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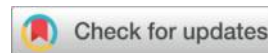
# The Impact of AI on Learners' Academic Writing Performance and Psychological Well-being: Case of Master 2 Students in the Department of English at Tlemcen University, Algeria

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**Hayat BAGUI**

Associate Professor
FLPATP Research Laboratory
Institute of Letters and Languages
Department of English
Naama University Centre - Ahmed Salhi -, Algeria
ORCID iD: 0000-0002-7849-5221
bagui@cuniv-naama.dz


**Fatima Zohra ADDER**

Associate Professor
FLPATP Research Laboratory
Faculty of Letters and Languages
Department of English
Tlemcen University, Algeria
ORCID iD: 0000-0002-7048-3939
adder.fati@yahoo.fr

## Abstract

Writing in a foreign language, such as English, often reduces learners' self-confidence and self esteem as it triggers anxiety. Recently, Artificial Intelligence has been used into foreign language education, marking a revolutionary change in teaching methods and the educational experiences of students. The use of AI in academic settings has a substantial impact on the psychological well being of EFL learners. AI-driven tools provide immersive environments, individualized learning paths, and improved feedback mechanisms that can greatly improve the language learning process. Thus, the focal point of this paper is to explores both the opportunities offered by AI leading to enhancing students' writing skill and its impact on their psychological well being in foreign language education. To do so,

an online questionnaire and an interview have been used to conduct an exploratory study based on a sample of Master 2 students who have just obtained their degrees from the English department at Tlemcen University in Algeria. This study aimed to investigate to what extent AI tools use has impacted their academic writing performance and psychological well-being while writing their Master's degree dissertations. Based on both qualitative and quantitative analysis of the data collected, the findings revealed that the majority of students use AI-powered tools in their writing tasks which led to improve the quality of their writing and psychological well-being.

**Keywords:** Academic writing performance; Psychological well-being; AI tools; EFL education; Master 2 students.

## Introduction

The integration of Artificial Intelligence (AI) into EFL language education has transformed the way learners acquire their academic writing abilities. AI-powered tools such as QuillBot, ChatGPT and Grammarly provide real-time feedback, proper grammar, and even content suggestions. These features have been opted for in supporting EFL students to write more coherent and grammatically accurate texts (Li & Chen, 2023). AI technologies help learners improve their academic writing performance by automating parts of editing, drafting, and revising, enable students to focus on higher-order thinking skills, such as organization, exposition and argumentation. Moreover, the process of writing in a foreign language often provoques a remarkable psychological pressure among EFL learners. Anxiety, fear of being negatively evaluated, lack of confidence and self-esteem can hinder the process of writing as learners fail to express their ideas effectively in academic writing. (Horwitz, 2011)

In this vein, this paper intends to explore to what extent these AI tools are improving learners' writing performance, and reducing psychological stress and anxiety by offering immediate and non-judgmental feedback. To achieve these research objectives, the researchers set the following research questions:

1. To what extent do AI-based writing feedback tools improve EFL learners' academic writing quality?

2. How does immediate, non-judgmental AI feedback reduce writing-related psychological stress, fear of negative evaluation or anxiety among EFL learners?

As initial answers to the preceding questions, the following hypotheses are suggested:

1. EFL learners who are using AI-based writing feedback may show significantly greater improvement in writing performance and quality (mainly in terms of grammar correctness, coherence in writing,  and easiness in task achievement) than those receiving only traditional teacher feedback.

2. EFL learners receiving immediate and non-judgmental AI feedback may report lower writing anxiety, greater self-efficacy, and more positive emotional responses shaped by feelings of self confidence, enjoyment, and satisfaction compared to learners who do not use AI while writing.

## 1. Literature Review

This section is intended to offer a brief background about the topic of integrating AI in education, its advantages on academic writing performance, benefits of AI on learners' psychological well-being, and the evolving relationship between students and AI technologies.

### 1.1 Artificial Intelligence in Education

AI denotes the capability of computer systems to do tasks that typically require human intelligence, such as learning, problem-solving, and language understanding (Russell & Norvig, 2021). In the educational field, AI in education describes the use of AI tools to facilitate teaching and learning, often by tailoring experiences to each student and improving instructional outcomes (Luckin et al., 2016). Well-known examples of AI technologies that are now widely employed in education are Grammarly and Quillbot, which offer grammar and paraphrasing support, ChatGPT, which assists in generating texts and ideas, and Turnitin, which checks for originality and plagiarism (Dwivedi et al., 2023). These AI tools perform varied educational purposes, such as offering real-time feedback, automating assessment, creating writing prompts, and supporting students while learning. AI also aids learners by adapting materials to their needs, helping overcome language challenges, and supporting the development of academic writing abilities (Zawacki-Richter et al., 2019).

## 1.2 Advantages of AI on Academic Writing Performance

One of the biggest advantages of using AI in teaching foreign language writing is that it gives students instant, personalized feedback. AI Programs, like Grammarly and QuillBot for instance, let learners spot and fix mistakes in grammar, punctuation, and word choice right away. This permits students to practise on their own, notice patterns in the errors they make, and improve their writing assignments without having to wait for a teacher's feedback or response. The increasing availability of AI-based writing tools now allows students to receive instant feedback on grammar, vocabulary choice, sentence construction, and the overall coherence of their work, which can greatly enhance their writing skills (Bai & Wang, 2023). Furthermore, these AI tools can adjust their suggestions to match each learner's skill level and learning pace, helping them write more clearly, logically, and with a richer bulk of lexis (Chen, Zou, & Xie, 2020).

Academic writing performance describes a learner's capacity to create well-organized, coherent, and discipline-appropriate pieces of writing that adhere to scholarly standards. Fundamental elements include clear organization, grammatical accuracy, logical reasoning, textual cohesion, originality, correct integration of sources, and proper citation methods (Hyland, 2019). Moreover, academic writing is evaluated with analytical rubrics that focus on precise language, development of ideas, good structure, and correct referencing, in addition to feedback received from peers or instructors (Weigle, 2002).

## 1.3 Benefits of AI on Learners' Psychology

Psychological well-being within educational environments refers to a student's overall mental and emotional health, including aspects such as self-acceptance, independence, personal development, and sense of purpose, based on Ryff's (1989) framework for well-being. In academic settings, this form of well-being is closely associated with factors like stress, anxiety, confidence, self-efficacy, motivation, and the capacity to manage emotions (Dörnyei & Ushioda, 2021). The introduction of AI tools into the writing process often helps reduce learners' cognitive demands and writing anxiety, as these technologies provide immediate support and feedback, thereby boosting confidence and performance (Sun & Zhang, 2022). Nonetheless, recent studies point to new challenges, such as techno-stress - psychological stress linked to technology use - and AI anxiety, which encompasses worries about becoming dependent on technology, hindering skill development, and

issues related to academic honesty and authorship (Kumar et al., 2023). While AI can offer valuable cognitive and emotional support, particularly for students with low self-confidence, excessive dependence on these tools may impede critical thinking and the development of long-term resilience. Consequently, maintaining a balance between technological assistance and learner independence is vital for safeguarding psychological well-being.

## 1.4 Risks and Challenges of AI Use

While AI offers various advantages, it also poses notable challenges in writing instruction. A primary issue is the potential for students to become overly dependent on AI tools, which might reduce their active involvement in the writing process and limit their learning of grammatical principles. Moreover, many AI systems tend to focus on superficial errors rather than deeper aspects like argument development, tone, or text organization. This shortfall can result in superficial learning and impede the growth of critical thinking skills that are crucial for effective communication, especially in a second language context (Ranalli, 2018).

Some learners are concerned that frequent reliance on AI could hinder their ability to think independently and write autonomously (Zhang & Luo, 2021). Nevertheless, most English as a Foreign Language (EFL) students perceive AI tools as supplemental aids instead of substitutes for their own efforts. With appropriate instructor guidance, students can be encouraged to use AI tools thoughtfully and responsibly, balancing technological assistance with genuine skill acquisition (Godwin-Jones, 2022).

Generally, students' attitudes toward AI in writing are highly positive, particularly when the tools are easy to use and suited to their language learning needs. Many EFL learners value how AI supports their learning by providing suggestions rather than definitive corrections, fostering reflection and self-editing (Zou et al., 2023). However, some still voice concerns about overdependence on these tools potentially undermining the development of independent writing capabilities if not used carefully (Zhang & Luo, 2021). Thus, learners' perceptions vary based on their digital literacy, language skills, and previous experience with AI technologies.

## 1.5 Human-AI Interaction in Learning

Human-AI interaction in educational settings refers to the evolving relationship between students and AI technologies, influenced by the design of the tools, the user experience, and the surrounding social environment. According to socio-technical systems theory, the successful integration of AI relies not only on how well the technology functions but also on the social and instructional contexts in which it is used (Baxter & Sommerville, 2011). Frameworks like the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) identify key factors that affect learners' willingness to adopt AI, such as how useful and easy to use they perceive the tools to be, along with social pressures (Venkatesh et al., 2003). Studies reveal mixed student attitudes toward AI-generated feedback: some appreciate its immediacy and clarity, while others doubt its ability to fully grasp complex academic nuances (Kohnke & Zou, 2021). Additionally, ethical issues arise concerning authorship, academic honesty, and potential plagiarism when students use AI-generated material without appropriate citation (Cotton et al., 2023). These challenges highlight the importance of establishing clear policies and fostering critical AI literacy to ensure technology enhances genuine learning experiences rather than compromising them.

Although these technologies bring notable advantages to education, their use is not without challenges. While they can enhance learning outcomes and strengthen students' writing abilities, there is a risk that learners may become overly reliant on them, which could hinder the development of critical thinking, originality, and ethical writing practices (Perera & Lankathilaka, 2023). For this reason, educators and institutions face the ongoing task of ensuring that AI support complements, rather than replaces, student independence.

## 2. Research Methodology

### 2.1 Research Instruments

In the present research, an online questionnaire was adopted as a means of collecting data for the sake of obtaining reliable results. This quantitative instrument insists on a set of questions in the form of a questionnaire for those learners to comprehend how AI tools (like Grammarly, QuillBot, or ChatGPT) helped students enhance their writing. Then, an interview has been structured to uncover how AI tools may impact learners' writing confidence, motivation, emotions and learning habits in general.

## 2.2 Participants

The participants of the current study are Master 2 students from the department of English at Tlemcen University, Algeria. They are students who graduated recently from the same department. These students were selected purposefully as a sample because they had the experience of writing the Master's dissertations. 20 learners filled in this online questionnaire. For the interview, 10 students were interviewed.

## 3. Data Analysis

The data collected to undertake this study have been analyzed both qualitatively and quantitatively.

## 3.1. Questionnaire Findings Analysis

This questionnaire was designed to understand how AI tools (like Grammarly, QuillBot, or ChatGPT) helped students improve their writing in English.

## 3.1.1 Use of Artificial Intelligence

1. Have you ever used an AI tool (e.g., Grammarly, QuillBot, ChatGPT…) to help with your English writing?  Yes    No

The results reveal that the whole sample confessed that they all use AI tools to help them write in English.

2. If yes, what do you like most about using AI tools for writing? This question was raised to know what students most like about employing AI tools for their writing tasks. The results are highlighted in graph 1 below.
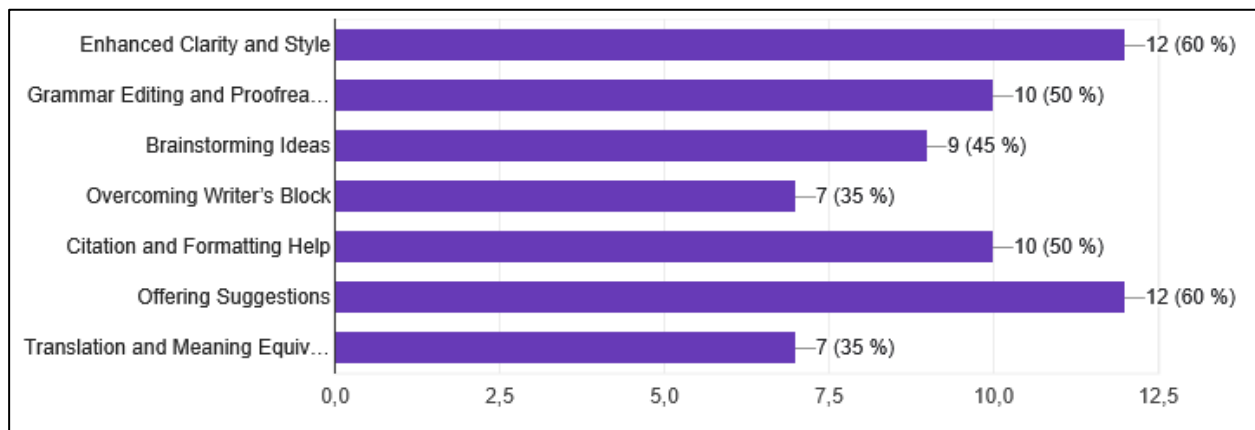
**Graph 1:** *Top Benefits Users Value in AI Writing Tools*

The informants ticked many choices. The majority of them (60%) declared that they use AI seeking enhanced clarity and style or for offering  suggestions. (50% of learners, 10 respondents) declared the role of AI as a technical aid in ensuring correctness, grammar editing, proofreading, citation and formatting help. (45% of them, 9 respondents) indicate its use in brainstorming ideas. 35% of students also revealed that they use AI to overcome writer's block and for translating and finding equivalents in meaning.

### 3.1.2 Received Feedback and Quality of Writing

Based on their previous experiences or perceptions, students were required to answer a set of questions following  a Likert scale (Strongly Agree  – Agree – Neutral – Disagree – Strongly Disagree) ranging from 1 to 5 respectively.

1.  AI writing tools help me identify and correct grammar and spelling errors more effectively than traditional feedback.

Strongly Agree  – Agree – Neutral – Disagree – Strongly Disagree
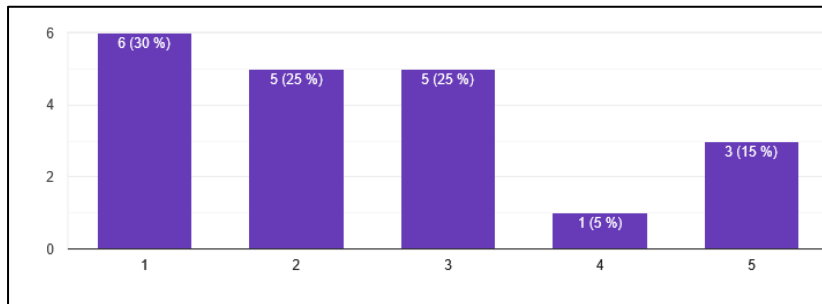
**Graph 2:** *AI feedback Vs. traditional feedback in correcting grammar and spelling errors*

The above scores indicate that the respodents' answers range between 30% 'strongly agree' and 25% 'agree'. Other 25 % answered 'neutral' while the remaining ones disagreed. These results reveal that they receive AI writing tools are more effective in identifying and correcting grammar and spelling errors than traditional feedback.

2. I receive more timely and consistent feedback from AI tools compared to feedback from teachers.
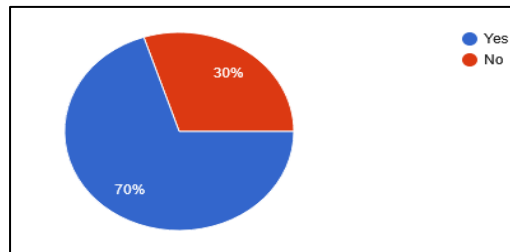
Strongly Agree – Agree – Neutral – Disagree – Strongly Disagree
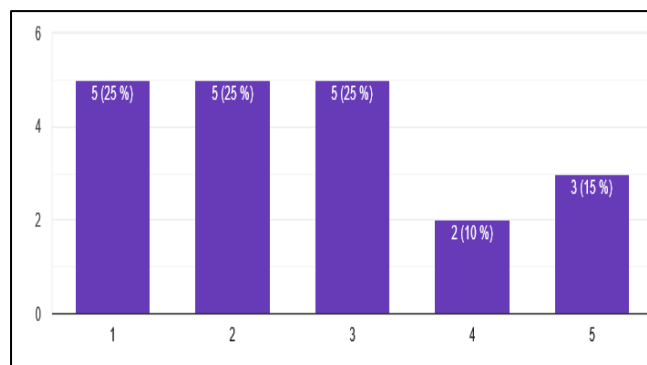


**Graph 3:** *Timeliness and Consistency of Feedback: AI Tools vs. Teachers*

In an attempt to compare teachers' traditional feedback on students' writing with AI feedback in terms of consistency and timeliness, the above question was raised. Half of the sample (10 students) agreed on its consistency while other 5 students gave no answer by ticking 'neutral'. The other remaining students disagreed.

Another question concerning which feedback is easier and faster to undestand than teachers' feedback was asked and 70 % the respondents declared that AI feedback is better and only 30 % of them stated that teachers' feedback is rather easily and speedily understood.



**Graph 4:** *Easiness and fastness of feedback: AI feedback Vs. teachers'*

3. Using AI-powered tools (e.g., Grammarly, QuillBot) improves the quality of my writing over time.

Strongly Agree – Agree – Neutral – Disagree – Strongly Disagree
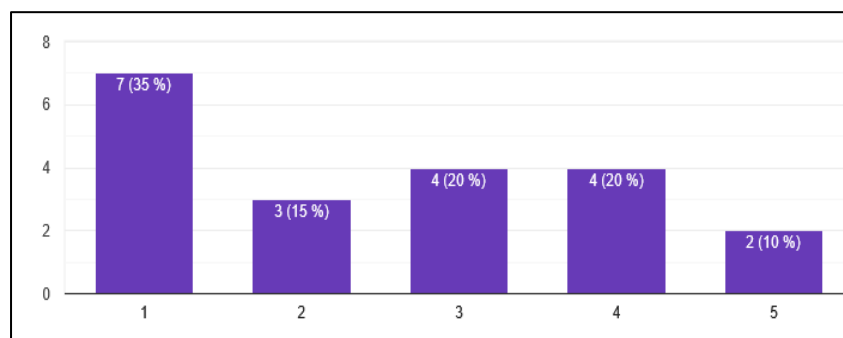


**Graph 5:** *Writing skill improvement with AI-powered assistance*

When this question was raised, student' answers varied between 35% and 15% of agreement, 20% of neutrality and between 20% and 10 % of disagreement. This means that half of the sample confessed that AI-powered tools helped them improve the quality of their writing.

4. AI helps me expand my vocabulary and use more varied sentence structures in my writing.

Strongly Agree – Agree – Neutral – Disagree – Strongly Disagree
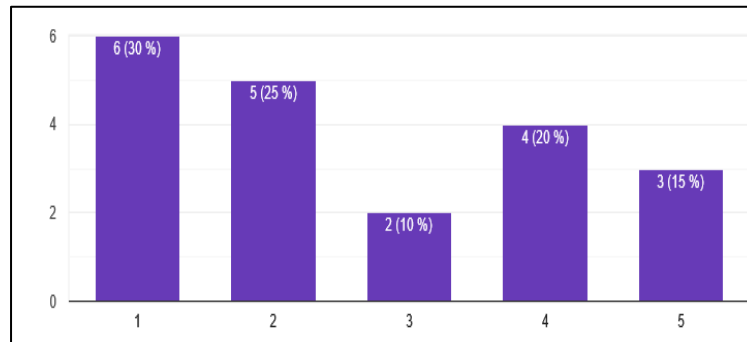
**Graph 6:** *Users' views on AI support for vocabulary and syntax development*

Answers to this question were varied; students' anwers were between 30 % and 25 % of agreement, 10 % of neutrality and between 20 % and 15 % of disagreement. This shows that more than  half of the sample declared that AI-powered tools helped them expand  their vocabulary and develop their syntax development in writing.

6. The suggestions from AI tools help me improve the organization and clarity of my writing.

Strongly Agree  – Agree – Neutral – Disagree – Strongly Disagree
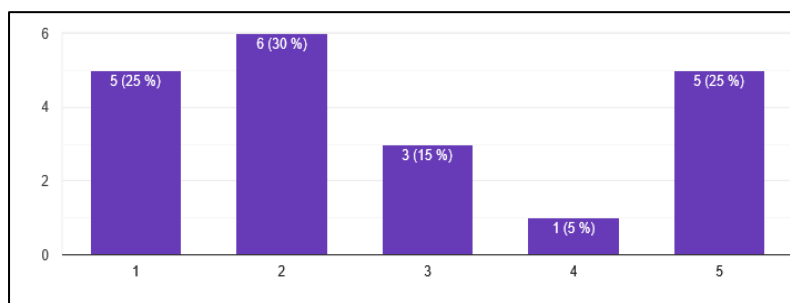


**Graph 7:** *Perceived impact of AI tools on writing organization and clarity*

Answers to this question reveal that learners admit that AI suggestions helped them improve their writing tasks' organization and clarity as the majority (55%) ticked 'I agree and I strongly agrre', 15% were neutral and 25% strongly disagreed.

5.  AI encourages me to revise my writing multiple times, which helps me learn from my mistakes.

Strongly Agree – Agree – Neutral – Disagree – Strongly Disagree
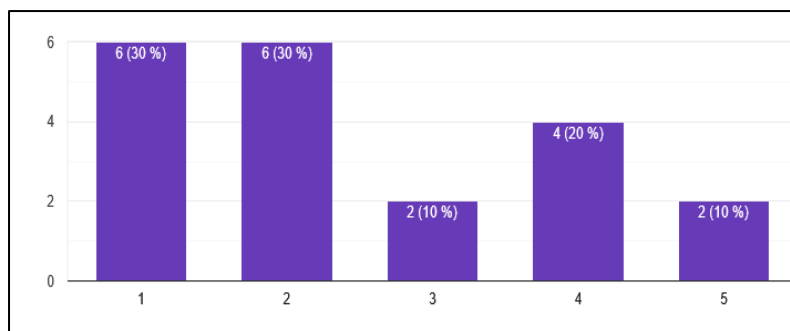


**Graph 8:** *Revising writing multiple times using AI*

The results reveal that 60% of respondents agreed on AI efficacy in encouraging writers to revise their pieces of writing many times, a fact that helps them learn from their mistakes. 10 % of students were neutral and the other 30 % of students showed disagreement. This indicates that the majority of informants revise their writings many times checking mistakes seeking clarity and correctness.

**Discussion of the Questionnaire Results**

The results of the questionnaire revealed that all students employ AI tools in their writing tasks. Based on their previous experiences on the employment of AI-powered tools, they confessed that AI writing tools are more effective in terms of writing quality features such as grammar and spelling correctness, writing skill development and improvement over time, and effective impact on their writing structure and clarity. Furthermore, learners also assert that AI writing tools provide instant, consistent, and faster feedback in comparison with teachers' traditional feedback. So, these findings confirm the first hypothesis of this research.

**3.2. Interview Analysis**

This interview, whose aim was to reveal how AI tools may influence learners' writing confidence, motivation, emotions and learning habits, has been conducted with ten students and analysed both qualitatively and quantitatively.

**1. a. Does using AI writing tools make you feel more confident when completing writing assignments in English?**

First, students were asked whether using AI writing tools makes them feel more confident when completing writing assignments in English or not and the interviewees' answers are summed up in this graph:
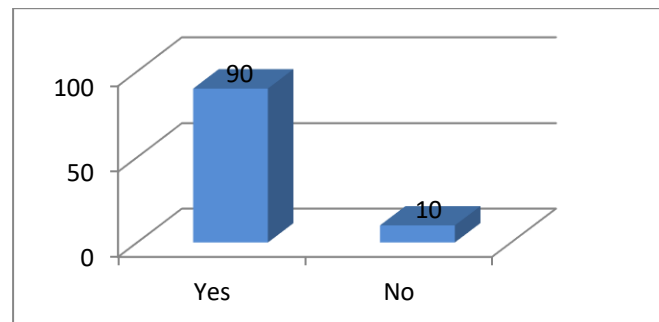


**Graph 1***: Scores of students' confidence when completing writing assignments in English*

The graph shows that 90% of students (9 out of 10) answered "Yes", stating that AI writing tools make them feel more confident when completing writing assignments in English. Then, only 10% (1 out of 10) responded "No", which is a very small minority. This demonstrates that most students agree that AI tools contribute positively to enhancing their writing confidence. These findings emphasize that AI is perceived not only as a stress-reducing tool, but also as a confidence booster, suggesting its strong potential as a supportive aid in academic writing.

**b. Can you describe a time when using an AI tool made you feel more confident in your writing?**

This question aimed to collect instances where students relied on AI tools and felt more confident in writing. The interviewees reported that AI tools provided them with an academic way to write and helped them improve the quality of their work. They explained that, although they could not recall one specific instance in particular, the tools supported them in finding different ways to express the same ideas, making their writing more varied and less redundant, which increased their confidence. Some students mentioned that when they were working and did not have much time to complete their homework, they relied on AI tools for assistance. They further stated that AI tools helped them understand the scope of their Master's

dissertations and offered valuable explanations of the theoretical framework underlying their research. They also stated that AI helped them formulate their ideas more clearly and directly, while also allowing them to maintain consistency in their writing. They added that AI assisted them in structuring their ideas in a more organized way and provided corrections along with feedback, which enabled them to avoid future mistakes. Moreover, they mentioned that AI highlighted their strengths and weaknesses, making them more aware of their writing skills.

**2. a. Does AI technology make writing in English less stressful? Yes      No**

The researchers asked students whether AI technology makes writing in English less stressful and the answers were as follows:

All 10 students (100%) answered "Yes"; meaning that AI technology makes writing in English less stressful for all the interviewees. Then, No one (0%) disagreed, which shows a unanimous positive perception of AI's role in reducing stress.
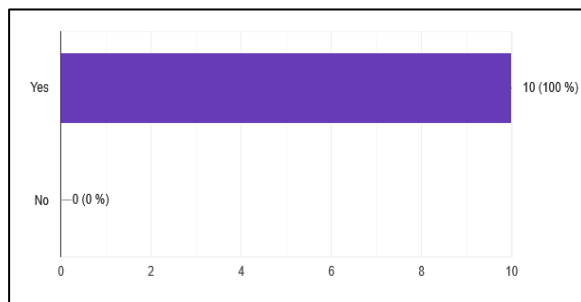


**Graph 2:** *Scores of stress while writing using AI*

So, one may deduce that AI is not just helpful, but is viewed as a reliable support tool in academic writing tasks.

 **b. Some learners find writing in English stressful. Can you recall a specific instance when an AI tool helped reduce your stress while writing?  Yes    No**
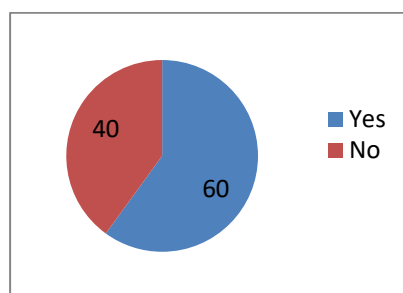
**Graph 3:** *Stress reduction through AI tools in writing*

The pie chart shows that 60% of learners (6 out of 10) agreed that AI tools helped them reduce stress while writing in English. Meanwhile, 40% (4 out of 10) reported that AI did not help reduce stress, though suggesting in the  previous question that AI is useful, this means that it does not work equally well for all students. This reflects a more balanced perception compared to the previous question's result: while a majority benefit from AI as a stress-reducing aid, a significant minority still face challenges, possibly due to overreliance concerns, unfamiliarity with AI tools, or preference for traditional writing strategies. This result highlights that AI support is effective, but not stress-relieving for all learners, pointing to the need for training and guidance on how to best integrate AI into writing practices.

 **If interviewees' answers were 'yes', they were asked to describe briefly that situation**. Their answers were as follows :

5 Students reported that AI tools helped them organize their work more effectively and reduced the frustration they often felt when struggling to formulate ideas without unnecessary wordiness. They explained that by describing their ideas to ChatGPT, it was able to rephrase and express them more clearly, allowing students to both learn from and benefit from such assistance. They also stated that AI tools supported them in completing assignments on time, helping them meet deadlines without difficulty. Furthermore, 2 students highlighted that ChatGPT specifically helped them organize and structure the titles in the literature review section of their dissertations.

**3. a.   In your experience, have AI writing tools motivated you to practise English writing more and more?**
This question has been raised in attempt to check whether AI writing tools motivated learners to practise English writing more and more or not. The findings show that 7 out of 10 students (70%) answered "Yes", showing that AI tools motivate them to

practise writing more frequently. 3 students (30%) responded "No", suggesting that while AI is useful, it does not necessarily increase motivation for everyone.
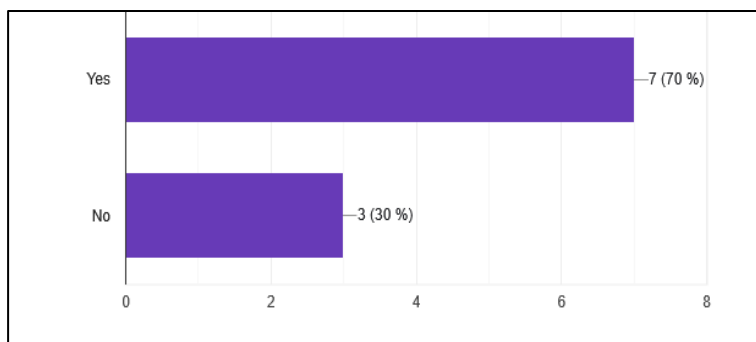


***Graph 4:*** *Students' motivation to write more frequently with AI*

Overall, the results emphasize that AI is not only a supportive tool, but also a motivational factor that encourages most learners to engage in regular English writing practice.

In addition to the previous question which was raised to check whether AI writing tools motivated learners to practise English writing more frequently or not, the researcher asked them about the reasons: **Why or why not?**

The results reveal that 9 of 10 students explained that AI tools provided them with easy access to a wide range of vocabulary, which not only introduced them to new words but also offered different ways of expressing particular ideas. They mentioned that this encouraged them to expand their repertoire and incorporate such vocabulary into their speech and writing. 5 students stated that while they used to write before the introduction of AI tools, they now use them mainly as a form of support to improve their work. They noted that AI enhances their vocabulary, corrects grammar mistakes, and helps with brainstorming multiple ways to enhance writing skills, especially in the early stages of planning and idea generation. 2 of them also emphasized that the tools assisted them in structuring their writing, spotting errors, and guiding them toward producing clearer texts. However, 2 students admitted that relying too heavily on AI made them practise English writing less, as they found themselves depending on it more than they should have. Another one pointed out that, while AI helped him discover and replace overused words with new vocabulary, it sometimes risked making him lazy in his own writing practice.

**4.a. Have AI tools ever encouraged you to revise and improve your writing more than once? Yes      No**

The aim of this question is to find out whether the use of AI tools motivates students to engage in multiple revisions of their writing, rather than stopping after the first draft. In other words, it seeks to measure if AI tools promote a process-oriented approach to writing (continuous improvement, refining clarity, grammar, and style) instead of a product-oriented approach (finishing quickly without revision). The following graph sums up the results obtained:
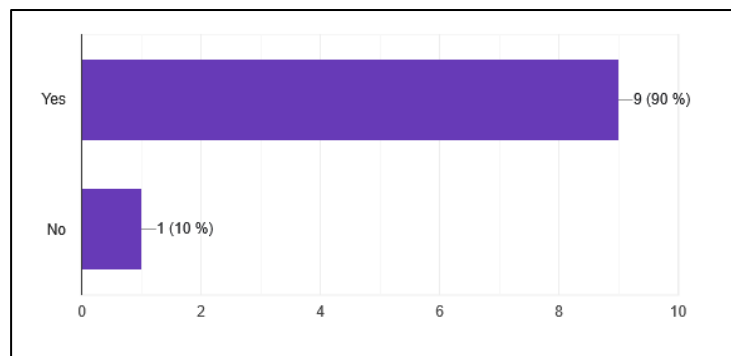


***Graph 5:*** *Scores of motivation for multiple revisions with AI*

Interviewees' responses revealed that the majority (90%) of learners answered "Yes", indicating that AI tools motivated them to revisit and refine their writing multiple times. Only 10% responded "No", suggesting that a very small proportion did not feel encouraged by AI to revise their work more than once. This highlights that most students see AI as a positive influence on the process of continuous improvement in writing.it aims to assess whether AI encourages deeper engagement with the writing process and fosters better writing habits.

**b. What features of the tool encourage (or discourage) you to write more?**

Students gave varied responses to the question "What features of the tool encourage (or discourage) you to write more?". 5 students reported that tools like Grammarly encouraged them by providing spelling correction, grammar checking, and rephrasing, which made their writing clearer and more accurate. Others highlighted that the brainstorming feature was helpful as it allowed them to generate ideas in a structured way. 2 students noted that the general assistance with writing was encouraging enough, even if no single feature stood out. However, some participants

expressed a neutral stance, explaining that AI tools neither encouraged nor discouraged them to write, as their motivation depended more on their mood. On the other hand, a concern raised was that the reformulation of ideas could lead to overreliance on the tool, discouraging students from developing their own skills in rephrasing and structuring ideas independently.

**c. Have you ever used an AI tool outside your class or teacher's assignments just to practise?**

The aim of this question is to measure students' intrinsic motivation to improve their writing skills on their own and to see if AI tools encourage autonomous learning and practice outside formal educational requirements. The results of the question displayed that 80% of learners answered "Yes", indicating that they actively use AI tools for independent practice and self-directed learning beyond academic requirements. Only 10% responded "No", suggesting that very few students limit their use of AI tools strictly to classroom or teacher-assigned tasks. The following graph further highlights these findings:
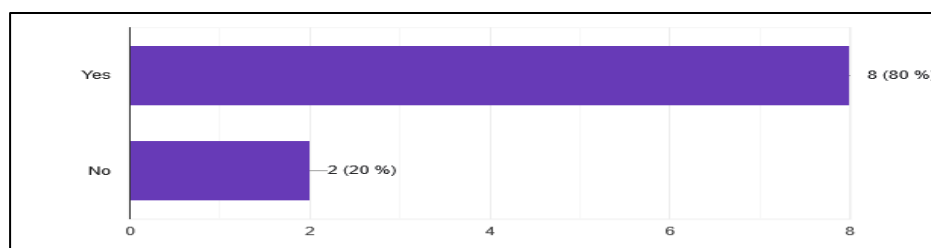


**Graph 6:** *Percentages of independent writing practice and self-directed learning beyond formal classes*

This demonstrates that AI is widely perceived as a helpful resource for autonomous practice and skill development.

**5- Do you enjoy practising English writing more now that you use AI tools? Yes No**

The aim of the question is to find out whether the use of AI tools has had a positive impact on students' motivation and enjoyment in practising English writing or not. Specifically, it seeks to measure if AI tools make the writing process feel more enjoyable, or if students' level of enjoyment has remained the same (or even decreased) despite using these tools. In short, the question aims to assess the

affective impact of AI on students' writing practice. The students' answers are highlighted in the following graph:
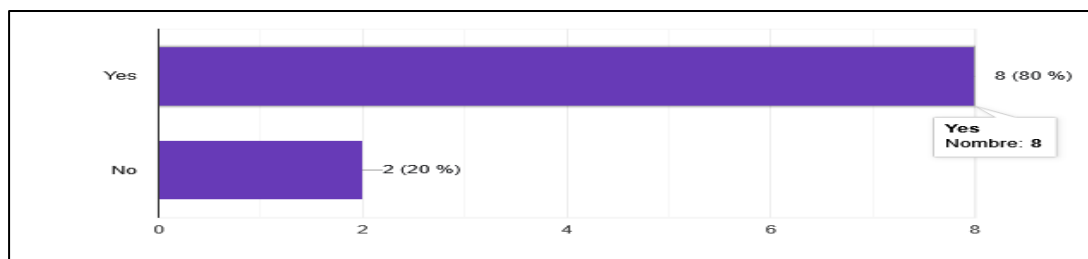


**Graph 7:** *Percentages of students' enjoyment of practising English writing with AI tools*

**Why or why not ?**

While the yes/no response shows whether students enjoy practising English writing more with AI tools, the follow-up question *"Why or why not?"* seeks to uncover the reasons behind their yes or no answers - for example, whether AI makes writing easier, motivating and more enjoyable, or whether it causes overreliance, reduces practice, or does not affect enjoyment. In short, its purpose is to explore students' perceptions, attitudes, and justifications for their responses, providing depth to the preceding quantitative data.

The 10 interviewees expressed mixed views about whether AI tools made English writing more enjoyable. 6 participants stated that AI made writing easier and more accessible, as it allowed them to practise at home and obtain instant feedback with just one click. They highlighted that this provided a sense of comfort, autonomy, and efficiency in their writing process. 2 other students said that AI tools made writing feel less stressful and more convenient, which encouraged them to practise more. However, 2 learners expressed concerns about the drawbacks. One pointed out that although AI is useful, it can reduce creativity and strip writing of the emotions and personal feelings that come from human expression, suggesting that "robots kill that vibe." Another student noted that while AI tools are helpful, they also felt they were over-relying on them, which discouraged independent effort in writing.

In general, the responses show that while most students appreciate the ease, accessibility, and support that AI provides, a few remain cautious, acknowledging its limitations and risks of overdependence.

**Summary of the Interview Results and Discussion**

The interviews reveal that AI tools generally have a positive impact on learners' writing, boosting their confidence, reducing stress, and motivating practice. Students appreciated AI's support with vocabulary, brainstorming, feedback, and corrections, which made writing clearer and more manageable. Many also used AI beyond classroom tasks, showing its value for independent learning. However, a minority expressed concerns about overreliance, loss of creativity, and reduced independent effort. In sum, AI is seen as a useful companion in academic writing, but its benefits are best realized when used responsibly and in balance with personal skill development. These conclusions confirm the researcher's second hypothesis which states that EFL learners receiving immediate AI feedback may report lower writing anxiety, greater self-efficacy, and more positive emotional responses shaped by feelings of self confidence, enjoyment and satisfaction compared to learners who do not use AI while writing.

**Conclusion and Recommendations**

In a nutshell, through this investigation, it is clearly noticed that today's learners are dependent on AI-powered tools for their easy accessibility and immediate feedback. AI tools positively influence the psychological well-being and academic writing skills of EFL learners by reducing stress, increasing confidence, and fostering motivation. Students generally view AI as a helpful resource that supports their emotional and academic development, although there is awareness of the risks associated with overdependence. Therefore, integrating AI thoughtfully into EFL instruction offers the opportunity to create a more supportive and less anxiety-provoking writing environment. Importantly, AI should serve as a complement to - not a substitute for - teacher feedback and human interaction. When applied in a balanced and pedagogically informed manner, AI can empower learners to become more confident and skilled academic writers. Educators must also remain mindful of AI's limitations, such as its potential to promote passive learning and the ethical issues involved. With careful and reflective use, AI has the potential to enrich rather than impede the writing process in foreign language education.

The use of AI in EFL writing instruction holds substantial pedagogical promise despite existing concerns. Educators can harness AI tools not only to enhance the quality of learners' writing but also to cultivate a more supportive and emotionally positive learning atmosphere. When integrated alongside classroom teaching, AI

technologies function as supplementary resources that reinforce effective writing strategies and encourage learner independence (Godwin-Jones, 2022). To fully realize these benefits, it is essential for educators to guide students in critically interacting with AI-generated feedback, avoiding passive acceptance.

Maximizing AI's positive impact in foreign language education involves adopting key strategies:

- **Blended learning approaches:** Combining AI tools with traditional communicative methods to provide a comprehensive learning experience.
- **Professional development:** Equipping teachers with training to seamlessly integrate AI while retaining pedagogical oversight.
- **Ethical standards:** Implementing clear policies that address data privacy, transparency, and fairness of AI algorithms in educational contexts.
- **Inclusive design:** Creating AI applications that recognize linguistic and cultural diversity, ensuring fair access for all learners.

Together, these strategies can help balance technological support with learner autonomy and psychological well-being in EFL environments

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