradigm that will investigate the EFL teachers and students' attitudes, competence, and performance and measure pedagogically-aware AI use in teaching/learning writing. In this respect, significant AI literacy and AI trust models can be used such as the Unified Theory of Acceptance and Use of Technology (UTAUT), the Technology Readiness Index (TRI), and the PIC-RAT model.
- Conducting the same study in other Algerian universities to gain more insights into the effect of AI on EFL students' writing skills and to generalize the results.
- Future investigations are suggested to explore the challenges and factors that may impede the successful incorporation of AI tools in the Algerian universities.
- Further studies can be conducted to investigate the ethical concerns and potential risks of integrating AI in education in order to raise learners' awareness on how they should utilize AI applications.

Conclusion

Throughout this chapter, the results are discussed and interpreted to answer the research questions and verify the hypotheses. Moreover, based on the findings and at the end of the chapter, implications of the study are provided along with the limitations that faced the researchers while conducting this research. In addition, a number of recommendations for both teachers and students about the use of AI tools in teaching and learning writing skills and suggestions for future research are highlighted.

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Appendices

Appendices

Appendix A

Students' Survey

Dear students,

This survey is a part of a master dissertation entitled “The Impact of Artificial Intelligence (AI) on English Language Teaching and Learning: Students’ Writing Skills”. It aims at gaining insights into the EFL students and teachers’ attitudes towards AI writing applications at Chadli bendjedid University, and the extent to which these tools influence the writing skills. Therefore, we kindly request you to answer the following questions honestly and accurately.

PS. The data gathered through this survey is used for research purposes only, and if you have any questions, please feel free to reach us out via e-mail: amanidahmani6@gmail.com

Thank you for your time and collaboration.

Section one: EFL Students’ Attitudes towards Writing Skills

1. What is your level of writing proficiency?

Beginner Intermediate Upper intermediate Advanced

2. How often do you write in English?

Never Rarely Sometimes Often Always

3. Do you like the module of written expression?

Yes No

4. Is writing an easy task for EFL students?

Appendices

Yes No

5. Do you find a difficulty in writing?

Yes No

If "Yes", what is the area you have difficulty with? (You can tick more than one box)

Grammar Mechanics (Spelling, punctuation, capitalization)

Vocabulary Language use Generating ideas

All of the above Other:.....

6. In the writing process, what is the most difficult stage for you?

Prewriting stage (research tools, gather and generate ideas)

Writing the first draft Revising Editing the final draft

All of the above Other:.....

Section Two: EFL Students' Attitudes towards AI Use in Teaching and Learning Writing

Skills

7. Are you familiar with the concept of AI writing applications?

Yes No

If "Yes", from where? (You can tick more than one box)

Teacher recommendation Classmate recommendation Advertisement

Social media All of the above Other:.....

8. Have you ever used any AI writing tool in your learning before?

Yes No

Appendices

If "Yes", what are they?

.....

9. How often do you use AI writing tools?

Never Rarely Sometimes Often Always

10. What is your attitude towards the idea of integrating AI tools in teaching and learning writing skills?

Negative Neutral Positive

Justify your stance

.....

.....

11. Do your teachers encourage you to use AI writing tools in doing your writing assignments?

Yes No

Justify your answer

.....

.....

12. Would you prefer your teachers to use AI tools in written expression sessions?

Yes No

Justify your answer

.....

.....

Appendices

13. How confident are you in the ability of AI tools to support your writing performance?

Not confident Neutral Confident Very confident

14. Do you find AI writing applications effective?

Yes No

Justify your answer

.....
.....

15. What specific AI writing tools' features have you found helpful in facilitating the writing process? (You can tick more than one box)

- They help you in generating ideas
- They help you in proofreading your written products (correcting spelling and grammatical mistakes)
- They help you in paraphrasing and summarizing written texts
- They help you in generating accurate citations
- They keep you motivated and engaged throughout the writing process
- They help you become autonomous learners while writing
- All of the above

16. What do you usually focus on while using AI writing tools? (You can tick more than one box)

Grammar checking Spelling checking Punctuation checking

Plagiarism checking Clarity checking All of the above

Other:.....

17. Do you agree with the statement “AI writing applications keep learners engaged and motivated throughout the writing process”?

Appendices

Strongly disagree Disagree Neutral Agree Strongly agree

18. Do you think AI writing tools can replace human editors or proofreaders?

Yes No

Justify your answer

.....
.....

19. Have you noticed any improvements in your writing skills after using AI writing tools?

Yes No

If "Yes", mention them.

.....

20. How would you assess your experience with AI tools in developing your writing compositions?

No experience Unsatisfying Satisfying Very satisfying

21. Would you recommend AI writing tools to other EFL learners?

Yes No

If "Yes", explain why?

.....
.....

Appendices

Appendix B

Teachers' Questionnaire

Dear teachers,

This survey is a part of a master dissertation entitled “The Impact of Artificial Intelligence (AI) on English Language Teaching and Learning: Students’ Writing Skills”. It aims at gaining insights into the EFL students and teachers’ attitudes towards AI writing applications at Chadli Bendjedid University, and the extent to which these tools influence the writing skills. Therefore, you are kindly invited to answer the following questions, and we hope that you will give us your full attention and interest.

PS. The data gathered through this survey is used for research purposes only, and if you have any questions, please feel free to reach us out via e-mail: amanidahmani6@gmail.com

Thank you for your time and collaboration.

Section one: EFL Teachers’ Attitudes towards Writing Skills

1. Do EFL students enjoy written expression sessions?

Yes No

2. Is writing an easy task for EFL students?

Yes No

3. Do EFL students find a difficulty in writing?

Yes No

If "Yes", what are the aspects of writing that they have problems with? (You can tick more than one box)

Appendices

Content Organization Grammar Vocabulary

Mechanics (Spelling, punctuation, capitalization) All of the above

Other:

4. What stage of the writing process do you find difficult for EFL students? (You can tick more than one box).

Pre-writing stage Writing the first draft Revising Editing

All of the above Other:.....

5. Do you find teaching writing to EFL students difficult?

Yes No

If "Yes", what are the difficulties you face while teaching writing? (You can tick more than one box).

Time constraints (especially for assessment and providing feedback)

Students' uneven level of writing proficiency Lack of materials and activities

All of the above Other:.....

6. Do you help your students when they write?

Yes No

If "Yes", do you help them editing:

Ideas organization Vocabulary Grammar

Spelling All of the above Other:.....

7. Do you think the current methods of teaching written expression are convenient?

Appendices

Yes No

Justify your answer

.....
.....

8. Do you find the process of assessing written products easy?

Yes No

If "No", explain why?

.....
.....

Section Two: EFL Teachers' Attitudes towards AI Use in Teaching and Learning Writing Skills

9. Are you familiar with AI writing tools?

Yes No

10. How would you rate your knowledge about AI-based applications for EFL teaching?

No knowledge Poor Average Good Very good

11. Have you ever used any AI writing tool in teaching writing before?

Yes No

If "Yes", what are they?

.....

12. How often do you use AI writing tools?

Never Rarely Sometimes Often Always

Appendices

13. Do EFL students use AI writing tools?

Yes No

14. Do you encourage EFL students to use AI writing tools in doing their writing assignments?

Yes No

Justify your answer

.....
.....

15. Do you think that making learners aware of AI writing tools is essential in writing?

Yes No

16. What is your attitude towards the idea of integrating AI tools in teaching and learning writing skills?

Negative Neutral Positive

Explain why?

.....
.....

17. Do you think that using AI writing tools can be helpful in teaching writing?

Yes No

18. What are the different tasks you do with the assistance of AI writing tools in teaching writing? (You can tick more than one box).

Planning and preparing lessons Assessing and grading students' pieces of writing

Appendices

Generating writing prompts Brainstorming new ideas

All of the above Other:.....

19? How confident are you in the ability of AI tools to support students' writing performance?

Not confident Neutral Confident very confident

20. How can AI tools develop EFL students' writing performance? (You can tick more than one box).

- Students will be able to generate ideas about different topics
- Students will be able to paraphrase, summarize and refine sentences for enhanced effectiveness
- Students will easily recognize common errors in grammar, spelling, punctuation and syntax
- Students will become autonomous in writing
- All of the above

21. In your opinion, do you think that AI writing tools can replace human editors or proofreaders?

Strongly disagree Disagree Neutral Agree Strongly agree

Justify your stance

.....
.....

22. Do you agree with the statement "AI writing tools' implementation will reduce the teachers' workload"?

Strongly disagree Disagree Neutral Agree Strongly agree

23. AI tools in teaching and learning writing must be:

Appendices

An integral part

A peripheral source

Justify your answer

.....
.....

24. What are the best tips for using AI writing tools effectively and responsibly for EFL writing?

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