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Using Artificial Intelligence to Reduce Preparatory School Pupils' Writing Apprehension

Research Derived from a Dissertation Submitted in Partial Fulfillment of the Requirements of the PhD Degree in Education
(Curriculum& Instruction of TEFL)

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المستخلص

هدف هذا البحث إلي دراسة تأثير الذكاء الاصطناعي في تخفيف رهبة الكتابة لدى تلاميذ الصف الثاني الإعدادي في مصر .غالبًا ما يؤدي ضعف الكتابة إلى القلق وسلوكيات التجنب، لا سيما لدى متعلمي اللغة الإنجليزية كلغة أجنبية (EFL)، مما يؤثر على قدرتهم على التعبير عن أفكارهم بشكل متناسق .استخدمت الدراسة تصميمًا شبه تجريبي، وشملت ستين تلميذا، مقسمين إلى مجموعتين تجريبية وضابطة .وقد تم التدريس للمجموعة التجريبية باستخدام الذكاء الاصطناعي، بينما اتبعت المجموعة الضابطة أساليب التدريس التقليدية . جُمعت البيانات باستخدام مقياس رهاب الكتابة، كشفت النتائج عن فروق جوهرية لصالح المجموعة التجريبية، مما يشير إلى أن الذكاء الاصطناعي قلل بشكل فعال من رهبة الكتابة وعزز أداء الكتابة .وتؤكد هذه الدراسة على إمكانات تقنيات الذكاء الاصطناعي في إحداث نقلة نوعية في تعليم اللغة الإنجليزية كلغة اجنبية، مما يشير إلى آثارها على تطوير المناهج وطرق التدريس الهادفة إلى تحسين مهارات الكتابة .وتدعو النتائج إلى دمج موارد الذكاء الاصطناعي لتعزيز مشاركة التلاميذ والتعلم الذاتي في الكتابة .

الكلمات المفتاحية :الذكاء الاصطناعي، رهبة الكتابة، تلاميذ المرحلة الاعدادية .

ABSTRACT

This research aimed to examine the effect of using artificial intelligence on alleviating writing apprehension among second-year middle school pupils in Egypt. The study employed a quasi-experimental design and included sixty pupils divided into two groups: an experimental and a control group. The experimental group were taught using artificial intelligence, while the control group followed traditional teaching methods. Data were collected using a writing apprehension scale. The results revealed significant differences in favor of the experimental group, indicating that the artificial intelligence effectively reduced writing apprehension and enhanced writing performance. This study underscores the potential of AI technologies to transform English as a Foreign Language (EFL) education, suggesting its implications for curriculum development and teaching methods aimed at improving writing skills. The findings call for the integration of AI resources to enhance pupil engagement and self-directed learning in writing.

Keywords: *Artificial Intelligence, Writing apprehension, preparatory school pupils*

Introduction

Preparatory school pupils often struggle with generating sufficient ideas or information to produce well-structured and coherent writing. This challenge stems from the need to strengthen both their cognitive and language skills, as deficiencies in these areas negatively impact their written performance. Among Egyptian learners at the preparatory stage, a common issue is the inability to find suitable vocabulary or organize thoughts effectively, often resulting in avoidance or postponement of writing tasks. This problem may be attributed to the rigid, mechanical methods of instruction that lead to frustration and disengagement. Therefore, there is a pressing need to support students in developing their ability to generate ideas, express them clearly in writing, and organize their thoughts in a coherent and structured manner.

A lot of studies have been conducted to determine the factors that affect English language writing proficiency, particularly for nonnative English users. Evidence has shown that writing apprehension is one of the strongest factors which affects language learning success and that it has incapacitating effects on the language learners (Akkakoson, 2016; Amoah & Yeboah, 2021) Whereas facilitating apprehension produces positive effects on the learners' performance, too much apprehension may cause poor performance (Eid, 2022; Oteir & Al-Otaibi, 2019). Botes et al. (2020) described writing apprehension as a situation-specific fear, which is mostly independent of the other types of anxiety and is characterized as "high feelings of self-consciousness and fear of making mistakes and a desire to be perfect when writing". While (Rahimi & Soleymani, 2015) described writing apprehension as the fear that occurs when a language pupil learns a second or foreign language. There are factors that increase learners' writing apprehension, such as inability to understand the lessons, and evaluation, classroom set-up, and teacher's role (Russell et al., 2015). Writing apprehension can be manifested in the different stages of language learning, the input, processing, and output stages, and describing how apprehension is related to these three stages can provide insights on why second language learners and foreign language learners suffer from linguistic difficulties and mistakes (Fadlan, 2020; Othman, 2021; Suhartoyo et al., 2021).

According to Salas-Pilco et al. (2022) Artificial intelligence has become an integral part of the learning and training process. This kind of technology can make learning English easier and more fun. However, it can be considered a natural evolution of computerized media as (Karkera & Chamundeshawari, 2018; Yoestara & Putri, 2019) illustrate that learners made several attempts to use various computerized media to improve their language abilities before the widespread use of artificial intelligence, such as radio, YouTube, and podcast applications. Artificial intelligence has increased the value of these media, for example, self-correction and communication with native speakers such as humans. AI educational applications such as Chatbots and Duolingo are great applications in learning, they allow learners to communicate with online applications through text or speech, as they bring dialogue to teaching and provide learners with a natural learning style. They provide the productive and personalized engagement

required by language learning. In a related study, both (Kim et al., 2022) state that pupils' writing performance can be improved through interactions with Smartbots such as ChatGPT.

Literature Review

Writing is a crucial skill for intellectual development and career preparation, serving individuals' communication needs and learning (McLeod, 2020; Russell, 2020). As writing skills develop, students apply their knowledge more easily and go beyond what they have learned. Writing is not just an individual activity but a process that requires social interaction (Paengkamhag, 2021). Sadiku (2015) suggests that young learners should write in a shared way to accelerate the process. This helps develop a better technical point of view toward writing and increase awareness of their responsibilities. Writing strategies are a key factor affecting writing. Previous studies suggest that teaching strategies for managing text production is an effective way to improve writing for students with learning disabilities or poor writing skills (Eid, 2022; Kim, 2019). Most language learners at all levels believe that writing is one of the most difficult language skills to master (Ahmed & Myhill, 2016; Sivaci, 2020).

Writing is a crucial language skill for academic success, but students learning in a foreign language face numerous challenges (Genç, 2017; Tasisa & Tadesse, 2024). The complexity of writing can heighten anxiety levels, leading to discouragement and negative attitudes towards it. Both low and high achievers find writing difficult and view it as a struggle to pass exams (Göy, 2017; Mallahi, 2020). Writing is a deliberate, creative, and complex cognitive process that uses a conventional graphic system to convey a message. Inefficient strategy use is hypothesized to be the cause of writing anxiety, as it is a deliberate, creative, and complex cognitive process. Overall, students face numerous challenges in learning to write effectively (Mu, 2024).

Silvia (2018) found that the planning stage is a significant difference between expert and novice writers, with experts generating more elaborate goal networks than novices. Good writers recognize the importance of the prewriting phase, which involves daydreaming, sketching, doodling, making lists of words, reading, conversing, and writing. Writing is a complex skill that requires hard work, skill development, and years of practice (Şahin & Levent, 2015). Many students struggle with writing clearly or expressing their ideas well. Writing needs an effective developmental process, with plenty of practice occurring in and beyond the first-year experience, especially within the student's discipline. Persistence benefits strategy-focused writing instruction, and generating a writing plan before writing a composition is beneficial. Using content area literacy strategies increases students' abilities to internalize course content and develop conceptual understanding about subject matters (Anders & Guzzetti, 2020; Minor, 2023).

Recent research has highlighted the importance of writing strategy in improving writing quality. A meta-analysis of 20 group-comparison studies found that strategy instruction had

significant positive effects on writing quality, with effects lasting 4-10 weeks after intervention. Successful writers use comprehensive writing strategies, such as relating the text to one's own experience, summarizing information, concluding, and asking questions about the text (Eckstein & Ferris, 2018; Rahimi & Zhang, 2018). The focus on writing becomes an integral part of institutional culture, and intensive L1 and L2 training reinforces students' tendency to apply meta-knowledge to their essay writing. Cognitive-oriented studies have also found that expert writers use more effective planning and revising strategies than inexperienced student writers.

Writing strategy instruction is effective, especially for adolescents with writing difficulties and is a powerful technique for adolescents in general (Kim, 2019; Sun et al., 2022). Writing apprehension is a critical issue that teachers must address. Writing anxiety is defined as a fear of the writing process that outweighs the projected gain from the ability to write. Anxiety pervades every corner of human life, including writing skills. Early studies reported that nearly 80% of American students fear composition courses, and 25% suffer from severe writing anxiety (Bryars, 2022). Lambert (2015) surveyed college students, finding that 45% found writing aversive, 61% found it difficult, and 41% expressed little confidence in their ability to write. Alhasan (2023) found that most Jordanian postgraduate students experienced high levels of writing apprehension.

Researchers have attempted to address writing apprehension through study-based suggestions. Huwari and Al-Shboul (2016) suggested teaching writing as a process, providing clear directions, sharing grading criteria, and allowing students to work in peer groups. Eid (2022) also discussed methods she adopted to reduce apprehension in her lower-level freshmen writing classes. Writing achievement is defined as expressing ideas in written form in a second or foreign language with reasonable accuracy and coherence. However, few studies have focused on examining writing anxiety and its impact on performance. Some studies have indicated that writing apprehension is negatively associated with the quality of message encoded, writing performance, and students' willingness to write or take advanced writing courses. For L2, negative relationships between anxiety and L2 achievement have been established. High apprehensive writers prefer academic majors and occupations that require relatively little writing, while low apprehensive writers prefer academic majors and jobs that require more writing (Sternglass, 2017).

Other studies have revealed a close association between students' writing anxiety and their course grades obtained in writing classes. Early studies reported that some students with low levels of writing apprehension were actually poor writers, while high levels of apprehension were among skilled writers. Paker and Erarslan (2015) and Aguinis et al. (2016) found that highly anxious students were more likely to receive low grades in composition classes. However, Vanhille et al. (2017) found no significant relationship between writing apprehension and grades in a large composition course.

Research on the relationship between writing anxiety and gender differences has yielded mixed results. While some studies suggest that females may experience less writing anxiety than males, others show that female students feel more anxious (Bijani et al., 2024; Zhang et al., 2015). The relationship between the year of study and language anxiety has also been found to be statistically significant (Aydın et al., 2018).

Statement of the Problem

The problem of the current research is the low level of primary school pupils in writing apprehension among them. In other words, the current search attempts to answer the following main question:

What is the effectiveness of using artificial intelligence to reduce preparatory school pupils' writing apprehension?

Significance of the Study

The current research could be significant as following

1. It could draw their attention to the importance of writing skills to put them in consideration while designing the curriculum.
2. It could provide them with a list of writing skills which preparatory school pupils need.
3. It could also be helpful for teachers as it might raise their awareness of the importance and benefits of artificial intelligence and how it could be implemented effectively EFL classrooms.
4. In addition, this study could provide English language teacher with information about some artificial intelligence applications that could help them enhance preparatory school pupils' writing skills.
5. It could direct EFL teachers and supervisors to the necessity of developing EFL writing skills using artificial intelligence.
6. It could help preparatory school pupils develop their EFL writing skills.

Objectives of the Study

The present study aims at:

1. Identifying an EFl writing skills checklist that should be developed among EFL preparatory school pupils.
2. Determining the preparatory school pupils' level of these skills' mastery
3. Measuring the effectiveness of a proposed program based on artificial intelligence to reduce preparatory school pupils writing apprehension.

Research Hypotheses

There is a statistically significant difference at the level of significance (0.05) between the mean scores of the research participants of the experimental and control groups in writing apprehension on the post administration of overall EFL Vocabulary Aspects in favor of the experimental group.

Method

In this study, the researcher relies on the use of the quasi-experimental method as it fits with the nature of the research to its ability to control the various factors and stabilize most of the extraneous variables affecting the phenomenon or problem of the research, so the researcher selected a random sample of second-year preparatory school pupils and divide them into two groups. First, a writing apprehension pre-Scale for both groups to see if the experimental and control groups are equal in writing apprehension before the administration of the scale. Then, the control group is taught by the traditional method, but the experimental group is taught using a proposed program based on artificial intelligence and then the writing apprehension post-scale is applied for both experimental and control groups to verify the effectiveness of program based on artificial intelligence to develop the experimental group's writing apprehension.

Participants of the Study

The participants of the study are sixty EFL second year preparatory school pupils at Fatimah Al-Zahraa School in Ashmoon.

Delimitations of the Research

The present research is delimited to the following:

1. Sixty EFL third year preparatory school pupils at Fatimah Al-Zahraa School in Ashmoun, Menofia.
2. writing apprehension Scale in dimensions of (Anxiety of Writing)
3. The first semester of academic year 2024-2025.

Instruments and materials of the Research

The researcher has prepared and used scale of writing apprehension.

Definition of Terms

The present study handles the following definitions:

1- Artificial Intelligence

According to Wang (2019), artificial intelligence refers to the ability of devices or systems to think like humans, and have the power and skills to learn, perceive, and make decisions rationally and intelligently (Tredinnick, 2017) describes artificial intelligence as a set of technologies and different computing science approaches to make rational, flexible decisions in line with unexpected environmental conditions.

The researcher defines artificial intelligence operationally as a set of technologies that enable machines to operate at a very high level of intelligence similar to humans.

2- Writing Apprehension

Writing apprehension is a term originally invented by Daly and Miller to describe “The writing fear that one might feel about the act of composing written material” (Sabti et al., 2019). In this study, writing apprehension can be defined operationally as "the fear of making mistakes while doing the writing process." In this study, writing apprehension will be measured by the Daily Miller Writing Apprehension Scale.

Results of the study

T-test

In order to make sure that both experimental and control groups were homogenous before the treatment and the improvement of the Writing Apprehension would be attributed to the AI-based program, the Writing Apprehension test was per-administered to both groups in the first semester of the Academic Year 2024-2025 t-test for independent samples was used to find out if there were any statistically significant differences between the two groups in the pre-administration of the EFL Vocabulary Aspects test. Results are presented in the following table.

Table 1: t-test value of experimental and control groups for the pre-administration of the Writing Apprehension Test

Item	Group	N	Mean Score	SD	D.f.	t-value	Sig.
Overall Writing Apprehension	Experimental	30	3.46	0.46	58	0.49	0.62
	Control	30	3.46	0.83	58		

Table (2) indicates that the t-value is (0.49) which is significant at a level greater than (0.05). This means there were no statistically significant differences between the experimental and control group students in the pre-administration of the Writing Apprehension test. Therefore, both groups are homogenous and at equivalent level of performance before implementing the AI-based program.

To ensure the test validity, it was submitted to a number of EFL teaching specialists during the second semester of the Academic Year 2024-2025. The jury panel was asked to add, modify, or omit whatever they found important and evaluate the test in terms of the following criteria:

a) The suitability of the audio and reading texts to students' language proficiency level.
b) The compatibility of the test items to the stated writing skills of the test.
c) The suitability of the timing to the items of the test.
d) The sufficiency of items to cover the identified skills.
e) The clarity of the test items.

The test was approved by the jury members as valid for measuring the intended oral fluency skills. However, the following remarks were highlighted:

1- Some sentences in the dialogue (Part II) were rephrased, other sentences were omitted to make it more suitable for students' language level.
2- Some items of the test were modified or rephrased to be suitable for the language level of third year secondary students.
3- It was suggested to highlight some key words in the questions so that it would be easy for students to keep focused.

Reliability of the Test According to Mackey and Gass (2005), reliability in its simplest definition refers to consistency. In other words, an individual who takes a particular test would get a similar score on two administrations of the same test. To estimate the reliability coefficient

of the Writing Apprehension test of the current study, the test re-test technique was used. A group of third year secondary students at Fatimah Al Zahraa School (n = 20) was selected. Implementation took place in the third week of March and first week of November, 2024. The scores of the two administrations were correlated with two different methods; Cronbach's Alpha and Pearson Correlation Formula. The results are shown in the following table.

Table 2: Writing Apprehension test reliability coefficient

	Cronbach's Alpha	Pearson Coefficient
EFL Vocabulary Aspects	0.83	0.82

Table (3) shows that the reliability coefficient of overall Writing Apprehension using Cronbach's Alpha was (0.83), and Pearson Coefficient was (0.82) which indicate the test has a high stability coefficient. This proves that the test was considered a reliable one.

Data Analysis

In order to analyses the data and verify the effectiveness of the using AI in reducing Writing Apprehension for third property stage pupils, the researcher used the following statistical techniques:

1- **Descriptive Statistics of Writing Apprehension Scores (Pretest and Posttest)** To assess the initial and final levels of writing apprehension among both the experimental and control groups, descriptive statistics were calculated. These included the mean scores and standard deviations of the pretest and posttest administrations of the Writing Apprehension Scale. This analysis provided a general overview of the differences in writing apprehension before and after the implementation of the AI-based program, and allowed for comparisons between the two groups.

2- **Independent Samples T-Test for Posttest Scores** In order to determine whether there was a statistically significant difference between the experimental group and the control group on the posttest of writing apprehension, an independent samples t-test was conducted. This test was applied to compare the mean scores of the two groups after the intervention and to verify whether the AI-based instruction had a measurable impact on reducing writing apprehension relative to traditional instruction.

3- **Paired Samples T-Test for the Experimental Group (Pre-Post Comparison)** To examine the effectiveness of the AI-based program within the experimental group itself, a paired samples t-test was employed. This test compared the mean scores of the experimental group on the pretest and posttest of the Writing Apprehension Scale. The

purpose was to determine whether the observed changes within the group were statistically significant and not due to chance.

4- **Effect Size Calculations Using Eta Squared and Cohen's d**
To assess the magnitude of the observed differences, effect size measures were calculated. For the comparison between the experimental and control groups (related to the first hypothesis), **Eta squared (η^2)** was computed to determine the proportion of variance explained by the independent variable. For the within-group comparison (related to the second hypothesis), **Cohen's d** was calculated as a measure of effect size for paired samples. The resulting values were interpreted according to Cohen's (1988) guidelines, where an effect size of 0.2 is considered small, 0.5 moderate, and 0.8 or higher large. These calculations provided further insight into the practical significance of the intervention in addition to its statistical significance.

Results of the Study

The results of the study were presented in the light of examining the the study hypothesis as follows:

Verifying the Study Hypothesis

The hypothesis of the study d stated "There is a statistically significant difference at the level of significance (0.05) between the mean scores of the research participants of the experimental and control groups in Writing Apprehension test on the post administration of overall Writing Apprehension test in favor of the experimental group." To verify that hypothesis, t-test for independent samples was used and the results are shown in table (4).

Table 3: t-test results of the Experimental & Control Group Students' Posttest of Writing Apprehension.

	Control Group N = 30		Experimental Group N = 30		t-value	D.f.	Sig.	Effective size
Writing Apprehension	Mean	SD	Mean	SD	5.63	58	0.00	0.35
	3.47	0.64	5.33	1.11				

Results in table (4) reveal that the mean score of experimental group students on the post test of overall Writing Apprehension is (5.33) with standard deviation of (1.11), which is higher than the mean score of the control group pupils on the same posttest of overall Writing Apprehension that is (3.47) with standard deviation of (0.64). Moreover, it can be noticed that the t-test value between the two scores is (5.63) which is significant at (0.00). This proves the difference between the scores of the experimental and control group on the same posttest of overall Writing Apprehension in favor of experimental group and consequently, the first hypothesis is verified.

After calculating the effect size using Eta squared (η^2) formula, it was noticed that the program has a large effect size on reducing the Writing Apprehension. The following diagram shows the difference in writing skills between the control and experimental groups on the posttest.

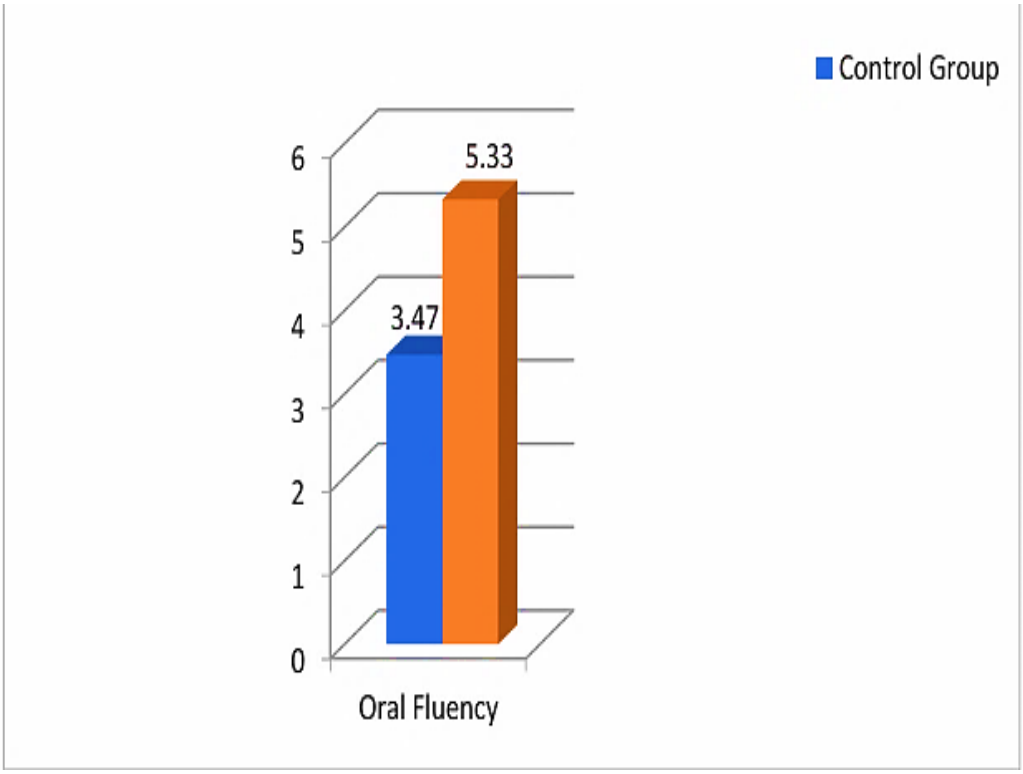

Figure 1: Comparison of the Control & the Experimental Group Pupils' Mean Scores on Writing Apprehension Posttest.

Figure (1) shows that students of the experimental group outperformed the pupils of the control group on the Writing Apprehension posttest. This difference can be attributed to the implementation of the AI based program.

Discussion of Results

The findings of the present study were analyzed and interpreted in relation to established pedagogical theories, prior empirical investigations, and the AI-supported classroom environment deliberately created by the researcher during the implementation phase. The data clearly indicated that the integration of Artificial Intelligence (AI) into English as a Foreign Language (EFL) instruction had a significantly positive effect on the development of writing skills among pupils at the third preparatory stage. Specifically, the statistical analysis provided robust evidence supporting the effectiveness of the AI-based instructional program in enhancing multiple dimensions of writing fluency.

Learners in the experimental group demonstrated a marked improvement in their ability to apply prosodic features of language—such as accurate word and sentence stress and appropriate intonation patterns—within their written output. Moreover, they exhibited greater control over the rhythm and pacing of their writing, resulting in texts that were more cohesive, logically structured, and free from abrupt pauses or disjointed expressions. This improvement in fluency was not merely mechanical, but reflective of a deeper internalization of language patterns, likely fostered through sustained exposure to AI-generated feedback and interactive, context-driven writing tasks embedded in the program.

This improvement was particularly noticeable in both macro-level and micro-level aspects of writing. On a macro scale, students demonstrated enhanced abilities in organizing their ideas coherently, structuring paragraphs effectively, and maintaining a logical flow throughout their texts. On the micro level, improvements were observed in sentence construction, word choice, use of transitions, and grammatical accuracy. These developments were substantiated by a statistically significant increase in writing fluency scores, with the mean score rising from 3.6 prior to the intervention to 5.33 following the program's implementation. Such gains signify a meaningful advancement in learners' ability to produce written language that is both fluent and cohesive.

This progress can be largely attributed to the deliberate design of the AI-integrated instructional tasks embedded within the program. Activities such as preparing dialogues based on realistic, everyday scenarios and composing reflective pieces on their interactions with AI tools provided students with opportunities for meaningful language production. These tasks not only simulated real-world communication but also encouraged learners to engage with language as a functional

and purposeful tool. By situating writing in authentic and personally relevant contexts, students were able to internalize linguistic patterns and writing conventions more effectively. Moreover, the integration of immediate, individualized feedback through AI-supported platforms reinforced learning and enabled students to monitor their progress and make timely improvements. This learner-centered approach fostered a deeper understanding of the writing process and contributed to the observed enhancement in both performance and confidence.

The study also investigated the role of AI in reducing writing apprehension among EFL learners. Analysis of the data indicated that students who used the AI-based program performed better in language achievement and exhibited reduced levels of anxiety related to writing. This supports findings from recent studies suggesting that AI can serve as a valuable tool to enhance student engagement and confidence by providing personalized feedback, interactive content, and a supportive learning atmosphere.

Additionally, the study highlighted the role of gender in the EFL writing process. Results suggested that gender may influence the strategies students employ, with male and female learners potentially differing in their preferences and use of writing techniques. This underscores the importance of teachers being aware of diverse learner needs and adapting instructional strategies accordingly.

In sum, the current study not only confirms the value of AI in improving writing fluency but also opens new avenues for addressing writing apprehension and promoting self-directed learning. It aligns with previous studies such as those by Encalada and Sarmiento (2019) and Afriliani et al. (2020), which also found AI to be effective in enhancing language proficiency. These findings lay the groundwork for future research aimed at exploring how AI-assisted strategy training can further improve student writing outcomes and reduce anxiety. Future studies are recommended to examine long-term effects of AI integration, the impact of differentiated strategy instruction, and the role of individual learner variables—such as gender and learning preferences—in shaping writing success.

Conclusions

Based on the analysis of the research findings, as well as their discussion and interpretation, it can be confidently concluded that the AI-integrated instructional program was effective in enhancing participants' vocabulary development and broader writing-related competencies. The program fostered a shift in learner attitudes toward greater independence, with many pupils demonstrating an increased awareness that classroom instruction alone is insufficient for mastering writing skills. Instead, they recognized the value of engaging with AI tools beyond school hours as a means of reinforcing and extending their language learning.

By integrating English use into meaningful, authentic contexts through the use of AI, the program created a dynamic and engaging learning environment. Pupils were exposed to a wide range of communicative tasks that encouraged them to express themselves, pose questions, negotiate meaning, and clarify misunderstandings—all within a low-anxiety, supportive classroom atmosphere. The novelty of interacting with real-life AI applications served not only as a motivational factor but also as a foundation for their continued exploration of language.

In addition to improving vocabulary, the program also played a significant role in promoting autonomous learning behaviors. Students were introduced to a variety of digital tools that helped draw their attention to essential linguistic features such as word and sentence stress, and effective communication strategies in writing. The AI applications used throughout the program offered immediate, personalized feedback that allowed learners to identify patterns in their own writing and take steps to refine their output.

Student feedback provided qualitative confirmation of the program's impact. Many participants expressed genuine enthusiasm and appreciation for the AI-based approach. One student enthusiastically stated, "I loved the program, and from now on I will look for AI to improve my language, especially writing and reading." Another student reflected on the practical benefits, saying, "When we made conversations, it was easy to use expressions from the AI and imitate the way AI taught them." These comments exemplify the positive reception the program received and underscore its effectiveness in fostering both linguistic competence and learner motivation.

Overall, the majority of participants responded favorably to the AI-integrated sessions, finding them both enjoyable and beneficial to their language development. The findings suggest that such programs can serve as powerful pedagogical tools, particularly in contexts where personalized learning and increased student autonomy are desired outcomes. The integration of AI into language learning thus holds considerable promise for enhancing student engagement, vocabulary acquisition, and writing fluency in EFL contexts.

In conclusion, the AI-based program had a myriad of benefits. It did not only enhance writing skills, especially vocabulary aspects, but also foster a deeper understanding of the cultural context in which the language is written because the AI apps can provide experiences which reflect different cultures. The study also examined students' use of writing strategies and their relationship with apprehension and achievement in English as a Foreign Language (EFL) majors. Results showed that students who used effective strategies performed better in language achievement. EFL practitioners should investigate students' use of writing strategies and understand how they influence their achievement, starting at early stages of EFL education. Gender plays a significant role in the EFL writing process, and teachers should recognize factors affecting strategy use among students. The research serves as a preliminary investigation for future studies to assess whether student achievement improves after training on writing strategies and if writing apprehension can be reduced.

Recommendations

In light of the study's findings, a number of pedagogical and institutional recommendations are proposed to enhance the teaching and learning of English as a Foreign Language (EFL), particularly in relation to writing and communication skills within AI-supported environments:

- **First and foremost, it is recommended that teachers design and assign class activities that encourage regular and meaningful oral communication among pupils, with a clear focus on the development of oral fluency.** These tasks should be purposeful and interactive, allowing students to practice speaking in natural contexts and apply language structures confidently and fluently.

- **EFL teachers are also encouraged to shift away from their traditional role as the sole authority and provider of information, and instead assume more dynamic roles as facilitators, motivators, organizers, and providers of feedback.** In doing so, they can create a more learner-centered environment that promotes active participation, critical thinking, and independent inquiry.

- **At the institutional level, school administrations should support the enhancement of writing skills by actively promoting writing-based classroom activities and providing the technological infrastructure necessary for students to access, engage with, and share AI applications.** This includes ensuring availability of devices, internet access, and guidance on safe and productive use of educational technologies.

- **Teachers are also encouraged to create meaningful and context-rich learning environments that foster engagement in classroom discussions, group activities, and written assignments.** When students perceive classroom tasks as relevant and connected to their real lives, their motivation and investment in learning are significantly enhanced.

- **Curriculum planners and developers are advised to enrich existing curricula with activities specifically designed to improve pupils' writing skills while also incorporating the pedagogical use of AI tools.** Integrating AI-supported content and learning experiences into the curriculum can modernize language education and align it with the digital realities of learners.

- **Collaborative learning should be emphasized through increased use of group work and pair work, which are essential for promoting social interaction, shared meaning-making, and the development of confidence in communication.** Such collaborative contexts help students become more comfortable expressing their ideas,

reduce their reluctance to participate, and enhance their listening, reading, and speaking skills through peer interaction.

- **Teachers are advised to select instructional activities that are closely aligned with learners' personal interests, backgrounds, and prior knowledge.** AI technologies, with their adaptive learning features and data-driven personalization, can greatly assist in achieving this alignment by offering learners content that is relevant, engaging, and appropriate to their individual needs.

- **Moreover, educators have a responsibility to guide students toward greater autonomy by helping them become self-regulated learners.** Encouraging pupils to set goals, monitor their progress, and reflect on their learning processes can significantly strengthen their writing performance and overall academic confidence.

- **Finally, it is essential that teachers embrace the use of modern technological tools—particularly AI applications—in the teaching of language skills in general, and writing skills in particular.** However, this integration must be done thoughtfully, taking into consideration learners' age, language proficiency, and individual interests, in order to ensure that the technology serves as a support rather than a distraction

Implications of the study

The results of the study raised a variety of implications in the field of EFL, these implications can be summarized as follows:

1- EFL pupils Using

AI in EFL has proved effective in enhancing writing skills. They represent a good way to expose pupils to various authentic lingual and cultural contexts at their convenience of pace and place. The program of the current study is considered a model for students who seek to improve their pronunciation and fluency in English. It helps to raise students' cultural awareness of the target language. In brief, the current program enhances EFL learning in a holistic manner.

2- EFL Teachers

The AI-based program provides EFL teachers with an unconventional means to capture pupils' attention and interest, making the learning experience more engaging and entertaining, because AI apps are already appealing to millennials and generation Z. the use of Vlog is a convenient way to get authentic language contents in real life context. In addition, it helps EFL teachers to easily incorporate cultural aspects in EFL instruction.

3- EFL Curricula Designers

A major contribution to the current study is that it makes language learning more relevant to contemporary communication styles. It also presents different instructional activities that proved to be effective in developing writing skills. Educators can make use of the program as a model to integrate cultural aspects into language learning materials. Therefore, curricula designers may adopt this useful strategy and integrate it in new curricula.

4- EFL Researchers

The current study has opened the road to researchers in the field of writing skills and AI apps for new disciplines of research. Researchers exploring these areas can investigate various aspects of the impact of Vlogs on EFL learning and teaching.

Suggestions for Further studies

Based on the results of the current study, the following suggestions can be presented for future research:

- **Future research may focus on the integration of Artificial Intelligence (AI) tools to enhance learners' critical and creative reading skills.** Such studies could explore how AI-based reading platforms and intelligent annotation systems help learners engage with texts more deeply, encouraging inferential thinking, interpretation, and the formulation of original responses to literature and informational texts.
- **An important area of investigation is the impact of students' active participation in the development or customization of AI tools on their overall language learning achievement.** This includes research on whether involving learners in the creation of simple AI-based language tools—such as chatbots or vocabulary games—can foster a deeper sense of ownership, technical literacy, and motivation, ultimately leading to improved performance across language domains.
- **Further studies are needed to examine the effect of AI-supported writing tools on both the writing proficiency and self-confidence of students with specific learning difficulties.** Such research could help determine whether AI can serve as an effective assistive technology for students who struggle with written expression due to cognitive, emotional, or linguistic barriers.
- **Exploring the potential of AI applications in reducing students' reluctance to engage in communicative tasks remains a relevant area of inquiry.** Investigating whether AI can help create low-anxiety environments—through features like non-judgmental feedback, privacy, and self-paced interaction—would offer valuable insights into addressing communication apprehension in language classrooms.

- **A promising direction for future research involves exploring the link between the use of communication strategies and learners' motivation to acquire a second language.** This may involve analyzing whether AI can help learners become more aware of, and skilled in, employing strategic behaviors such as paraphrasing, asking for clarification, and using gestures—all of which may contribute to increased motivation and resilience in language learning.
- **The influence of AI on both language achievement and learners' self-efficacy represents another significant research avenue.** Empirical studies could examine how AI-supported environments affect students' perceptions of their own competence, autonomy, and control over their learning outcomes, particularly in reading, writing, listening, and speaking tasks.
- **Lastly, the role of AI in fostering critical listening and enhancing learners' willingness to engage in listening tasks merits closer attention.** Researchers might examine how AI technologies—such as speech recognition, real-time subtitling, or interactive audio materials—can be used to support the development of attentive and analytical listening skills, while simultaneously increasing learners' confidence and interest in auditory input

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