

Investigating AI-Language Models' Impact on EFL Learners' Writing Skills

التحقيق في أثر النماذج النموذجية المزكية على مهارات الكتابة للمتعلمين في مجال الدراسات الإلكترونية

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Abstract (English):

Writing is a complex skill. It is imperative for both students and teachers to develop effective strategies for its acquisition. This study aims to examine the influence of AI language models on the writing skills of EFL students. The research employs a questionnaire, classroom observation, and interview. The study participants were randomly selected, comprising thirty second-year EFL students and five teachers from the University of Badji Mokhtar Annaba. The results indicate that AI language models have a positive impact on EFL students' writing skills, and both teachers and students have a favorable attitude towards using them for teaching writing.

Keywords: Artificial intelligence; EFL learners; Language models; Language skills; Writing.

ملخص باللغة العربية:

الكتابة هي مهارة معقدة. ومن الضروري أن يضع كل من الطلاب والمدرسين استراتيجيات فعالة لاكتسابها. ولذلك، أصبح إدماج الذكاء الاصطناعي في التعليم أمراً بالغ الأهمية في الوقت الذي تتخلل فيه حياتنا الاجتماعية. والهدف من هذه الدراسة هو دراسة تأثير النماذج اللغوية التي تستخدمها منظمة العفو الدولية على مهارات الكتابة لطلاب المدارس الحرة. واستخدم البحث استبياناً يتألف من عشرة أسئلة مغلقة، ومراقبة غرف الدراسة، ومقابلة منظمة وجها لوجه مع تسعة أسئلة. وقد اختير المشاركون في الدراسة عشوائياً، وهم يتألفون من ثلاثين طالباً في السنة الثانية من الدورة الدراسية لطلاب الصف الثالث وخمسة مدرسين من جامعة بادجي مختار أنابا. وتشير النتائج إلى أن نماذج اللغة المستقلة تؤثر تأثيراً إيجابياً على المهارات الكتابية لطلاب المدارس الثانوية، وأن المدرسين والطلاب على حد سواء لديهم موقف مؤات لاستخدام هذه النماذج في تعليم الكتابة.

كلمات مفتاحية: الذكاء الاصطناعي؛ متعلمي اللغة الإنجليزية كلفة أجنبية. نماذج اللغة مهارات اللغة؛ كتابة.

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1- Introduction

Mastering a language comprises mastering the four skills: listening, speaking, reading, and writing. Listening and reading represent the receptive skills while speaking and writing present the productive skills. EFL learners face significant problems with both productive skills; they may

develop clear thoughts. However, when asked to communicate their thoughts, they may struggle. The message is ambiguous, unclear, and neither fluent nor accurate. Therefore, EFL learners need to concentrate on developing their productive skills. However, the emergence of American films and songs help EFL learners' speaking skill, as they tend to reformulate utterances in their context. However, the writing skill, the last language skill that learners are supposed to acquire, is ranked the last because of its complexity, as learners need to build their language knowledge to produce written products. Unfortunately, some EFL learners sometimes neglect writing skill development not because they take it for granted but because of apprehension or inability to achieve the desired level and produce desired outcomes. Nonetheless, ignoring a language problem can not eliminate it; the problem is always present. In addition, giving up can never be associated with learning and success. Therefore, EFL learners must find useful and effective strategies that may enhance their EFL writing skills. It is noteworthy to mention that the field of education is discovering a new era due to the emergence of new technologies. Of course, language learning is also influenced by such tech development. For example, CALL programs renewed the language learning process. Yet, today's generation is characterized by the emergence of Artificial Intelligence (AI) language models.

AI language models result from Natural language processing (NLP), a discipline of artificial intelligence (AI) that uses AI language models to help computers understand and generate human language. These language models are used for various purposes, such as completing text, translating languages, creating chatbots, and enabling speech recognition and text-to-speech conversion (OCDE, 2023). Therefore, AI language models can be used in EFL learning as teaching aids to promote EFL learners' writing skills. However, the purpose is not to get the work done by AI language models; instead, as a teaching support that students may use to check their written products, reformulate and reflect on their mistakes, and learn how to conceive correct and clear sentences. Therefore, EFL learners are supposed to use such AI language models to learn and not to get served. Because using such tech tools for completing the work is not beneficial for the students as they can never learn, while it is expected for EFL learners to take responsibility for their own learning, it is crucial that they receive proper preparation and training. To address this, the current research explores using AI language models as teaching aids to enhance EFL learners' writing skills. The study emphasises the significance of these models in developing students' writing abilities, particularly their most challenging skill. Additionally, it examines common writing difficulties faced by EFL students and how AI language models can assist in addressing them.

2- What is Writing?

As previously mentioned, the writing skill represents the fourth language skill. Unfortunately, language teaching was primarily focused on spoken language for a considerable time, with writing

being viewed as less important. However, it has become increasingly apparent that writing plays a critical role in language instruction and is a crucial component of the learning process. (Brookes & Grundy, 1998). During the 1950s, teaching English as a Second Language (ESL) focused mainly on developing oral proficiency using audio-lingual. The writing was not given much importance as it was only considered helpful in reinforcing linguistic structures. Teachers who instruct in the student's first language (L1) are aware of the differences in writing styles between L1 and L2. These differences have led to an interesting inquiry into how to teach writing skills to those who do not have a native grasp of the language. As a result, a new subfield has emerged within second language studies that provides systematic instruction to learners (Fujieda, 2006). As a matter of fact:

The study of language in the twentieth century has tended to concentrate on spoken language, many linguists from de Saussure through to Chomsky, for what seemed like good reasons at the time, neglected the written mode in favour of the spoken. This, however, contributed to the fact that writing was for a long time a neglected area in language teaching. (Brookes & Grundy, 2001, p. 01)

Writing is a multifaceted skill that requires adhering to unique conventions that connect letters and words to sentences, resulting in a cohesive and coherent "text" (Bader, 2007). The complexity of the writing skill has been confirmed by various researchers. For instance, it is commonly advocated that writing is a highly intricate cognitive task that demands mastery over various aspects such as content, format, sentence structure, vocabulary, punctuation, spelling, and even letter formation. It goes beyond simply constructing sentences; writers also need to organize and unify information to form coherent and logical paragraphs and texts (Bell & Burnaby, 1984).

Similarly, the act of writing is described as a challenging process that involves several key components. Firstly, mastering the alphabet is essential. Additionally, one must understand how words are constructed and the connection between a word's form and its intended meaning. Knowledge of writing mechanics, such as proper grammar, capitalisation, and punctuation, is also crucial. Being proficient in sentence structure is another important aspect, including combining sentences to create a coherent paragraph and, ultimately, a well-constructed essay. Finally, incorporating transitions helps ensure the flow and coherence of the overall piece (Al-Mutawa & Taisser, 1989). In other words, developing the writing skill necessitates considering different subfeatures that produce accurate work. However, it is noteworthy to mention that writers need to write while having the reader in mind; for example, "...all good writers think about their reader, just as all good speakers think about their listeners" (Heffernan & Lincoln, 1990, p .50). Likewise, the writing process is described as being multifaceted, including:

...a number of activities: setting goals, generating ideas ,organising information, selecting appropriate language, making a draft , reading and reviewing it , then revising and editing . It involves a complex process which is neither easy nor spontaneous for many second language writers. (Hedge, 2000, p. 124)

As such, the intricacy of the writing process is an outcome of the assortment of skills and proficiencies that students are required to attain and proficiently manipulate in order to generate a precise written composition. However, this intricacy may hinder and discourage students from seeking to ascertain achievement and favourable outcomes. In regards to writing proficiency, it is attained through rigorous training and expert knowledge. It is common for individuals who excel in verbal communication to struggle with written communication and vice versa (Hardaway & Hardaway, 1978). In other words, even though, the skills of speaking and writing are considered to be interrelated; however, it cannot be assumed that one's proficiency level in one skill will readily transfer to the other skill, for any given individual.

Writing skill is a crucial aspect of language teaching, as students require the ability to take notes and write exams. However, writing has often been perceived as a tool for learning grammar and vocabular, rather than a valuable skill in its own right. Thankfully, trainers and methodologists have recently recognised the significance of writing in a foreign language classroom. Writing is now acknowledged as a necessary skill for both foreign language speakers and native speakers alike (Harmer, 2004). Writing is a more challenging activity compared to speaking in first and second languages due to various factors classified into three categories: psychological, linguistic, and cognitive, which partially overlap (Byrne, 1988). The psychological aspect of writing involves it being a solitary act, not done in the presence of the intended reader, resulting in a lack of interaction and feedback that makes writing more difficult. Linguistically, the writing skill lacks paralinguistic devices such as stress, intonation, gestures, and facial expressions, requiring careful and precise sentence completion, organization, and connection. The cognitive aspect of writing requires formal and laborious instruction, mastery of written language, and learning specific structures. Additionally, writing can be imposed on individuals, sometimes resulting in a loss of ideas, such as in a classroom setting (Byrne, 1988). However, it can be a challenge for students to understand the significance of writing as a learning tool when they view the writing process solely as improving spelling and grammar in their written work. To combat this, it is important for students to engage willingly and actively in writing activities to ensure a meaningful and valuable learning experience (Caroll, 1990). Moreover, neglecting writing instruction and offering inadequate writing support that doesn't meet the varying needs of learners can lead to multiple errors in writing. Incompetent writing abilities among students can be attributed to insufficient research on the progression of writing proficiency and the lack of comprehension regarding this area of study among educational instructors (Leki, Cumming, & Silva, 2008). In addition, even though effective writing instruction is crucial, teachers often struggle to devote enough time to it due to factors such as keeping up with the curriculum, limited course hours, and student resistance (Huy, 2015). Thus, it is essential to initiate writing exercises at the initial stages of education to facilitate the growth of students' ability in generating superior-quality written assignments in due course (Ling, 2016).

3- Artificial Intelligence in Education

The topic of artificial intelligence in education has gained popularity in recent times, but the concept of general artificial intelligence has been studied since at least the 14th century. Alan Turing's work in 1937 brought renewed attention to these studies, which are now significant in academic and scientific circles. The field of AI is expanding into organizational management, with the emergence of "artificial intelligence leadership" as a topic of discussion in the literature (Canbek, 2020). It has been noted that artificial intelligence can provide marginalized individuals and communities, such as those with disabilities, refugees, out of school individuals, and those residing in isolated areas, with access to improved and suitable learning opportunities (Pedro, Subosa, Rivas, & Valverde, 2019). Artificial intelligence has the potential to develop education by enhancing personalized learning, creating impactful learning opportunities, fostering creativity, and alleviating teachers' burden (Haseski, 2019). However, there are also concerns regarding replacing human teachers with computers, as highlighted in studies on AI (Humble & Mozelius, 2019). There are ongoing discussions about whether or not AI can replace teachers (Felix 2020). However, it is important to highlight that skilled teachers will still be necessary in the future for classes focused on enhancing students' affective intelligence, creativity, and communication. According to experts, advancements in AI and automation can actually help humans become more human (Manyika et al., 2017).

4- Method

Our research investigates how AI language models affect EFL students' writing abilities. We used three methods to achieve this: a questionnaire with ten closed-ended questions, classroom observation, and a face-to-face interview with nine structured questions. We selected 30 second-year EFL students and five teachers from the University of Badji Mokhtar Annaba through a simple random sampling method to participate in the study. Our research seeks to answer the following questions:

1. How do AI language models impact EFL students' writing skills?
2. What do EFL students think of AI language models?
3. Do EFL teachers perceive AI language models as useful for EFL students?

Based on these inquiries, we have formulated the following hypotheses:

1. AI language models enhance EFL students' writing skills.
2. ESP students find AI language models helpful.
3. Teachers find integrating AI language models to develop students' writing skills useful.

Before starting the research, the participants were informed about what would be involved. The EFL students took part in a six-week written expression course as part of the research. During a five-week writing course, the students used AI language models to help with their writing. The research involved classroom observation, and at the end of the course, participants were asked to complete questionnaires about their views on the impact of AI language models. ESP teachers were also interviewed to get their opinions on the impact of AI language models on students' writing skills. The data from the questionnaire was analysed quantitatively, while the observations and teachers' interviews were analysed qualitatively. Finally, the results from all three research tools were compared to determine if they supported or contradicted each other.

5- Results

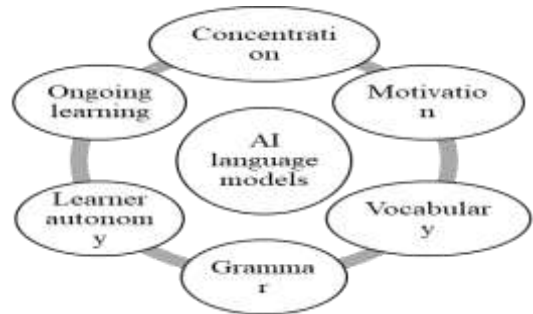
A survey consisting of ten questions was conducted to evaluate the perspectives of the participants regarding the effect of AI language models on their writing abilities. The results of the survey are presented in Table n°1. As per the table, 7 students (23.33%) enjoy writing sessions while 27 (90%) find writing to be challenging. Furthermore, 25 of the students (83.33%) believe that the teaching methodology for written expression should be revised. The first three questions of the survey aimed to analyze EFL students' attitudes towards writing skills and pedagogy. When questioned about AI language models, 22 students (73.33%) were familiar with them, and 26 students (86.66%) found them to be helpful in facilitating writing. Similarly, 26 students (86.66%) found them to be beneficial for EFL students. However, 15 students (50%) believed that students would not rely on AI language models, while 15 students (50%) held the opposite view. Additionally, 25 students (83.33%) believed that AI language models reduced the anxiety of EFL students about writing, and 27 students (90%) believed that they increased their self-confidence. Finally, 20 students (66.66%) believed that AI language models helped students achieve better outcomes.

Table 1: Students' Questionnaire Results

| Question | Answers | | | |
|---|---------|------------|----|------------|
| | YES | Percentage | No | Percentage |
| 1. You enjoy written expression sessions. | 7 | 23.33% | 23 | 76.66% |
| 2. Writing is challenging. | 27 | 90% | 03 | 10% |
| 3. Written expression pedagogy is flawless. | 05 | 16.66% | 25 | 83.33% |
| 4. Are you familiar with AI language models? | 22 | 73.33% | 08 | 26.66% |
| 5. AI language models facilitate writing. | 26 | 86.66% | 04 | 13.33% |
| 6. AI language models are helpful for EFL students | 26 | 86.66% | 04 | 13.33% |
| 7. EFL students may rely on AI language models. | 15 | 50%5 | 15 | 50% |
| 8. AI language models decrease EFL students' anxiety about writing. | 25 | 83.33% | 05 | 16.66% |
| 9. AI language models increase EFL students' self-confidence. | 27 | 90% | 03 | 10% |
| 10. AI language models help students' get better outcomes. | 20 | 66.66% | 10 | 33.33% |

As part of a study, a classroom observation was conducted to see how using AI language models affects EFL students' writing performance. The results, displayed in figure n°1, are positive. The implementation of AI models in writing tasks has shown a notable improvement in student engagement as they were focused on their written tasks. Unsurprisingly, using AI language models for written expression motivated and did not distract the students, who appreciated learning new vocabulary items through such language models. Moreover, the students received correct utterances; the models helped the students identify their structural mistakes and learn the correct structures, increasing learning autonomy and ongoing improvement. Therefore, the classroom observation results reveal that the implementation of AI language models for developing students' writing performance is practical and beneficial.

Figure 1: Classroom Observation Results



As part of the study, interviews were conducted with five teachers to gather their insights on using AI language models to aid in teaching writing. According to the data presented in Table 2, all of the teachers interviewed have experience teaching written expression. The results indicate that EFL teachers do not consider the current teaching methods to be flawless and prefer to use a variety of approaches. When asked about EFL students' perspectives on writing, the teachers agreed that it is not their favorite activity. The use of technology, particularly AI language models, is considered practical and helpful by EFL teachers as they provide accurate language samples and new vocabulary. However, teachers also acknowledge that such models can harm students' development by reaching human proficiency and causing distractions. Despite this, teachers still encourage the use of these models.

Table 2: Teachers' Interview Results

| Question 1 | Do you teach written expression or have you taught it before? |
|------------|---|
| Teacher 1 | Yes |
| Teacher 2 | Yes |
| Teacher 3 | I had experience teaching written expression, but it has been two years since I last did. |
| Teacher 4 | Yes, I am teaching written expression. |
| Teacher 5 | Yes, I do. |
| Question 2 | Do you think the current methods of teaching written expression are perfect? |

| | |
|-------------------|--|
| Teacher 1 | Personally, I am trying to adopt different strategies and methods. |
| Teacher 2 | It is impossible to say that a given pedagogy is flawless. |
| Teacher 3 | No, it is not flawless. |
| Teacher 4 | It does not satisfy the students' needs and wants. |
| Teacher 5 | It is important to be eclectic and flexible. |
| Question 3 | Do students enjoy written expression sessions? |
| Teacher 1 | The answer varies based on individual learning styles and unique circumstances. |
| Teacher 2 | Not really! |
| Teacher 3 | They often feel overwhelmed. |
| Teacher 4 | I do not think so! |
| Teacher 5 | That is not always the case. |
| Question 4 | Can the use of technology change the teaching of written expression? |
| Teacher 1 | Of course! |
| Teacher 2 | Certainly! |
| Teacher 3 | Yes, but the students may get distracted! |
| Teacher 4 | Definitely! |
| Teacher 5 | Yes, of course! |
| Question 5 | Are you familiar with AI language models? |
| Teacher 1 | Yes, sure! |
| Teacher 2 | Yes |
| Teacher 3 | Yes |
| Teacher 4 | Of course! |
| Teacher 5 | Sure! |
| Question 6 | Do you think that using AI language models can be helpful? |
| Teacher 1 | Of course! However, they can not replace the teacher! |
| Teacher 2 | It depends on students' attitudes toward such models. |
| Teacher 3 | Yes! However, are the students responsible enough to use them wisely? |
| Teacher 4 | AI language models are helpful and practical. |
| Teacher 5 | Of course! |
| Question 7 | How can AI language models develop EFL students' writing performance? |
| Teacher 1 | AI language models can provide simple and correct utterances. |
| Teacher 2 | Students may learn how to avoid repetitions through such models. |
| Teacher 3 | New vocabulary! |
| Teacher 4 | By using such models, students will be able to learn correct grammar and improve their writing skills. |
| Teacher 5 | Students will use the correct language due to AI models. |
| Question 8 | Can AI language models be harmful? |
| Teacher 1 | I believe so, as artificial intelligence has not yet reached the level of proficiency in human language. |
| Teacher 2 | It is possible that these models could cause a distraction for students or contribute to |

| | |
|-------------------|---|
| | a lack of motivation. |
| Teacher 3 | The worst scenario is that the students rely on such models for their work. |
| Teacher 4 | They may hinder students' creativity and thinking. |
| Teacher 5 | Not when they are used as teaching aids. |
| Question 9 | Do you encourage the use of AI language models for teaching writing? |
| Teacher 1 | Yes, they may be helpful. |
| Teacher 2 | Of course! |
| Teacher 3 | Yes, I do. |
| Teacher 4 | Yes! |
| Teacher 5 | I recommend using them solely as teaching aids. |

6- Conclusion

Learning to write is considered the most challenging language skill for EFL learners due to its complexity. It requires learners to have a strong grasp of the language to produce written products. Therefore, it is crucial for EFL learners to adopt effective strategies to enhance their writing skills. In today's generation, AI language models have emerged and can be utilised as teaching aids to promote EFL students' writing abilities. This study aims to investigate the impact of AI language models on EFL students' writing skills. The study u a questionnaire with ten closed-ended questions, classroom observation, and a face-to-face interview with nine structured questions. Thirty second-year EFL students and five teachers from the University of Badji Mokhtar Annaba were randomly selected to participate in the study. The results reveal that AI language models positively impact EFL students' writing skills, and both teachers and students have a favourable attitude towards using them for teaching writing.

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