

**Kasdi Merbah University-Ouargla**



**Faculty of Letters and Languages Department of Letters and English Language**

**Dissertation of Master's Degree in the field of English Language and Literature**

**Major: Linguistics**

**Title:**

**The Use of Artificial Intelligence Tools in Identifying and  
Correcting Grammatical and Lexical Errors in EFL  
Learners' Essays**

**Case Study:** Second-Year Licence Students at the Department of Letters and English Language-  
Kasdi Merbah University- Ouargla-Algeria

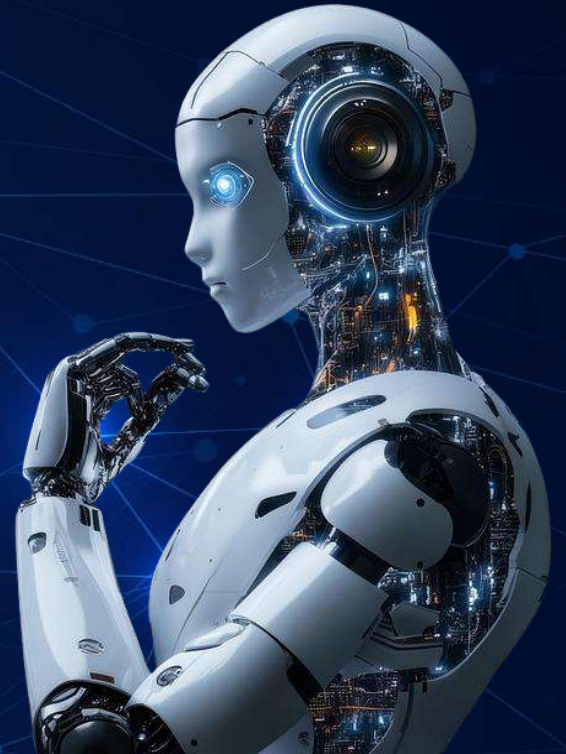
**Submitted by**

- Souhila AMARI
- Sawsan Ayat Arahman CHIBANI

**Supervised by:**

- Prof. Halima BENZOUKH

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## Outline of the presentation

1

### General Introduction:

Outlines the background, aim, significance, questions, and hypotheses.

2

### Methodology:

Describes the research design, population and sampling, setting, data collection instruments, data analysis, content validity, ethical considerations, and limitations.

3

### Data Analysis and Findings:

Analysis and Discussion, Findings Recommendations for Further Studies.

4

### Conclusion and Recommendations:

Synthesizes main points of the study



## General introduction



### 1. Background of The Study:

- The integration of **AI tools** like ChatGPT, Grammarly, and QuillBot has transformed language learning by providing immediate and individualized feedback.
- AI plays a crucial role in supporting **writing competence** by identifying and correcting grammatical and lexical errors with precision and efficiency.
- **ChatGPT:** A conversational AI model capable of generating coherent text, assisting with drafting, brainstorming, and providing interactive feedback.



- **Grammarly:** Focuses on grammar, spelling, punctuation, and style correction, often providing explanations for errors.



- **QuillBot:** Specializes in paraphrasing, rewriting, summarizing, and improving fluency, helping learners explore alternative expressions and expand vocabulary.



## General introduction

### 2. Aim of the Study:

- To **evaluate the effectiveness** of AI tools (ChatGPT, Grammarly, and QuillBot) in identifying and correcting grammatical and lexical errors in EFL essays.
- To **compare AI performance with teacher feedback**.
- To provide practical insights into the **effectiveness and limitations** of these tools.



### 3. Significance of the Study:

- Essay writing is one of the most demanding skills, requiring accuracy in grammar, lexis, and organization.
- AI tools facilitate development by **promoting learner awareness** and encouraging self-editing through detailed explanations
- AI tools feedback enhances learner ability in writing essays with correct grammar and lexical structures.
- Using these tools **saves time and effort** while offering an interactive approach to improving overall language proficiency.

### 4. Research Questions:

1. To what extent are AI tools effective in identifying and correcting grammatical and lexical errors in EFL learners' essays?
2. To what extent do AI tools identify and correct grammatical and lexical errors compared to human feedback?
3. What limitations and challenges do EFL learners face when using AI tools for grammatical and lexical error correction?



### 5. Hypotheses of the Study

H1: AI tools can enhance the identification and correction of grammatical and lexical errors in learners' essays.

H2: AI tools can provide accuracy levels comparable to teacher feedback in identifying and correcting grammatical and lexical errors.

H3: AI tools can lead to specific limitations and challenges that reduce their effectiveness in correcting grammatical and lexical errors.



## Research Design and Methodology

### Research Design:

- The study adopts a **mixed-methods approach**, integrating both quantitative and qualitative data to provide a comprehensive understanding of the research problem.
- It is grounded in the **pragmatist paradigm**, which focuses on finding practical solutions to existing problems using all available approaches.
- The design combines **statistical analysis** from questionnaires with **descriptive findings** from semi-structured interviews.

### Population and Sampling



**Population:** Second-year EFL students and teachers at Kasdi Merbah University, Ouargla.



**Sampling Strategy:** Purposive sampling was used for both students (focusing on those commonly engaged in essay writing) and teachers (those responsible for teaching writing).



**Sample Size:**

**Students:** 70 valid responses from a target of 100.

**Teachers:** 5 teachers were interviewed.





### Data Collection Instruments:

#### 1 Students' Questionnaire:

- A questionnaire composed of 24 questions delivered via Google Forms.
- With Likert-scale items and yes/no questions covering demographic information, AI tool usage, comparison with teacher feedback, error correction effectiveness, and limitations.

#### 2 Teachers' Interview:

A **semi-structured interview** featuring **13 questions** to collect qualitative insights on student error types, AI effectiveness, pedagogical comparisons, and limitations.

#### Data Analysis:

- #### 3
- **Statistical Analysis:** Quantitative data were processed using **Excel 2016** to generate descriptive statistics, such as percentages and charts, and to discuss the findings.
  - **Thematic Analysis:** Qualitative data were systematically **coded to identify recurring patterns** and shared meanings across the teacher interview responses.



4

### Content Validity:

- Validity was established through a **pilot test with 5 students** to ensure clarity and an **expert evaluation** by three experienced teachers to align questions with research goals.

5

### Ethical Considerations:

- Participation was entirely **voluntary**, informed consent was obtained, and all responses were kept **anonymous** and used strictly for academic purposes.

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### Limitations:

- Reduced student sample size (70 responses instead of 100).
- Purposive sampling limits generalizability.
- Chi-square test was not included due to small sample size and data characteristics.
- Potential for algorithmic bias in AI tools.
- Possibility of social desirability bias in self-reported **data**.

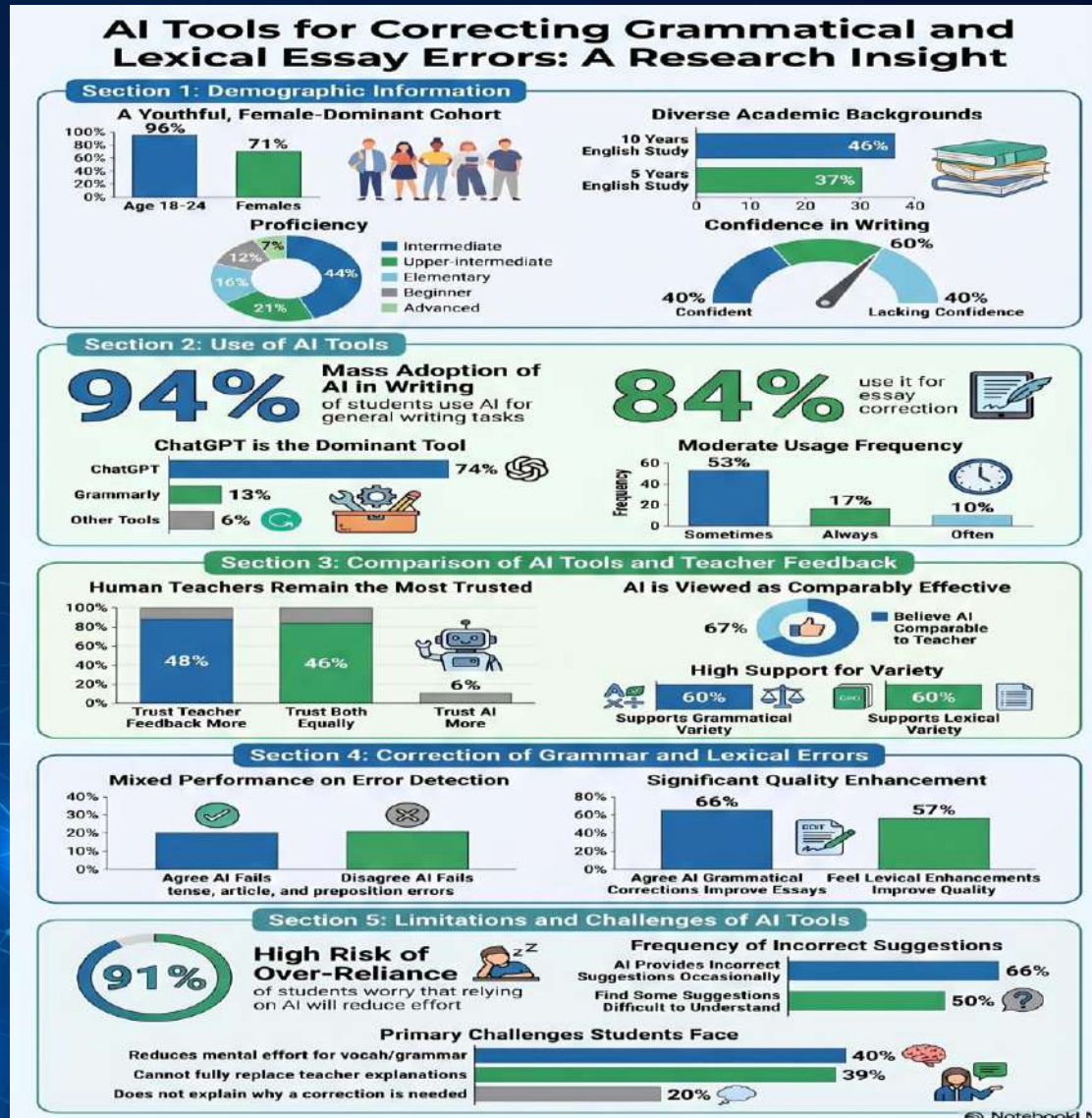
# Data Analysis and Findings



## Analysis and Discussions

### Analysis

### Analysis of Students



## Data Analysis and Findings

### Analysis of Teachers' Interview



- **Effectiveness:** AI is seen as effective for **common errors**, but teachers warn it lacks the ability to understand **context, tone, and nuanced meaning**.

**Feedback Distinction:** Teachers emphasize that AI feedback is helpful but their own feedback is **content-aware**, focusing on organization, coherence, and argumentation, which AI cannot fully address.

- **Limitations:** Teachers emphasize that AI lacks the ability to understand **context, tone, and the appropriateness of ideas**, which still requires human judgment.

**Teacher Profiles:** Interviewed educators have experience ranging from a few months to **12 years** in the field.

**Common Errors:** Teachers frequently observe **grammatical issues** (tense misuse, articles, prepositions) and **lexical challenges** (mother tongue interference, spelling mistakes).

- **AI Familiarity:** All teachers are familiar with AI tools and generally find them useful for **identifying surface-level errors**.

## Data Analysis and Findings

### Discussion:

1

**H1 (AI enhances error identification/correction): Confirmed** by both students and teachers

2

**H2 (AI accuracy is comparable to teacher feedback): Partially Denied**; teachers are seen as more reliable for deep, contextual, and pedagogical guidance

3

**H3 (AI has specific challenges/limitations): Confirmed**; major issues include over-reliance, lack of contextual sensitivity, and reduced student effort

## Findings of the study

### Findings of Students Questionnaire:

- **Efficiency:** Students value AI for **fast error detection** and organization.
- **Improvement:** AI enhances **grammatical structures** and **lexical choices**.
- **Teacher Trust:** Teacher feedback is **trusted more** for reliability and depth than AI feedback.
- **Aid Only:** AI is viewed as a **supplement**, not a teacher replacement.
- **Challenges:** Significant worry that tools **reduce learning effort** and thinking, AI can provide **incorrect or confusing suggestions**.

### Findings of Teacher Questionnaire:

**Effectiveness:** Teachers find AI effective for simple corrections and common errors, but note its limited ability to handle complex sentence structures or context-dependent choice.

**AI feedback Vs Teacher feedback:** Teachers highlight that their feedback is content-aware, addressing organization, coherence, and appropriateness, while AI feedback tends to remain at the surface level, focusing on grammar and mechanics.

**Challenges:** Teachers identified risks such as students accepting incorrect AI suggestions without evaluation and the reduction of a student's ability to learn from their own errors due to auto-correction

## Recommendations for Further Studies:

### Main Suggestions for Future Recommendations

**Develop Stronger Reading Habits:** EFL learners should be encouraged to cultivate robust reading habits, as reading and writing are complementary skills that reinforce one another.

**Promote Extensive Reading:** Engaging with diverse topics through extensive reading allows learners to generate original ideas and enrich their vocabulary.

**Reduce AI Dependency:** By integrating content more effectively through reading, students can produce better essays rather than depending solely on AI suggestions.

**Explore Long-term Impacts:** Future research should investigate the lasting effects of AI-assisted writing on learner autonomy, creativity, and critical thinking.



## Condensed General Conclusion

- **AI Effectiveness:** Tools like ChatGPT and Grammarly significantly assist EFL learners in identifying and correcting errors with high speed and efficiency.
- **Teacher Superiority:** Despite AI's benefits, students trust teacher feedback more for its reliability, pedagogical depth, and human judgment.
- **Supplementary Role:** AI functions as a complementary aid, not a replacement for the essential role of a human instructor.
- **Key Risks:** Major challenges include student dependency, potential misuse (copying), and the tools' inability to address complex context or critical thinking.
- **Final Verdict:** AI is a powerful assistant that empowers learners, but it must be balanced with teacher guidance to ensure academic integrity and deep learning..



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YOU.

