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Submitted and Defended by: Hayette Meddour

The Effects of ChatGPT on EFL Students' Paragraph Writing

The Case Study of First Year Master EFL Students at Mohamed Khider University Biskra, Algeria

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Board of Examiners:

- **Dr. Fatima Messaoudi**
- **Dr. Ahlem Salhi**
- **Mrs. Samira Messaibi Bousbaa**

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Declaration

I, Hayette Meddour, hereby declare that the dissertation entitled 'The effects of ChatGPT on EFL students' paragraph writing' is my own original work that has not been submitted before for any institution or any university for a degree. I also declare that all quoted and cited sources in this presented work are put directly in the list of references. This work was officially finished and certified at Mohammed Khider University of Biskra, Algeria.

Certified by: Ms. Hayette Meddour, Master Two student, Section of English.

Dedication

From the depths of my heart, I extend my sincerest thanks and deepest gratitude to my beloved family. Your unwavering support, endless encouragement, and constant belief in me have been the foundation upon which I have built this journey. Without your presence in my life, reaching this stage would not have been possible.

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Abstract

This study examines the influence of the AI tools on paragraph writing of Master one EFL student. Specifically, it explores how the integration of this AI applications can impact students' writing skills in academic writing. The research aims to offer insights into the role of artificial intelligence, particularly ChatGPT, in enhancing students' academic writing abilities by providing real-time error correction and personalized feedback. The study also seeks to explore how the use of ChatGPT promotes greater autonomy among students by encouraging self-correction and independent learning. It is hypothesized that the integration of ChatGPT into EFL classrooms will lead to an improvement in students' paragraph writing. To achieve these objectives, the study adopts a quantitative research approach. A questionnaire was randomly administered to twenty M1 EFL students to gather insights into their experiences using ChatGPT for paragraph writing. The findings suggest that students perceived a positive impact of ChatGPT on their paragraph writing skills. Participants reported that the tool helped them identify and correct their writing errors, improve the structure and coherence of their paragraphs, and enhance their confidence in producing well-organized written texts. The results highlight the potential of AI tools like ChatGPT to support the development of paragraph writing skills, promote students autonomy, and encourage a more practical, hands-on approach to writing instruction. Based on these findings, it is recommended that EFL instructors consider incorporating AI tools such as ChatGPT into their writing instruction. Training sessions should be provided to both teachers and students to ensure effective and responsible use of these technologies.

Keywords: Academic writing, Artificial intelligence, ChatGPT, Paragraph writing.

List of Abbreviations and Acronyms

AI: Artificial Intelligence.

AW: Academic Writing.

EFL: English as a Foreign Language.

GAI: General Artificial Intelligence.

GPT: Generative Pre-trained Transformer.

ITS: Intelligence Tutoring System.

LLM: Large Language Model.

NLP: Natural Language Process.

TL: Target Language.

VR: Virtual Reality.

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General Introduction

Introduction

English language is considered as a foreign language in the Algerian Education context. English foreign language (EFL) is characterized by four main skills such as: writing, reading, listening, and speaking. As Tarigan (2008, as cited in Sagala et al., 2023) stated that” writing skills is one of the productive and expressive language skills used to communicate indirectly and not in a manner face to face with other parties”. It is also a fundamental skill that allows us to communicate our thoughts, ideas effectively. Writing expression is recognized as one of the most important subjects in the study of second language. Moreover, it has been designed to equip students with the skills and knowledge necessary to excel in various educational programs (Aljuaid, 2024). Researchers have specifically designed these educational programs to assist students in improving their writing performance in core concepts. These academic writing concepts include structuring and organizing academic papers, ensuring proper referencing and citation of borrowed scholarly ideas, and writing inappropriate language and style (Cheong et al., 2023, as cited in Aljuaid, 2024; Mendoza et al., 2022, as cited in Aljuaid, 2024; Schillings et al., 2023, as cited in Aljuaid, 2024). Academic writing is one of the many subjects introduced in the curriculum of EFL students, while writing perfectly might be challenging for students or novice writers. In this academic context, students are expected to produce specific writing genres, such as paragraphs, summaries, essays, critical reviews, and research papers (Al-Khasawneh & Maher, 2010, as cited in Syahnaz & Fithriani, 2023). To reduce these challenges, there is a growing trend in using writing technologies to support new opportunity in writing skills.

This trend called Artificial Intelligence (AI) which is a field of study that combines the applications of machine learning, algorithm production, and natural language processing. AI has a variety of educational applications, such as personalized learning platforms to promote students' learning, automated assessment systems to aid teachers, and facial recognition systems to generate insights about students' behaviors. When students tend to write in a foreign language, it is one of the most challenging skills, especially for EFL (English as a Foreign Language) students. EFL students must produce written forms considering syntax's accuracy, semantics' acceptability, and culture's appropriateness. Moreover, they must address multiple issues in their writing, such as purpose, audience, content, organization, vocabulary, spelling, punctuation, and capitalization. Many students need help when expressing their ideas in a foreign language. However, they often find themselves needing more linguistic resources to do so. It highlights the need for students to acquire the proper knowledge to write effectively in English. To produce an acceptable piece of writing, students should utilize various writing tools to progress from a blank sheet of paper to a final version that meets their academic needs and requirements.

Nowadays, one may notice that technology has expanded rapidly, becoming a crucial component of our world. Artificial intelligence (AI) has significantly transformed language learning and teaching with the widespread availability of the internet and technological devices. One of the most notable goals of artificial intelligence is to create automated systems or Chatbots that can understand their surroundings and perform tasks in a human-like manner, such as "ChatGPT." Thus, it is essential to recognize that integrating artificial intelligence tools can significantly enhance EFL students' language skills, particularly in writing.

1. Statement of the problem

Recently, there has been a growing interest in enhancing students' paragraph writing within the context of foreign language learning. Many EFL (English as a Foreign Language) students still face challenges when writing in a foreign language and struggle to master its aspects. However, with the rise of artificial intelligence tools like ChatGPT, writing has become more efficient and effective for many EFL students. Therefore, this study explores The Effects of ChatGPT on EFL students' paragraph writing.

2. Research Questions:

Writing is one of the challenging aspects of learning that may face EFL students when dealing with the target language (TL). EFL students must develop ideas when writing about specific topics and use various tools to enhance their skills. To explore this area further, the researcher should tackle a review question about the following research so it can be as follows:

1) To what extent does ChatGPT impact the development of paragraph writing for EFL students?

2) In what ways can the use of ChatGPT help reduce the difficulties that face EFL students' paragraph writing?

3. Research hypothesis:

This study aims to show some critical questions about integrating artificial intelligence in English as a Foreign Language (EFL) classrooms. The previous research questions above require hypotheses to explore and investigate in this study, and they are as follows:

1. The integration of CHATGPT into EFL classrooms will lead to an improvement in students' paragraph writing.

4. Aims of the Study

The aim of this study is to investigate the effects of ChatGPT on EFL students' paragraph writing. As AI-powered tools like ChatGPT become increasingly integrated into educational settings, it is essential to explore their potential in enhancing students' writing paragraph. This research seeks to understand how ChatGPT can assist EFL students in improving their ability to organize, develop, and refine their paragraph writing. Additionally, the research aims to assess whether the tools can help students overcome common writing challenges, such as structure, coherence, and clarity. Through this, the study seeks to contribute valuable knowledge to the field of language education.

5. Significance of the Study

This study aims to investigate the impact of ChatGPT on EFL students' paragraph writing. By exploring the use of AI-powered tools like ChatGPT in the Algerian context, this research seeks to understand how they can enhance students' writing abilities, particularly in terms of content quality, organization of ideas, and overall writing fluency. Additionally, the study will examine the students' attitude regarding the integration of AI tools in EFL classrooms, providing

valuable insights into their potential benefits and limitations. Ultimately, this research aims to contribute to the development of innovative pedagogical practices that leverage AI technology to improve language learning outcomes and prepare students for the demands of the digital age.

6. Methodology

The main aim of this research is to investigate how ChatGPT tool affect students' writing paragraph and to evaluate the advantages of incorporating these tools into writing lessons in English as a foreign language (EFL) classroom.

In order to achieve the objectives of this study, a quantitative research approach was adopted. This method enabled the collection of measurable data related to students' paragraph writing.

To test the research hypothesis, the study relied exclusively on a single data collection method within the quantitative framework, ensuring consistency and reliability in the analysis.

7. Population and Sample

Random Assignment: In this study, Master One (M1) students were selected through a process of random assignment to participate in the questionnaire. This method was employed to ensure that each student had an equal chance of being included in the sample, thereby reducing potential bias and enhancing the validity of the findings. Random assignment also helps to ensure that the collected data accurately reflects the diverse perspectives and experiences of the students population regarding their use of AI tools in paragraph writing.

8. Structure of the dissertation

Chapter One lays the foundation for the study by exploring the first key variable: Artificial Intelligence (AI). It begins with a theoretical discussion on the evolving relationship between technology and education, considering historical developments and various educational theories. The chapter then defines AI, distinguishing it from automation and outlining its potential benefits in educational settings. It also categorizes the different types of AI and examines its practical applications in education, with a particular focus on ChatGPT highlighting its academic uses, strengths, and limitations. The chapter concludes by summarizing the significance of AI in shaping modern teaching and learning practices.

Chapter Two shifts the focus to the second key variable: writing skills, particularly within the context of English as a Foreign Language (EFL) education. It begins by defining writing and outlining its main types: narrative, descriptive, persuasive, and expository. The chapter then explores the stages of the writing process, from pre-writing to publishing, emphasizing their role in effective composition. It highlights the importance of writing and also addresses summarization, discussing its definition, process, and educational value, before concluding with reflections on the role of writing in language learning.

Chapter Three is dedicated to the practical aspects of the research. It outlines the methodologies used to collect data, focusing on the analysis of students' experiences and responses gathered through a questionnaire. The chapter presents an interpretation of the findings, highlighting the effectiveness of ChatGPT as an AI tool aimed at enhancing paragraph writing of EFL students. These results contribute to a deeper understanding of the role AI can play in language learning, guiding the study toward a well-informed conclusion on the impact of ChatGPT in improving writing proficiency. This investigation offers meaningful insights into

how emerging technologies can reshape writing instruction and support learner development within the context of digital education.

CHAPTER1 : ARTIFICIAL INTELLIGENCE

Chapter One: Artificial Intelligence

Introduction

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 - 1.1. Historical Context
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2. Definition of Artificial Intelligence
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 - 4.1. Overview of Chat GPT
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5. Advantages and Disadvantages of Chat GPT
6. Conclusion

Introduction:

The integration of Artificial Intelligence (AI) tools, such as ChatGPT and other writing assistants, has had a significant impact on students' paragraph writing and in the 21st century. These tools provide real-time feedback on various aspects of writing, including: Grammar, Punctuation, Style, and Coherence, helping students identify and correct errors they may have overlooked. By offering suggestions and explanations, AI tools help students refine their writing skills and foster a deeper understanding of writing conventions, enabling them to write more precisely and with greater variety.

In addition to improving writing quality, AI tools also enhance students' performance in writing. By making the revision process more manageable, these tools help students feel less overwhelmed by their mistakes. Real-time feedback gives students confidence, as they can immediately see improvements in their work. As they experience continuous progress, their belief in their ability to succeed in writing tasks grows, motivating them to take on more challenging writing projects and experiment with their writing style. Ultimately, AI tools not only support better writing but also encourage a stronger sense of self-confidence in students.

1. Theoretical overview of relationship between technology (AI), and education

Nelson (2024) explains that artificial intelligence in education enhances both learning and teaching by offering personalized instruction and improving efficiency. AI systems can assess students' strengths and weaknesses and then deliver customized lessons tailored to their pace and level of understanding. For educators, AI reduces the burden of repetitive administrative work, such as grading or checking assignments, allowing them to focus on more meaningful tasks like interactive teaching and student mentoring. In addition, AI enables the development of innovative digital learning environments, such as virtual classrooms, which many students find highly engaging. Beyond making education more efficient or enjoyable, AI plays a crucial role in supporting students with varying needs offering additional challenges to advanced students and timely assistance to those struggling. Current technologies already include chat bots that answer basic student queries and adaptive tutorials that adjust content based on a students' progress.

1.1.Historical context

According to Panda (2024), “the history of the development of technologies for programmable computing can be traced back to the mid-20th century and involves several steps. The first person to express the idea of AI was Alon Turing in the 1940s, who tried to envision designing machines with the capability to think like humans. The enabling literature in this paradigm can be traced to Turing’s paper on computing machinery and intelligence (Turing, 1950) and McCarthy’s definite naming of AI in 1956 at the Dartmouth conference. In the 1960s and 1970s, educational software was developed, and computer-assisted instruction started making its way. Computer-assisted learning(CAL) in the 1960s and 1970s included PLATO (Programmed Logic for Automatic Teaching Operations), developed at the University of Illinois,

which aimed to make use of computers for individualized learning and teaching (Cohen, 2000). With the development of computing power and the protraction of technology in the 1980s and 1990s, it is increasingly turning towards more advanced uses. Other forms of ITS development include creating expertise in the form of an expert system whose models included intelligent diagnosis systems for medicine and mechanics problem solving. It applied rule-based AI for suggesting feedback and advice and therefore inaugurated modern adaptive learning technologies (W. Wenger, 1987). The introduction of machine learning algorithms in the late 1990's moved the advancement of AI in education to another level and made it possible for the tools used in education to be far more dynamic". (p. 3756).

1.2.Impact of Technology on Teaching and Learning

According to Osasebor and Oribhabor (n.d.) "technology has brought about dynamics in the teaching-learning process. The application of educational technology in the classroom setting improves teaching- learning and permits teachers and the students to interact as human beings in a climate where people control their environment for their own purposes. The student-teacher dynamics has drastically changed since the introduction of technology based class structure. The instructor is no longer the king of the classroom but rather a middleman between information and student. Instead of a passive sponge soaking up knowledge, the students have now become an active informational architect, procuring and displaying information. Internet has unlocked the world of opportunities for learners. The ideas and information that were once out of the reach of students are easily gained by a single click on internet and with this, the students of all ages can connect, share and learn on global basis. Presently electronic libraries are enriched with articles from scholars down- loaded through internet. Technology has opened door for research materials and encouraged scholars to develop interest in writings". (pp. 3–4).

1.3.Theories on Technology's Role in Learning

Several educational theories help explain the role of technology in learning, with AI playing an increasingly important role in supporting and enhancing these theories:

- **Behaviorism:** Trajkovski (2023) discusses that behaviorism, which emerged in the early 20th century as a response to introspective psychology, focuses on observable and measurable human behavior. Pioneered by thinkers like John B. Watson and B.F. Skinner, it argues that behavior is learned through conditioning based on interaction with the environment and can be shaped through positive or negative reinforcement. In the realm of artificial intelligence and prompt engineering, this theory finds a parallel in how AI systems are trained. Similar to how behaviorists use stimuli to shape human behavior, prompt engineers use prompts as stimuli to generate specific responses from AI models. When the AI produces a desired output, it is reinforced encouraging the system to replicate similar responses in future, comparable situations.
- **Cognitivism:** Wirestam (2024) highlights that Cognitive psychology and artificial intelligence are closely connected, as they share similar objectives and face overlapping challenges. While cognitive psychology explores human mental processes through experimental research and theoretical models, AI focuses on building intelligent systems that replicate these cognitive functions. Despite approaching the subject from different angles, both disciplines aim to better understand how thinking and learning occur. By applying the knowledge and techniques from cognitive psychology, AI developers can design systems that function in ways that more closely resemble human thought.

- **Constructivism:** This theory, popularized by thinkers like Jean Piaget and Lev Vygotsky. Papert and Harel (1991) argue that the core idea of constructivism is that people learn best through hands-on creation, where students build, design, and experiment, allowing personal styles, rather than passively receiving information. This approach sees knowledge as something constructed, not transmitted.

AI supports constructivism by providing adaptive, interactive learning environments where students can engage with personalized content, test hypotheses, and receive feedback based on their actions

- **Connectivism:** According to Zary (2024), Connectivism is a learning theory developed by George Siemens and Stephen Downes. Siemens introduced the theory in his 2004 article "Connectivism: A Learning Theory for the Digital Age," and Downes expanded on it through various writings and discussions. Connectivism emphasizes the role of social and technological networks in the learning process, highlighting the importance of connections and knowledge flow in the digital age.

AI facilitates this by helping students access a vast array of resources and learning materials through intelligent recommendation systems and knowledge databases, expanding their learning networks and fostering collaborative knowledge- building.

2. Definition of Artificial Intelligence

AI is increasingly being leveraged to develop innovative teaching and learning solutions, many of which are currently undergoing testing across diverse educational settings.

According to Cile Stryker and Eda Kavloglu (2024) Artificial intelligence (AI) is technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision making, creativity and autonomy. In the 21st century, Copeland defined AI as the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from experience.

AI is “the science and engineering of making intelligent machines” (McCarthy, 1955, as cited in Manning, 2020). Much research has humans program machines to behave in a clever way, like playing chess, but, today, we emphasize machines that can learn at least somewhat like human beings do.(Manning, 2020).

According to Coursera Staff (2024), artificial intelligence (AI) is the theory and development of computer systems capable of performing tasks that historically required human intelligence, such as recognizing speech, making decisions, and identifying patterns. AI is an umbrella term that encompasses a wide variety of technologies, including machine learning, deep learning, and natural language processing (NLP).

Although the term is commonly used to describe a range of different technologies in use today, many disagree on whether these constitute artificial intelligence. Instead, some argue that much of the technology used in the real world today actually constitutes highly advanced

machine learning that is simply a first step towards true artificial intelligence, or “general artificial intelligence” (GAI).

Yet, despite the many philosophical disagreements over whether “true” intelligent machines actually exist, when most people use the term AI today, they’re referring to a suite of machine learning-powered technologies, such as Chat GPT or computer vision, that enable machines to perform tasks that previously only humans can do like generating written content, steering a car, or analyzing data.

Craig, Laskowski, and Tucci (2024) explain that artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. Examples of AI applications include expert systems, natural language processing (NLP), speech recognition and machine vision. As the hype around AI has accelerated, vendors have scrambled to promote how their products and services incorporate it. Often, what they refer to as "AI" is a well-established technology such as machine learning.

2.1.AI vs. Automation

According to Homann(2024), AI and automation are two terms that are often used interchangeably, probably because they serve similar purposes: to help businesses operate smarter and more efficiently.

As mentioned, AI and automation are often discussed together because they both involve using technology to perform tasks traditionally done by humans. However, while they overlap, they have distinct characteristics and applications. The point of AI isn't to perform repetitive tasks like automation. Instead, AI is designed to mimic humans at a more intellectual level, and to be able to perform tasks that they learn by observing patterns and past outcomes.

2.1.1. Similarities between AI and Automation:

1. **Efficiency and Productivity:** Both AI and automation are used to increase efficiency and productivity in various industries. They reduce the need for human labor for repetitive or easily codified tasks, thus speeding up processes and reducing errors.
2. **Task Execution:** At a fundamental level, both AI and automation involve machines carrying out tasks. Whether these are physical tasks (like in manufacturing) or cognitive tasks (like data analysis), the goal is to reduce the human workload.
3. **Technological Progress:** Both are results of advances in technology and are crucial in the ongoing transformation in industries such as manufacturing, services, and business processes.

2.1.2. Differences between AI and Automation:

1. **Complexity and Adaptability:** Automation is typically rule-based and designed to perform a highly specific, repetitive task without variation. It doesn't "learn" from its experiences but rather follows pre-set instructions. In contrast, AI involves a level of complexity and adaptability; it can learn from data, improve over time, and make decisions based on its learning. AI can handle a wider variety of tasks and adapt to new situations that it wasn't explicitly programmed for.
2. **Scope of Application:** Automation is generally applied to tasks that require consistency and precision but do not necessarily require adaptation or decision-making based on areas requiring decision-making that mimics human judgment, such as recognizing speech, interpreting complex data, or predicting trends.

3. **Technological Foundations:** While automation can be as simple as a mechanical device designed to multiply human effort (like a lever or pulley system), modern automation often involves more complex machinery and software. AI, on the other hand, relies on sophisticated algorithms and computational theories like neural networks, natural language processing, and more, to perform tasks that require cognitive abilities.
4. **Goal Orientation:** Automation's primary goal is to perform a task exactly and repeatedly with high reliability. AI's goals can be more aligned with mimicking human behaviors and performing tasks in a way that is perceived as intelligent or thoughtful.

2.2. Benefits of Artificial Intelligence in Education

According to Huyen Trang(2024) artificial Intelligence (AI) is becoming an essential part of the modern education sector, bringing breakthroughs in teaching and learning methods. In education, AI creates new teaching and learning approaches, helping personalize the learning experience for each student. AI in education not only improves the quality of teaching but also enables schools and educational organizations to operate more efficiently, focusing on delivering accurate and timely knowledge to students.

2.1.1. Personalized Learning for Each Student

One of the biggest benefits of AI in education is the ability to personalize the learning experience. AI can collect and analyze learning data for each student, such as learning speed, learning style, and specific strengths and weaknesses. Based on this data, the system can suggest the most suitable programs, learning materials, and teaching methods for each student. This helps

students unleash their individual potential without the pressure of keeping up with the general pace of the class.

2.1.2. Support for Teaching and Reduced Workload for Teachers

Artificial Intelligence not only enhances students' learning effectiveness but also provides valuable support for teachers during the teaching process. By automating administrative tasks such as grading, tracking learning progress, and analyzing students' learning outcomes, AI helps teachers save time and effort. This allows teachers to allocate more time to important tasks such as preparing high-quality lesson content, interacting with and supporting struggling students. Additionally, AI systems can automatically send detailed reports on students' learning progress and areas for improvement to teachers, enabling timely interventions to enhance learning outcomes for each student.

2.1.3. Enhanced Management and Optimization of Educational Resources

In addition to supporting students and teachers, Artificial Intelligence also helps educational administrators improve management efficiency and optimize their resources. AI systems can analyze data on learning needs, facility utilization, and resource allocation to make optimal decisions regarding class schedules, teaching programs, and classroom usage. This helps schools make efficient use of resources and improve productivity.

2.1.4. Improved Quality of Teaching and Learning

With the support of Artificial Intelligence (AI), teachers can access detailed data on students' learning outcomes, allowing them to adjust teaching methods to best suit each class or individual. Data on academic achievements, psychological factors, and learning barriers enable

teachers to better understand students' strengths and weaknesses, thereby improving their teaching delivery and lesson content. Educational administrators can also use AI-driven analysis to adjust and enhance the quality of training programs, ensuring that the curriculum remains relevant to students' needs and societal development.

2.1.5. Enhanced Learning Experience through Virtual Reality and Simulation Technology

AI enables the integration of Virtual Reality (VR) and simulation technology into teaching, allowing students to practice and experience real-life scenarios in a vivid and realistic manner. For fields that require hands-on experience and real-life immersion, such as medicine, engineering, and science, the use of VR and simulation tools not only helps students grasp knowledge but also hones practical skills in a safe, risk-free environment.

3. Types of Artificial Intelligence

According to Coursera Staff (2024), artificial Intelligence (AI) is classified into various types based on its capabilities and functions. These include narrow AI, which is built to handle specific tasks, and general AI, which seeks to replicate human intelligence across different areas. AI can also be grouped by its degree of autonomy, such as reactive machines, limited memory, and self-aware systems. The four main types of AI as defined by Arend Hintze They are as follows:

A. Reactive machines

Reactive machines are AI systems that have no memory and are task-specific, meaning that an input always delivers the same output. Machine learning models tend to be reactive machines because they take customer data, such as purchase or search history, and use it to deliver

recommendations to the same customers. This type of AI is reactive. It performs “super” AI because the average human would not be able to process huge amounts of data, such as feedback customized recommendations. Reactive AI, for the most part, is reliable and works well in inventions like self-driving cars. It doesn’t have the ability to predict future outcomes unless it has been fed the appropriate information.

B. Limited memory

The next type of AI in its evolution is limited memory. This algorithm imitates the way our brains’ neurons work together, meaning that it gets smarter as it receives more data to train on. Deep learning algorithms improve natural language processing (NLP), image recognition, and other types of reinforcement learning. Limited memory AI, unlike reactive machines, can look into the past and monitor specific objects or situations over time. Then, these observations are programmed into the AI so that its actions can be performed based on both past and present moment data. But in limited memory, this data isn’t saved into the AI’s memory as experience to learn from, the way humans might derive meaning from their successes and failures. The AI improves over time as it’s trained on more data.

C. Theory of mind

Theory of mind AI is theoretical type that could be built in the future. As such, there aren’t any real-world examples yet. If it is developed, theory of mind AI could have the potential to understand the world and how other entities have thoughts and emotions. In turn, this affects how they behave in relation to those around them. Human cognitive abilities are capable of processing how our own thoughts and emotions affect others and how others’ affect us this is the

basis of our society's human relationships. In the future, theory of mind AI machines could be able to understand intentions and predict behavior, as if to simulate human relationships.

D. Self-awareness

The grand finale for the evolution of AI would be to design systems that have a sense of self, a conscious understanding of their existence. This type of AI does not exist yet. This goes a step beyond theory of mind AI and understanding emotions to being aware of themselves, their state of being, and being able to sense or predict others' feelings. For example, "I'm hungry" becomes "I know I am hungry" or "I want to eat lasagna because it's my favorite food."

Artificial intelligence and machine learning algorithms are a long way from self-awareness because there is still so much to uncover about the human brain's intelligence and how memory, learning, and decision-making work. In this category, AI systems have a sense of self, which gives them consciousness. Machines with self-awareness understand their own current state.

4. Applications of Artificial Intelligence in Education

AI is changing education in exciting ways. From personalized learning to automated grading. AI in education means using artificial intelligence to help students learn better, and teachers become more efficient.

4.1. Overview of Chat GPT

According to Graefen and Fazal (n.d.), "The subject of computer science known as artificial intelligence (AI) is growing quickly and focuses on creating intelligent systems that are capable of activities that would typically need human intellect, such as visual perception, speech

recognition, decision-making, and language translation. In order to create safe and practical AI for the benefit of humanity, Open AI was established in 2015 and focuses on advancing the field of AI through cutting-edge research, innovative technologies, and open collaboration. Open AI's research covers a wide range of AI-related fields, including machine learning, natural language processing, robotics, and more. GPT-3 (Generative Pre-trained Transformer 3) is a language model developed by Open AI, one of the world's leading AI research organizations, and designed to produce natural language texts that are virtually indistinguishable from human writing. With over 175 billion parameters, it is the largest and most powerful language model. GPT-3 can generate highly logical and contextually relevant text, making it useful for a wide range of applications, including chat bots, content generation, and language translation. In November 2022, Chat GPT, an advanced AI language model developed by Open AI, was released. This cutting-edge technology possesses the capability to generate responses that resemble human-like conversation, making it an invaluable resource for numerous applications, such as chat bot interactions and language translation. Chat GPT, a sophisticated architecture developed by Open AI, harnesses the power of deep neural networks to generate speech that is remarkably like that of a human. This remarkable capability signifies a substantial leap forward in the field of natural language processing, holding the promise to reshape our interactions with technology. By enabling interactions that are nearly indistinguishable from human conversation, Chat GPT has the potential to revolutionize the way we engage with and benefit from advanced AI systems". (p. 43).

4.2. Definition of Chat GPT

According to Amanda Hetler(2025) ChatGPT is an artificial intelligence (AI) chat bot that uses natural language processing to create humanlike conversational dialogue. The language model can respond to questions and compose various written content, including articles, social media posts, essays, code and emails.

Shidiq (2023) explains that the ChatGPT system, an AI-based chat bot with the ability to produce text in various formats whether formal, informal, or creative writing that poses challenges in the world of education. The ease of ChatGPT in processing information from text input reduces the originality of work, so it tends to be uncreative. The ability of the ChatGPT system to understand human language makes it very easy to write creatively, such as writing poems, short stories, novels, or other types of writing whose quality is equivalent to human work. Using the study of creative writing theory, this article aims to discuss the ChatGPT system and its impact on students' lack of creativity in writing skills. This article uses qualitative methods with library research data collection techniques by analyzing scientific journals and other articles relevant to the discussion.

4.3. The Use of Chat GPT in Academia

According to Hao Yu (2023), in the field of education, ChatGPT is a powerful tool that can be used to create educational content and assist language learning. This tool can automatically generate various texts, including papers, abstracts, and textbooks, with little human intervention, making it an important resource for students. By utilizing artificial intelligence technology, students can incorporate ChatGPT as part of a diversified teaching tool to achieve a more interesting and innovative teaching experience. Additionally, students can use ChatGPT for self-inquiry, further exploring knowledge points and constructing a genuinely intelligent educational

system. Therefore, there are many voices supporting the application of this intelligent tool in education. At the University of Cambridge, Professor Bhaskar Vira pointed out that university students should fully utilize artificial intelligence technology, such as ChatGPT and other new tools, and should not be limited. These technologies can help student better master knowledge and improve learning efficiency. However, to ensure that students adhere to academic integrity when using these new technologies, schools need to make appropriate adjustments to teaching methods and examination standards (Stephens, 2023, as cited in Hao Yu, 2023). But more importantly, it is essential to teach students how to use these technologies correctly and effectively, to ensure that their learning process is meaningful and efficient (Villasenor, 2023, as cited in Hao Yu, 2023). However, it is essential to balance the rights of students to independently use these tools with the requirements of academic integrity, so that students can use these tools properly and responsibly.

Among the various capabilities offered by ChatGPT, its summarization feature is particularly relevant to academic settings. This function enables students to efficiently distill lengthy or complex texts into concise summaries, thereby facilitating a clearer understanding of essential information. Such condensation of material supports critical aspects of the writing process, including the organization of ideas, identification of key points, and the development of coherent paragraph content. For EFL students, in particular, the summarization tool serves as an effective scaffold that aids comprehension and assists in producing focused, well-structured writing. Furthermore, summarization promotes higher-order cognitive skills by encouraging students to analyze, synthesize, and reframe information in their own words. Consequently, ChatGPT's summarization feature represents both a practical resource for managing information and a valuable aid in enhancing writing proficiency within the digital learning landscape.

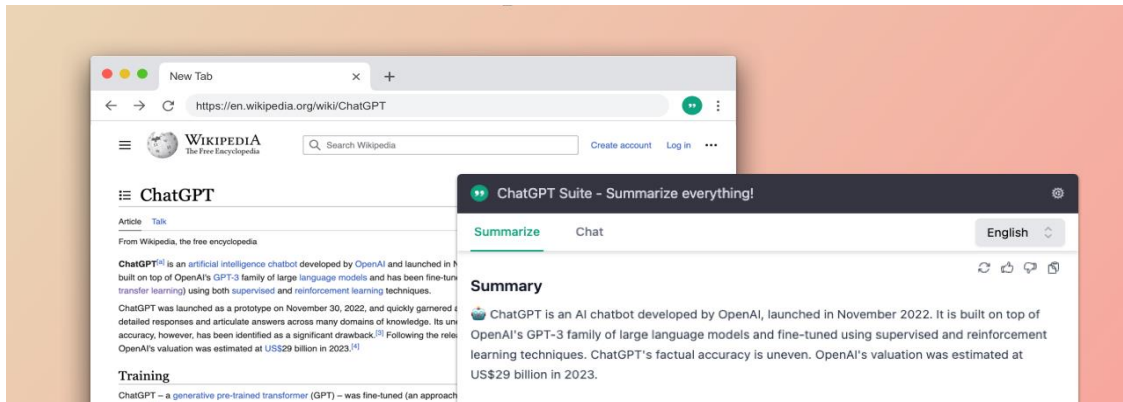


Figure1: ChatGPT summarization feature

5. Advantages and Disadvantages of Chat GPT

According to Jerry ngoma (2023) ChatGPT, an advanced AI-powered chat bot system, offers a range of benefits and challenges.

Advantages:

1. **24/7 Availability:** ChatGPT provides round-the-clock customer support, enhancing user experience and ensuring inquiries are addressed promptly.
2. **Efficiency:** It automates repetitive tasks, such as answering frequently asked questions, reducing workload and human error.
3. **Scalability:** ChatGPT can handle numerous queries simultaneously, making it ideal for businesses with fluctuating workloads

4. **Cost-Effective:** It reduces the need for hiring and training additional staff, resulting in cost savings.
5. **Multilingual Support:** ChatGPT can communicate in multiple languages, broadening its reach to a global audience

Disadvantages:

1. **Lack of Emotional Intelligence:** ChatGPT lacks emotional understanding, making it less effective in handling emotionally charged or complex situations.
2. **Inaccuracy:** It may provide incorrect information, especially when dealing with ambiguous or unfamiliar queries.
3. **Over-Reliance:** Excessive reliance on ChatGPT can lead to reduced human interaction, impacting relationships and customer satisfaction.
4. **Privacy Concerns:** Handling sensitive data raises privacy and security concerns, requiring robust data protection measures.
5. **Initial Setup Complexity:** Implementing ChatGPT involves substantial setup and training, which can be time-consuming and costly.

Conclusion

This chapter has explored the basic ideas behind Artificial Intelligence (AI) as a modern learning strategy designed to meet the needs of 21st-century students. AI-driven education seeks to build higher-order thinking skills and promote mastery learning. A key part of this exploration has been looking at ChatGPT, a tool focused on helping and improving students' paragraph writing. ChatGPT allows users to find errors, understand corrections, and potentially speed up the revision process. Also, it can help students improve their grammar and learn independently. This chapter has thus laid the foundation for understanding AI in education, defining its role, and thinking about both its potential benefits and drawbacks.

Chapter two: paragraph writing

Chapter 02: Paragraph writing performance

Introduction

1. Definition of Writing
2. Types of Writing
 - 2.1. Narrative Writing
 - 2.2. Descriptive Writing
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 - 3.1. pre-writing
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Conclusion

Introduction

Writing holds a central place in the process of learning English as a Foreign Language (EFL), serving as both a practical communication tool and a means of reinforcing language skills. Among the various forms of writing, paragraph writing is a fundamental component, acting as a building block for more advanced writing tasks. In the EFL context, paragraph writing is especially important, as it requires students to develop and organize their ideas clearly, use appropriate language structures, and maintain coherence and unity within a limited scope.

Mastering paragraph writing presents challenges for EFL students. These challenges stem from the need to apply grammatical accuracy, logical organization, topic development, and cohesion all within a short text. Despite its brevity, paragraph writing demands a high level of focus and skill, making it a useful indicator of a student's overall writing ability. Understanding how students perform in paragraph writing can provide valuable insights into their broader language development, as well as inform teaching strategies aimed at improving their written communication.

1. Definition of writing

According to Nunan (1989) “writing is an extremely complex cognitive activity in which the writer is required to demonstrate communication by means of conventionally visible marks”. (as cited in Saada & Bouzelifa, 2020, p. 7).

Nunan (2003) states that “writing is the process of thinking to invent ideas, thinking about how to express into good writing, and arranging the ideas into statement and paragraph clearly” .(as cited in Basonggo, Said, & Dewi, 2016, p. 1). It plays a major role in expressing one’s ideas, thoughts, opinions, and attitudes.

Klein (1985, as cited in Sahril, Saragih, & Stephano, 2022, p. 101) defined writing as “the ability to put pen and paper to express ideas through symbols, this way, representations on the paper will have meaning and content that could be communicated to other people by the writer”.

Nystrand (1998, as cited in Ghosh, Gayen, & Sen, 2021, p. 26) states that “writing is a matter of elaborating text in accordance with what the writer can reasonably assume which the readers know and expect. And the process of reading is a matter of predicting text in accordance with the reader assumes about the writer’s purpose”. Zamel (1983, as cited in Ghosh, Gayen, & Sen, 2021, p. 26) “a pioneer in ESL writing research, considered writing process as a “non-linear, exploratory, and generative process whereby writers discover and reformulate their ideas as they attempt to approximate meaning”.

Harmer (2004) said that “writing is a way to produce language and express idea, feeling and opinion”(as cited in Rabehi & Hadfi, 2024, p. 10), where Abbas (as cited in Rabehi & Hadfi, 2024, p. 10), stated that “writing skills is the ability to express ideas, opinions, and feelings to other parties through written language”. In addition, Tarigan(2008) defines that “writing skills are one of the productive and expressive language skills used to communicate indirectly and not

in a manner face to face with other parties” (as cited in Rabehi & Hadfi, 2024, p. 10). Also, Troyka (as cited in Lauri, 2011, as cited in Rabehi & Hadfi, 2024, p. 10) states that “writing is a way of communicating a message to a reader for a purpose”.

Furthermore, according to Suparno and Yunus (2008) stated that “writing is delivering messages (communication) using written language as tool”. (as cited in Rabehi & Hadfi, 2024, p. 10).

2. Types of writing

Writing can take various forms, each serving different purposes and requiring unique skills. According to Imed Bouchrika(2025), writing has four main types which are as follows:

2.1. Narrative Writing

Narrative writing is basically storytelling in written form with the intent of motivating, educating, or simply entertaining the audience. Regardless of whether the story being told is real or fictional, narrative writing can be one of the easiest for the readers and the most difficult for the writers. That is because readers will be prodded by their imagination and understanding in order to get the narrative. Writers, on the other hand, will have to pen it in a way that will bring readers to the world in their story while keeping them engaged and captivated.

In order to convey a story, five basic elements need to be present: plot, character, theme, conflict, and setting. Stories also need a beginning, interval, and an ending, which can be either open or definite. Definite endings clearly conclude the story while open ending gives room for interpretation and can either be left to the imagination of readers or resolved in a sequel.

Another important element of narrative writing is the point of view of the person telling the story. This could be a character in the story whose knowledge of the plot is limited to his/her part

in the story. Authors can also use the perspective of a narrator who carries the story through an all-seeing eye that knows the motives, thoughts, and reactions of characters.

Narrative writing is a highly diverse genre that includes adventure, fantasy, mystery, tragedy, comedy, fairy tale, myth, drama, fable, legend, science fiction, love story, biography, autobiography, historical account, epic poems, memoirs, jokes, novels, anecdotes, and screenplays.

2.2. Descriptive Writing

Descriptive writing is akin to painting a picture with words that attempt to provide readers with a firsthand and detailed impression of places, characters, events, etc. Apart from describing what something looks like, the author also appeals to the other senses of the readers such as smell, hearing, and touch. As such, authors must be familiar with imagery definition as literary devices.

The use of precise language is important in descriptive writing as general adjectives, adverbs, verbs, etc. make it harder for readers to picture in their minds what is being described. Therefore, the more vivid the details being presented are, the more relatable the story is to the readers. And while authors can use descriptive words with positive or negative connotations, their intent is merely to describe something and not convince the audience of anything.

Descriptive writing is also typically injected into other types of writing because the need to describe a place or event commonly arises in most types of literature. Adjectives and adverbs are the most common elements used in descriptive writing. However, from time to time, authors also utilize literary devices. As such, writers hoping to master this writing style must also become familiar with simile and metaphor examples and other figures of speech. A lot of fictional pieces

fall under descriptive writing such as poems, prose, lyrics, and plays. However, this type of writing also appears a lot in nonfiction materials such as journals, travel diaries, and memoirs.

2.3. Persuasive Writing

Persuasive writing, as the term suggests, is a type of literature whose objective is persuading the audience in aligning their thoughts and actions with the author's own goals. The writer takes a definitive stance about something, be it pro or against, and asks his/her audience to do the same. It is basically influencing someone to take the author's side in order to have the audience believe or do something favourable to him/her.

Since the end goal is to convince someone of something, writing is typically backed by research, analysis, logical inferences, and studies. This means that even though the piece heavily contains the authors' biases and personal opinions, it still includes reasons, justifications, and arguments to exude an objective tone. With that said, however, it is equally important to appeal to the readers' emotions just as much. That is because a strong connection is not just formed through facts and figures alone but through the readers' sympathy as well. When the target audience's emotions are swayed in favour of the writer, it is easier to appeal for a call to action about the situation at hand.

The most common example of persuasive writing is the editorial section of newspapers. Others include reviews of books, places, products, movies, music, etc. Cover letters, argumentative essays, letters of complaint, letters of recommendation, and advertisements are also part of this genre.

2.4. Expository Writing

Expository writing is written in a style that explains a concept or shares information with the audience as well as provides instructions and insights regarding a particular subject. It is one of the most common types of writing and is typically present in other writing styles as well. Because it lays information to readers, it is sometimes referred to as information writing.

Unlike persuasive writing, expository style is devoid of the authors' opinions. If writing comprises facts and provides information about a subject but is written in a way that persuades the readers, it does not fall into the expository writing category. For example, an article titled "Five Reasons Why Studying Abroad is a Bad Idea" might contain factual data and statistics, but it does connote a negative stance that rather makes it a persuasive piece.

Furthermore, because it can also be used to describe things, it is sometimes confused with descriptive writing. However, there are several key differences between the two. For instance, descriptive writing is used for explaining the point of view of someone about a certain subject at a given time, while expository writing is used for explaining external processes, situations, and things. Expository style is also carried with a matter of fact, neutral tone.

Non-editorial articles in newspapers and magazines, manuals, textbooks, instructional guides, and nonfiction books are the most common examples of expository writing. Others include how-to books, cookbooks, recipes, self-help books, scientific research, educational resources, business books, technical write-ups, medical journals, research, and others.



Figure2: styles of writing

3. Stages of the writing process

According to (Wallett, 2022), the writing process can be broken down into five distinct stages. Each of these stages helps ensure you can create a piece of writing that is well thought out and that will be well received by your target audience.

3.1. Prewriting

This step involves gathering ideas and researching your topic so that you have a better understanding of what you want to communicate through your words. Parts of the prewriting stage include:

3.1.1. Topic and Audience Selection

Before you sit down to put your words down on the page, you need to know two key things: who your target audience is and what problem you are helping them solve (i.e., your main

topic.) When it comes to nonfiction, you want to focus almost exclusively on your readers and hardly ever on yourself. You are not writing to share what you know; you are using your writing to build a direct path between a problem your audience is experiencing and your unique solution. Once you have both your target audience and your one-of-a-kind solution nailed down, it is time to turn on your flow of ideas.

3.1.2. Brainstorming

Now that you know who you are writing for and what your main topic is, it is time to create a mind map of the different components of your book.

In other words, it is time to brainstorm the content that will make up your book, from your initial thesis through the root cause of your audience's problem to the genesis of your solution and its implementation and the changes to be expected by your readers.

At this stage, you just need to bring to the table everything you can think of that might be applicable to your book, whether it will end up on your manuscript or on the cutting floor.

3.1.3. Outlining

Now, you need to take the output of your brainstorming and segment it into a logical flow, where you guide your readers from problem to solution in a way that makes the most sense.

Your goal with the outlining stage is not to organize your content for organization's sake but to structure it from the point of view of your target audience. Your outline needs to make your book easy to read and easy for your audience to benefit from. Obscure or confusing outlines will lead to reader attrition.

3.2. Drafting

Armed with a fully fleshed out outline, it's time to put pen to paper and begin the actual writing. To get moving forward with the drafting process, use each outline step as writing prompt. And since you're writing nonfiction, you don't even need to create your first draft in the exact sequence dictated by your outline. In fact, you can begin writing from any outline step that inspires you. There's nothing wrong with starting on chapter 5, then working a bit on chapter 2 and going back to chapter 5 later on. At the drafting stage, you need total freedom and not being bound by too much structure that may limit your creative flow.

In short, the first draft is meant to be rough this is your initial blueprint, so don't expect to strive for perfection here. Just write sentences without worrying about grammar, spelling and punctuation.

3.3. Revising

Once you have a completed first draft (congrats, you have just achieved the hardest part of the writing process!), it is time to begin revising your work.

As opposed to the drafting process, where you need to be unbound by structure, the goal of the revision stage is to make sure that your writing is logical and flows well. This is the part where you begin to review your writing for any problems or inconsistencies.

Now, do not focus on grammar errors and typos yet. Your initial revision passes need to focus instead on the logical flow of information. For example, at this stage you may decide to rearrange chapters or sections within a chapter. You may also find yourself rewriting a lot of sentences or paragraphs to make them more cohesive. While this may at times feel like the most

tedious step in the writing process, it is critical because it helps ensure that your writing logic will make sense to your readers. This is one of the most time-consuming aspects of nonfiction writing, so prepare yourself mentally for the long haul and don't expect this stage to be over quickly.

3.4. Editing

Once your revision stage is over, you will have your first completed manuscript. But the work is not done yet! At this point you will need to pass on your manuscript to a professional nonfiction editor. These individuals are trained wordsmiths (true craftsmen of the written word) who will take a fresh look at your entire manuscript with the goal of taking your diamond in the rough and making it shine.

Editing is the process of refining your writing so that it meets the criteria expected of your genre by the book industry, including adherence to established rules of style (e.g., those found in the Chicago Manual of Style) as well as any specific requirements from your publisher.

If you are self-publishing, you still need to hire a professional nonfiction editor because you will be competing in the marketplace against traditionally published books that will be subjected to the same rigors. The final draft in the editing stage involves fact-checking, where the editor (or, in some cases, a dedicated proofreader) will make sure that all facts in your book are accurate and verified with credible third-party sources. This is a very important expense: an unchecked book, if incorrect, could severely damage your credibility as a subject-matter expert.

3.5. Publishing

This is the final step of the writing process, where you are ready to share your nonfiction book with the world. Before you do, however, you will need to ensure that you have dotted all the legal and logistical it is to make sure that your book does not encounter roadblocks along the publishing journey. For example, you need to ensure that you have obtained written permission from the copyright owners of any text (beyond fair use rules) or images contained in your book that you did not create yourself. You will also need to obtain an ISBN and matching barcode to make your book available through traditional channels of distribution. Finally, you will need to create a book cover that has all the required marketing elements expected from works of nonfiction by the book trade. If you are self publishing, this is another area you want to leave to the hands of professionals do not attempt to create your own book cover unless you are a trained graphic designer, because chances are it will look amateurish compared to professionally-produced books.

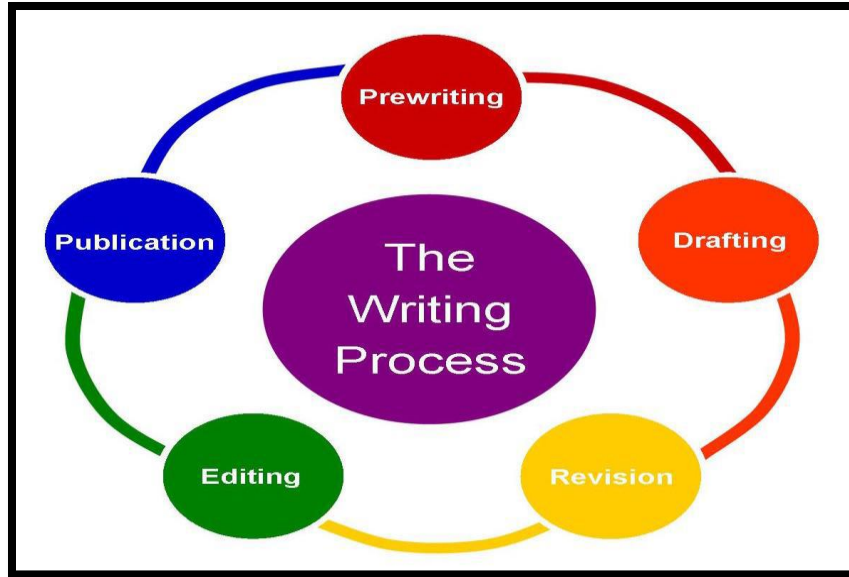


Figure3: the writing process

4. Importance of Writing

According to Hyland (2003), “Writing is one of the main ways that we create a coherent social reality through engaging with others” (as cited in Rabehi & Hadfi, 2024, p.11). In addition, Chappell (as cited in Klimova, 2013), assumed that writing is essential. It brings about a lot of advantages (Chappell, 2011)

- Express one’s personality
- Foster communication
- Develop thinking skills
- Make logical and persuasive arguments
- Give a person a chance to later reflect on his/her ideas and re-evaluate them

- Provide and receive feedback and prepare for school and employment.

Writing is important because it's used extensively in higher education and in the workplace. If students do not know how to express themselves in writing, they won't be able to communicate well with professors, employers, peers, or just about anyone else. Much of professional communication is done in writing: proposals, memos, reports, Applications, preliminary interviews, e-mails, and more are part of the daily life of a college student or successful graduate. Writing has a unique position in language teaching since its acquisition involves a practice and knowledge of the other three language skills, such as listening, reading and speaking. Furthermore, it involves the mastery of other abilities, such as meta-cognitive abilities. Students must have a goal for their work, carefully prepare it, consider its layout and logical structure, and then edit it. They must employ cognitive abilities when writing; they must evaluate their sources and then combine them into a brief composition. Allowing students to write as freely as possible from the start of the learning process and encouraging a sense of creativity in them is one of the finest strategies to get them interested in writing (Walsh, as cited in Klimova, 2013). Maley(as cited in Klimova, 2013), highlights the following advantages of creative writing: • it promotes language development at all levels, including discourse, phonology, grammar, and vocabulary; it challenges students to use language in novel and challenging ways as they try to convey deeply personal meanings. In addition to requiring a willingness to experiment with language, it focuses more on the right side of the brain, emphasizing emotions, bodily sensations, intuition, and musicality. It also gives students flexibility who are typically at a disadvantage in the traditional formal education processes. Students that engage in creative writing tend to experience a significant boost in their self-esteem and confidence. Additionally, students frequently find out facts about the language on their own,

and about themselves too, thus promoting personal as well as linguistic growth. Inevitably, these gains are reflected in a corresponding growth in positive motivation.

Writing is a vital skill in language learning, serving as a tool for communication, academic achievement, and personal development. It enables students to organize and express their thoughts clearly and logically. Through writing, students engage in critical thinking and develop greater control over language structures. It also supports the acquisition of vocabulary and grammar in meaningful contexts. In academic settings, writing is essential for demonstrating knowledge, constructing arguments, and participating in scholarly discourse. Furthermore, strong writing skills enhance employability and professional communication. As such, writing plays a central role in both educational and real-world contexts.

5. Paragraph writing in EFL context

According to Nguyen and Nguyen (2025) “Writing is an important productive skill that is often pedagogically built into many language programs and materials for English as a foreign language(EFL) learners” (p.49). According to (Behizadeh & Jr, 2011, as cited in Nguyen & Nguyen, 2025, p. 190) it is “considered a fundamental aspect of communicative competence and literacy in modern societies”. Yet, it is one of the most challenging skills for EFL students, because “it requires a higher level of productive language control than the other skills” (Celce-Murcia & Olshtain, 2000, as cited in Nguyen & Nguyen, 2025, p. 161). Indeed, “writing is a complex process of putting our intentions and thoughts into a written text that requires the use of appropriate language resources to express intended meanings” (González, 2017, as cited in Nguyen & Nguyen, 2025). As such, it could be viewed as a test of memory, language and thinking abilities involved for idea formulation and text production (Kellogg, 2002, as cited in

Nguyen & Nguyen, 2025). It also necessitates attention to details such as connecting ideas within and across sentences or paragraphs to achieve cohesion and coherence as well as displaying correct orthographic forms. Students should also know the genre of the text in order to communicate their written message effectively to the intended reader (Hyland, 2003, as cited in Nguyen & Nguyen, 2025). Given all these cognitive processes, writing in a foreign language could be arguably challenging for many students, especially when the writing genre is unfamiliar with them (Hyland, 2024, as cited in Nguyen & Nguyen, 2025).

5.1. Definition of Paragraph

Ellis (2022) explains that, a paragraph is a unit of writing that consists of one or more sentences, all of which relate to the same topic. Paragraphs are essential for organizing long pieces of writing such as novels, papers, or even emails. Each paragraph should focus on a single topic.

5.2. Paragraph structure

According to Ellis (2022), a paragraph is an individual segment of writing that discusses a central idea, typically with more than one sentence. Here we focus mainly on paragraph structure, but feel free to read our ultimate guide to paragraphs for more of the basics. Like other forms of writing, paragraphs follow a standard three-part structure with a beginning, middle, and end. These parts are:

5.2.1. Topic sentences, also known as “paragraph leaders,” introduce the main idea that the paragraph is about. They shouldn’t reveal too much on their own, but rather prepare the reader for the rest of the paragraph by stating clearly what topic will be discussed.

5.2.2. The development and support sentences act as the body of the paragraph. Development sentences elaborate and explain the idea with details too specific for the topic sentence, while support sentences provide evidence, opinions, or other statements that back up or confirm the paragraph's main idea.

5.2.3. The conclusion wraps up the idea, sometimes summarizing what's been presented or transitioning to the next paragraph. The content of the conclusion depends on the type of paragraph, and it's often acceptable to end a paragraph with a final piece of support that concludes the thought instead of a summary.

5.3. Paragraph Cohesion and Coherence

Ellis (2022) stated that Essays are comprised of paragraphs that support the thesis statement of that essay. Cohesive paragraphs flow easily from sentence to sentence, while coherent paragraphs clearly develop one topic in a logical manner. A paragraph can be cohesive without being coherent and vice versa. In other words, sentences can move easily from one to the next in one paragraph but make no sense as a whole, while another paragraph may perfectly develop its topic while being choppy and difficult to read.

5.3.1. How to achieve cohesion(the structural glue that binds sentences together)

- a) Start new sentences in your paragraphs with information discussed in the previous sentences.

This allows the reader to easily contextualize familiar information in relation to new information.

- b) Employ transition signals when needed. Transition signals are like highway signs that direct the reader to quickly understand the relationship between adjoining sentences. When your writing changes direction, you should alert the reader.

5.3.2. How to achieve coherence(a paragraph acting as a unit of meaning)

- a) Start your paragraph with a clear topic sentence that is developed throughout. If your topic sentence lacks clarity, your paragraph will lack focus.
- b) Tie the subjects of the supporting sentences to the theme of the topic sentence. If the subjects are not all related to the topic, you are likely straying from the focus of the paragraph, which will then lack unity
- c) Repeat keywords or synonyms from the topic sentence throughout the paragraph.
- d) Use consistent pronouns and reference correctly.
- e) Follow a logical progression of ideas in each paragraph.

6. Definition of summarization

According to Aiswarya Ittianath summarization is a process of automatically condensing and re-writing a large chunk of text to create a small, crisp summary. A summarization system should give the reader most of the information present in the original document while also ensuring that no information has been lost during condensation.

7. Process of summarizing

Aiswarya Ittianath(n.d) stated that summarizing is the process of converting a larger text into its shorter version by retaining the main ideas from the larger text in the shorter version. This

chapter of summarizing is an important one. Students learn how to summarize a big text into a smaller one by understanding the following steps:

- Read the text to be summarized carefully to understand it. Keep in mind the purpose of the text by reviewing specific questions such as:
 - a. What was the author's purpose for writing this text?
 - b. What is the student's purpose for summarizing it?
 - c. Is the student summarizing to support his/her points?
 - d. Is the student trying to criticize the text through summarizing before collecting the main ideas?
- Collect the relevant information that matches your purpose in order to be effective in summarizing.
- Try to extract the main ideas from the long text, which seems relevant.
 - a. Main ideas can be found in topic sentences.
 - b. Try to distinguish between the main points and the subsidiary points.
 - c. Try to delete all the unimportant sentences that are not necessary.
 - d. Try to find synonyms of some words but do not change the meaning of the sentence.
- The structure of the text must get changed after collecting the main ideas from the larger text.
 - a. Try to identify the relationships that exist between words and sentences. You have to express these relationships in a different way while summarizing.

- b. Try to change the grammar of the text by changing nouns, verbs, adjectives, etc.
You can also break long sentences into shorter ones or combine short sentences into one long sentence.
 - c. Try to make the text simple by reducing complex sentences into simple sentences, simple sentences to phrases, and phrases to words.
- Now rewrite the main ideas and information incomplete meaningful sentences. Combine the notes that you made earlier to create complete sentences. Use conjunctions like your work.
- a. Ensure the purpose of the text is clear.
 - b. Ensure that the meaning of the long text and small summarized text is similar.
 - c. Ensure that style of writing is unique.

8. Importance of Summarizing

Aiswarya Ittianath(n.d) highlighted that summarizing is of great importance for students to prosper in their careers, as it improves their vocabulary and grammatical skills. Students who can adequately summarize a long text are good at focusing and extracting the main ideas.

- It acts as a great help for students to learn how to determine essential ideas and find out different details that can support those ideas and make them more useful.
- It helps the students to improve their focusing skills so that they can focus on phrases and keywords from the assigned long text. They focus on parts that are worth noting or remembering.

- A student learns how to convert a large text into a small text. The short text has to comprise all the main points that are in the long text for a proper and concise understanding

Conclusion

In conclusion, chapter two offered an in-depth examination of the development of writing skills within the EFL classroom. It thoroughly explored the nature of writing, its fundamental aspects, common types, and the various stages involved in the writing process. Additionally, the chapter highlighted the importance of teaching writing and provided practical tips and strategies aimed at improving EFL students' writing abilities. The chapter also delved into paragraph writing in EFL contexts, emphasizing key components such as paragraph structure, coherence, and cohesion, which are essential for clarity and logical flow. Furthermore, it addressed the concept of summarization by defining it, outlining its process, and underscoring its importance as a skill that enhances comprehension and concise expression in academic writing.

Chapter three:

discussion and

interpretation of the

findings

Chapter three: Discussion and interpretation of the findings

Introduction

1. Research Design

2. Population and Sample

3. Data Collection

3.1. Students' Questionnaire

3.1.1. Description of Students' Questionnaire

3.1.2 Administration of the Questionnaire

3.1.3 Analysis of Students' Questionnaire

4. Discussions and Interpretations of the Main Findings

Conclusion

Introduction:

This chapter presents the practical part of the study, focusing specifically on how Chat GPT influences EFL students' paragraph writing performance. It outlines the research methodology employed to investigate students' paragraph development, including the research design, the instrument used for data collection, the participants involved in the study, and the structure of the student questionnaire. The chapter presents and analyzes the data collected, with particular attention to how Chat GPT supports students in constructing well-organized, coherent, and cohesive paragraphs. The analysis aims to evaluate the study's hypotheses and provide evidence-based conclusions regarding the effectiveness of Chat GPT as a tool for enhancing paragraph writing skills in the EFL classroom.

1. Research design

This study seeks to examine the effect of Chat GPT on the paragraph writing performance of EFL students and to explore the potential advantages of incorporating this AI tool into writing instruction. To address the research objectives effectively, a mixed-method approach was employed, combining both quantitative and qualitative methods. This approach was selected to gain a more comprehensive and in-depth understanding of how Chat GPT influences student writing. Creswell (2014, as cited in Labidi, 2022, p. 34) states that "This mixing or blending of data, it can be argued, provides a stronger understanding of the problem or question than either by itself". By integrating both numerical data and narrative insights, this methodological approach enhances the credibility and validity of the research findings while minimizing potential biases. It also allows for a richer exploration of how AI tools like Chat GPT can support the development of writing skills in the EFL context.

2. Population and sample

The target population for this study consisted of Master one students at the University of Mohammed Khider Biskra. This group was randomly selected, as students at this academic level are required to produce full articles and future master's thesis a task that demonstrates both their theoretical understanding of artificial intelligence and their competence in academic writing. This stage represents a critical point at which students are expected to apply the academic writing skills they have developed throughout their studies. To collect relevant data, master one (M1) participants will be randomly assigned take part in the questionnaire as a Random Assignment technique was employed, allowing for the exploration of diverse perspectives.

3. Data collection

To effectively address the research objectives, test the stated hypotheses, and provide answers to the formulated research questions, a single data collection instrument was utilized was a questionnaire. This tool was administered to first-year master's students to gather their perspectives on academic writing (AW) and their level of familiarity with Chat GPT, an AI-based language model. The questionnaire was carefully designed to explore various dimensions of students' engagement with academic writing, including their practices, challenges, and the extent to which they integrate artificial intelligence tools like Chat GPT into their writing process. Moreover, it aimed to capture students' perceptions of the advantages and limitations of using such tools, as well as their attitudes toward the ethical and academic implications of relying on AI in educational contexts. By focusing on these aspects, the questionnaire provided valuable insights into how emerging technologies are influencing students' writing habits and academic development.

4. Students' Questionnaire

This section presents the students' questionnaire, which serves as a key instrument for data collection in this study. It was specifically designed for Master One students in English as a Foreign Language (EFL), with a specialization in Applied Linguistics, at the University of Mohamed Khider, Biskra. The questionnaire begins by outlining the design and administration of the questionnaire, followed by a detailed analysis of the students' responses. To enhance clarity and facilitate interpretation, the results are accompanied by relevant graphs. The primary aim of this questionnaire is to investigate students' attitudes toward paragraph writing, identify the common difficulties they face in this area, and explore their perceptions of Chat GPT as a digital writing support tool.

4.1. Description of Students' Questionnaire

The students' questionnaire is structured into five main sections, each designed to gather specific data related to the objectives of this study.

The first section (Demographic Information): collects basic background data about the participants, including their age, gender, and academic standing, which helps contextualize their responses. First, students were asked about their age, with responses ranging from 21 to 31 years old, which reflects the typical age group of Master One students in the field of Applied Linguistics. Furthermore, the second question focused on gender, aiming to understand the gender distribution among the respondents. In addition, students were asked how long they have been studying English as a Foreign Language (EFL). The answers ranged from 5 to 11 years, indicating varying levels of exposure to the language. Finally, the fourth question addressed the

students' self-reported English proficiency level, with options ranging from Beginner to Advanced. This provides insight into their confidence and competence in using the language.

The second section (Chat GPT Usage): aims to explore students' familiarity with Chat GPT in relation to their writing practices. First, students were asked whether they have ever used Chat GPT to improve their writing skills. This question helps determine their initial exposure and engagement with the tool. Furthermore, the second question focused on the frequency of Chat GPT usage for writing tasks. This allows insight into how regularly students rely on the platform in their academic routines. In addition, the third question explored which specific features of Chat GPT students tend to use most often when working on writing tasks. They were allowed to select more than one option, including, grammar and spelling correction, rewriting sentences, generating ideas, summarizing content, providing vocabulary suggestions, structuring paragraphs, answering questions related to writing. These features reflect the diverse functionalities of Chat GPT that can support various aspects of academic writing.

The third section (The Impact of Chat GPT on Paragraph Writing Performance): this section is designed to assess the perceived impact of Chat GPT on students' paragraph writing abilities. First, students were asked whether using Chat GPT has helped them improve their ability to write coherent and well-structured paragraphs. Responses were measured on a Likert scale ranging from Strongly Agree to Strongly Disagree, providing insight into their overall impressions of the tool's effectiveness in supporting paragraph construction. Moreover, students were invited to evaluate the extent to which Chat GPT has enhanced specific aspects of their writing. They were asked to rate, on a scale from 1 to 5, the degree of improvement they experienced in the following areas: organization of ideas, vocabulary usage, sentence structure, clarity of writing, and overall writing fluency. In addition, students were asked whether they

believe that using Chat GPT has increased their confidence in writing paragraphs in English. This question seeks to understand the psychological and motivational effects of using the tool in academic writing contexts. These items aim to offer a detailed view of how Chat GPT influences key components of academic writing performance.

The fourth section (Focus on Chat GPT's Summarizing Feature): This section aims to explore students' use and attitudes toward Chat GPT's summarizing feature, particularly in relation to its role in enhancing paragraph writing. First, students were asked whether they have used Chat GPT's summarizing feature to support their paragraph writing, with responses limited to Yes or No to determine general familiarity and usage. Furthermore, they were asked how often they rely on this feature to clarify information for their writing tasks, offering insight into the frequency and perceived usefulness of the tool in academic settings.

In addition, students were invited to reflect on the accuracy of Chat GPT's summaries, specifically whether the tool effectively captures the key points of a given text. This helps assess the reliability of the feature from the user's perspective. Moreover, the questionnaire explored the confidence-building aspect of the tool by asking students if they feel more confident in summarizing information after using Chat GPT. Following that, students were asked whether they believe Chat GPT helps them better understand texts and integrate key ideas more effectively into their writing an important step in developing higher-level academic writing skills. Next, participants identified the types of writing tasks in which they found the summarizing feature most useful. These included: summarizing research articles, condensing long texts for clarity, generating topic sentences, crafting conclusions for paragraphs, and breaking down complex ideas into simpler forms.

Additionally, students were asked to evaluate their satisfaction with the language style and tone of the summaries generated by Chat GPT, shedding light on how well the tool aligns with academic standards. Finally, they were asked whether they would recommend using Chat GPT to other EFL students as a means of improving writing performance, reflecting their overall endorsement of the tool based on personal experience.

The fifth section (Overall Experience): This final section of the questionnaire aims to gather students' overall impressions, perceived benefits, and challenges encountered while using Chat GPT for paragraph writing. First, students were asked to identify the main benefits they have experienced when using Chat GPT to assist with paragraph writing. The suggested advantages included improved clarity and organization, better grammar and vocabulary usage, a more efficient writing process, enhanced summarizing skills, and increased confidence in writing.

Moreover, participants were given the opportunity to specify any additional benefits not listed, offering deeper insight into their individual experiences with the tool. In addition, students were invited to describe any challenges or limitations they have faced when using Chat GPT, particularly in summarizing content or generating ideas for paragraphs. Furthermore, they were asked to explain how they managed or overcame these difficulties, which helps reveal the extent of their critical engagement with the tool and the strategies they employed to make the most of it. These questions aim to provide a well-rounded understanding of students' experiences with Chat GPT, highlighting both the strengths and potential areas for improvement in its application to academic writing tasks.

4.2. Administration of the Questionnaire

The final version of the questionnaire was developed using Google Forms and distributed online via email to the target sample on April 21st, 2025. Administering the questionnaire online was the most feasible approach, as the teachers were unable to allocate time during their sessions for its distribution, and the students were occupied with test and exam preparations. Therefore, the online format was the most suitable method for conducting the investigation.

4.3. Analysis of Students' Questionnaire

The finalized questionnaire consisted of twenty (20) questions designed to gather both quantitative and qualitative data. The structure included ten (10) checkbox questions, four (4) multiple-choice questions, four (4) linear scale items, one (1) rating question, and one (1) open-ended paragraph response. To gain deeper insight into students' perspectives, respondents were also asked to briefly explain their answers where applicable, helping to identify common themes and patterns. The questionnaire was carefully validated and piloted before distribution to ensure clarity and relevance.

Section one: Demographic information

Item 1: What is your age?

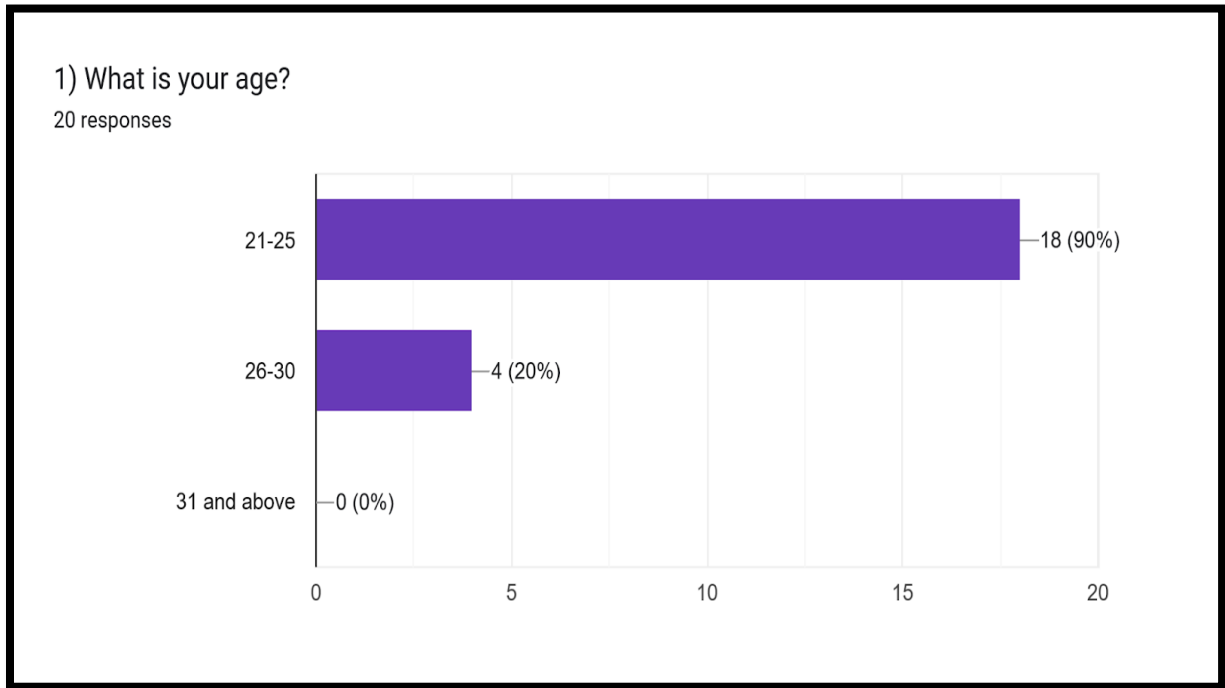


Figure 01: Age of students

Figure 1 Figure 1 displays the age distribution of the respondents. The majority (90%) fall within the 21–25 age range, while 10% are between 26–30 years old. No participants reported being 31 or older. These results indicate that the sample is predominantly composed of younger individuals, suggesting a concentration of respondents likely in early academic or professional stages.

Item 2: What is your gender?

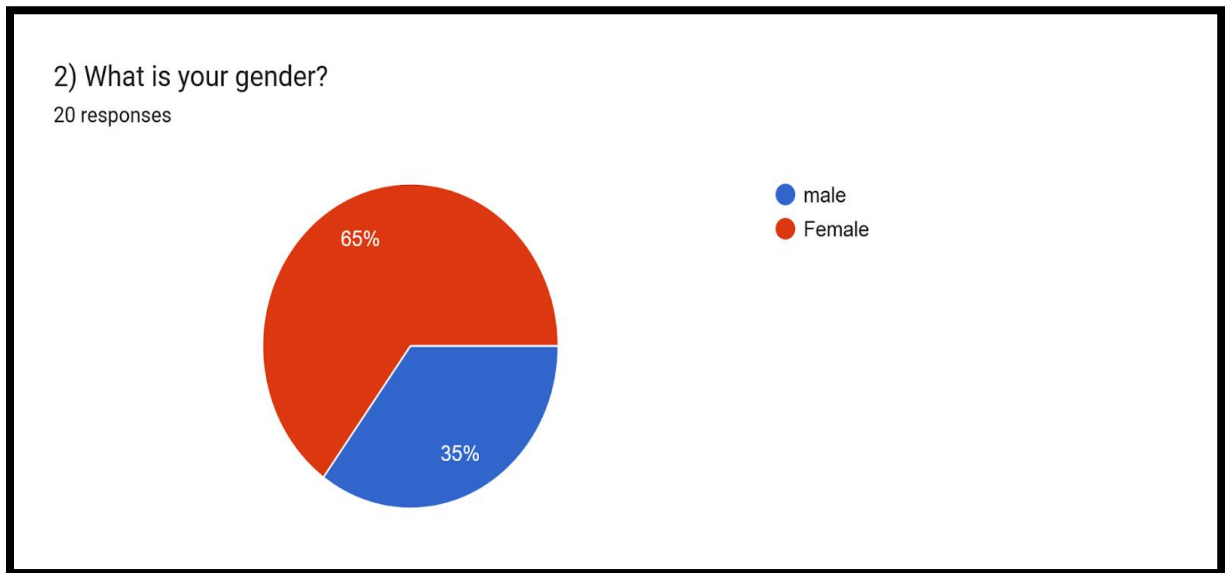


Figure 2: Gender of students

Figure 2 presents the gender distribution of the respondents. Female participants constitute 65% of the sample, while male participants account for 35%. This indicates a higher representation of females in the survey, with nearly two-thirds of the responses coming from women. The data reflects a gender imbalance in the sample that may shape the overall findings.

Item 3: How long have you been studying English as a foreign language (EFL)?

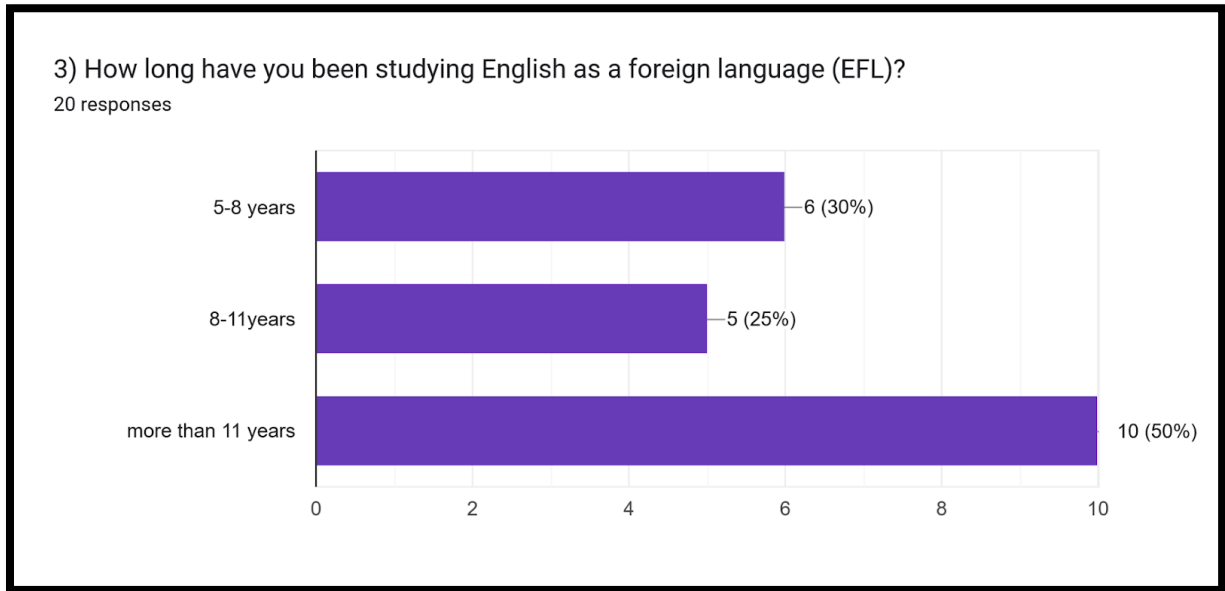


Figure 3: Duration of English Language Study among students

Figure 3 displays the respondents' duration of English language study. A majority (50%) reported studying English for more than 11 years, followed by 25% who have studied for 8–11 years, and 30% for 5–8 years. These findings indicate that most participants have long-term exposure to English as a foreign language, suggesting a generally high level of familiarity and potential proficiency.

Item 4: What is your current proficiency level in English?

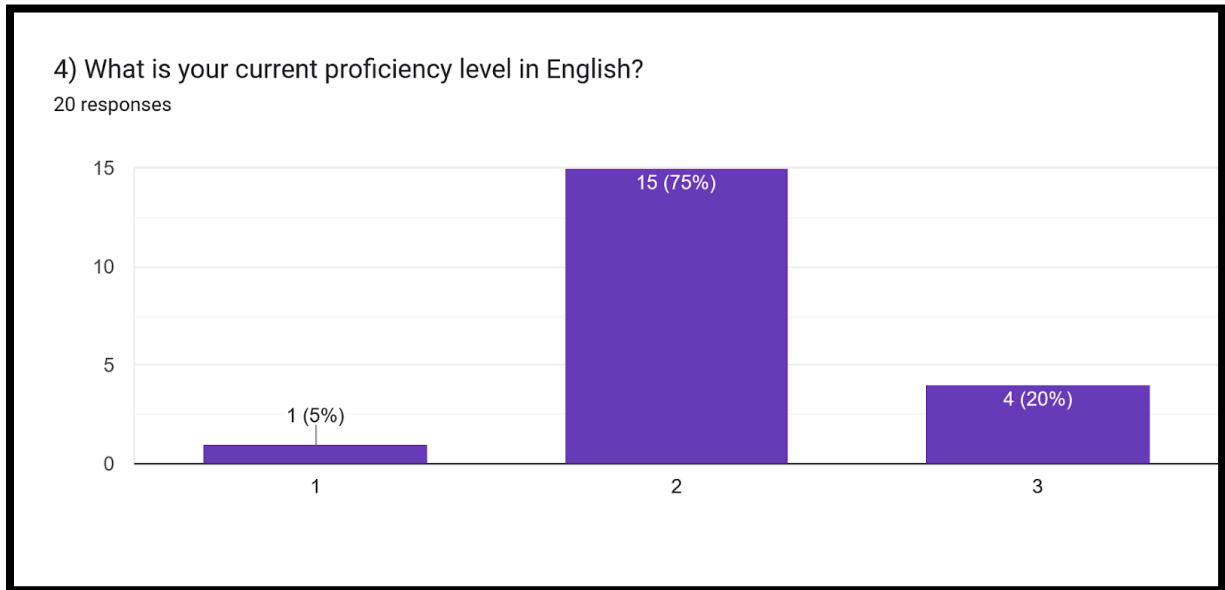


Figure 04: Student's proficiency

Figure 4 presents respondents' self-assessed English proficiency levels. Among the 20 participants, 75% rated themselves at level 2, indicating a basic to intermediate level of proficiency. Additionally, 20% reported level 3 proficiency, suggesting a more advanced command of the language, while only 5% assessed themselves at level 1, reflecting minimal proficiency. These results suggest that the majority possess foundational English skills, with a smaller group demonstrating higher confidence in their language abilities.

Section two: Usage of Chat GPT

Item 5: Have you ever used Chat GPT for improving your writing skills?

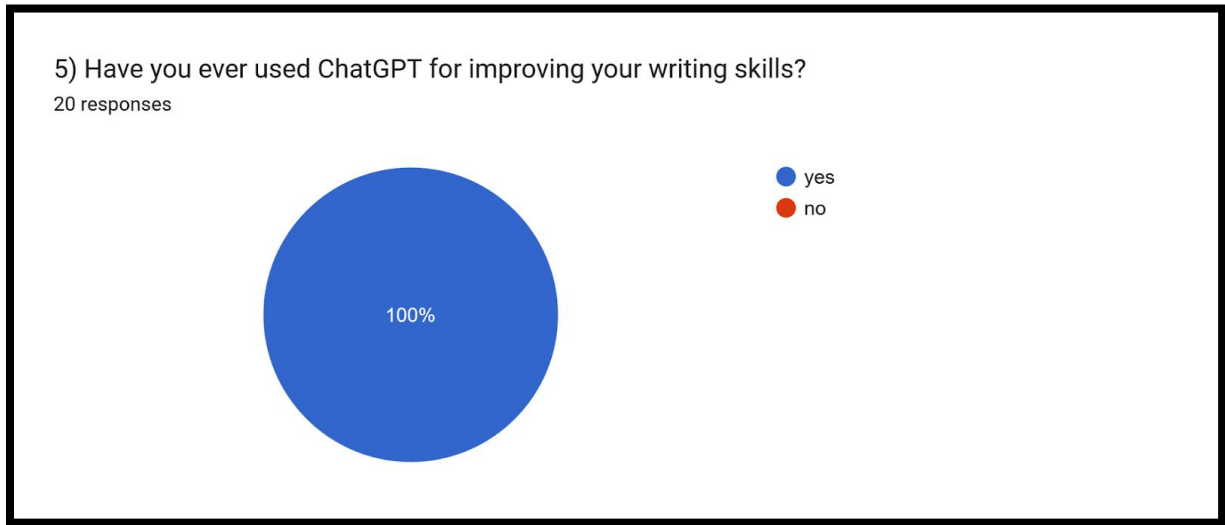


Figure 05: Chat GPT usage

Figure 5 shows that 100% of the respondents reported using ChatGPT to improve their writing skills. This unanimous response indicates full adoption of the tool among participants. The result reflects a shared perception of ChatGPT's usefulness in enhancing various aspects of academic writing, such as language accuracy, clarity, and organization.

Item 6: How often do you use Chat GPT to help with your writing tasks?

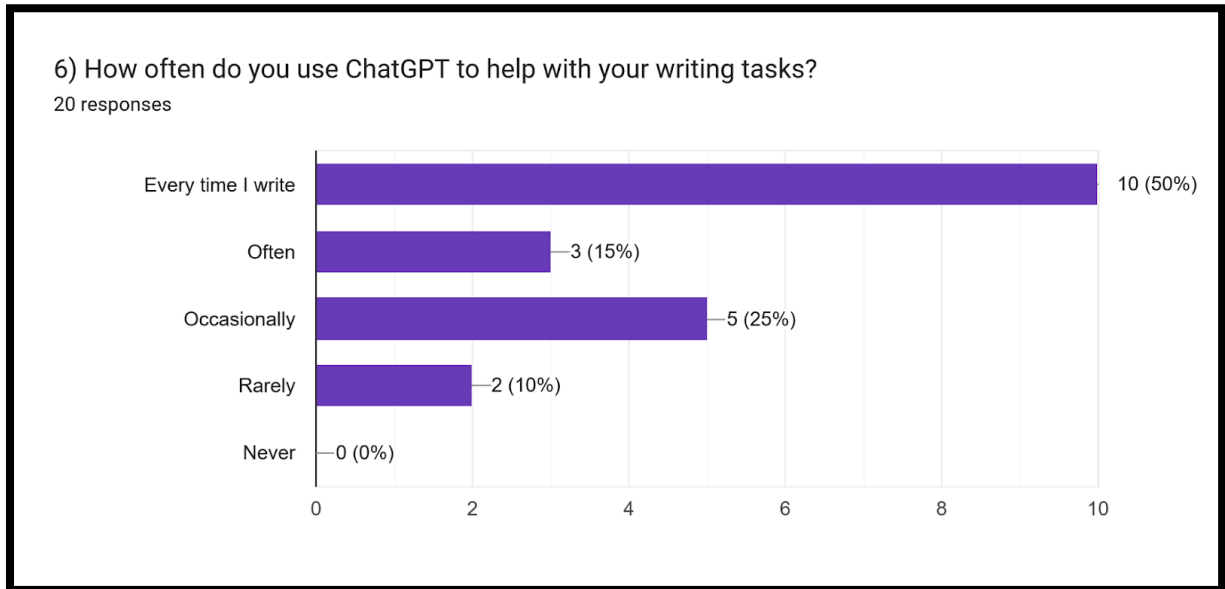


Figure 06: Chat GPT Usage Frequency

Figure 6 illustrates the frequency of ChatGPT usage among students for writing tasks. Half of the respondents (50%) reported using ChatGPT every time they write, indicating a high level of reliance on the tool. Additionally, 15% use it often, 25% occasionally, and 10% rarely. No respondents indicated that they never use it. These results suggest a widespread and varying degree of integration of ChatGPT in students' writing practices, with the majority incorporating it regularly into their academic work.

Item 07: What specific features of Chat GPT do you usually use for writing tasks? (You may choose more than one.)

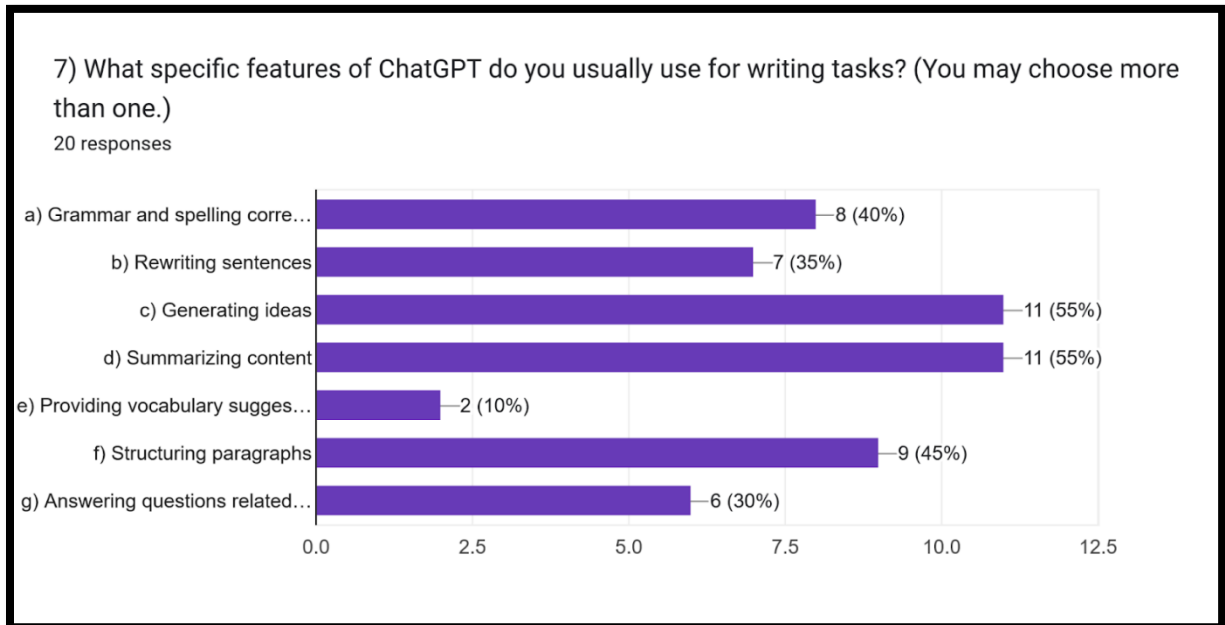


Figure 07: The usage of Chat GPT features for writing tasks

Figure 7 details the specific ChatGPT features utilized by students during writing tasks. The most commonly used features are idea generation and content summarization, each selected by 55% of respondents. Structuring paragraphs follows at 45%, while grammar and spelling correction is used by 40%, and sentence rewriting by 35%. Less frequently, 30% of students use ChatGPT to answer writing-related questions, and only 10% use it for vocabulary suggestions. These results indicate that students primarily rely on ChatGPT for content development and organization, while also valuing its support in language accuracy and clarity.

Section three: The Impact of Chat GPT on Paragraph Writing Performance

Item 08: Has using Chat GPT helped improve your ability to write coherent and well-structured paragraphs?

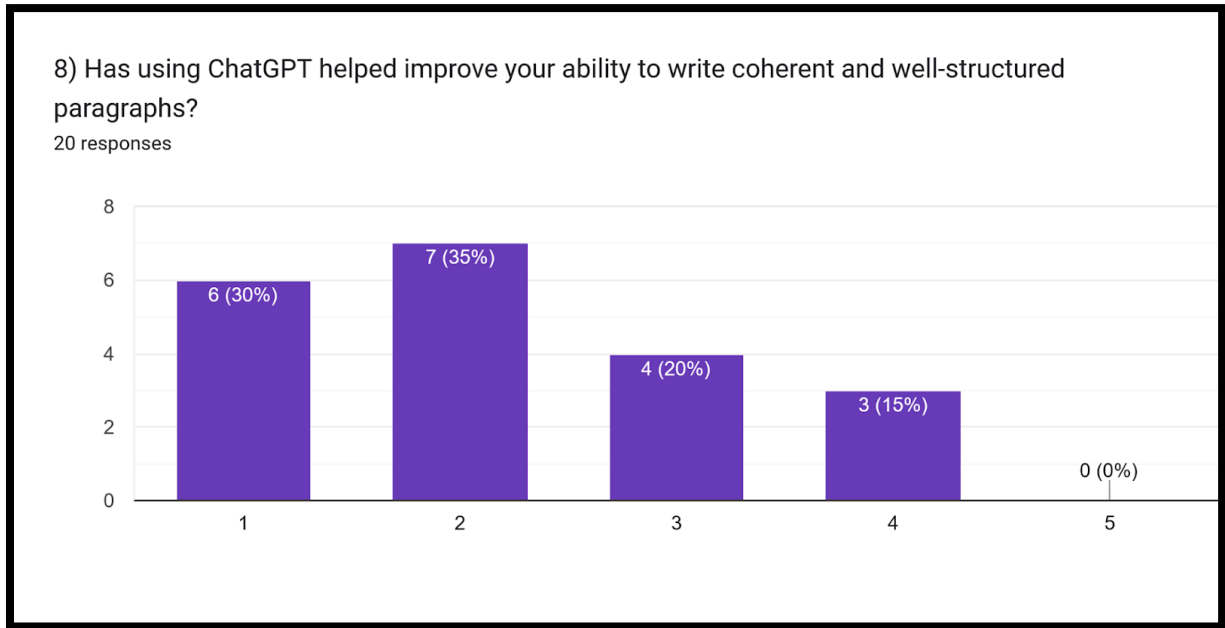


Figure 08: student's perceptions about Chat GPT

Figure 8 presents students' perceptions of ChatGPT's impact on their ability to write coherent and well-structured paragraphs. The majority of responses were clustered at the lower end of the scale, with 35% selecting level 2 and 30% selecting level 1, indicating limited perceived improvement. Additionally, 20% of respondents remained neutral at level 3, and 15% selected level 4, reflecting slight disagreement regarding ChatGPT's effectiveness. No participants selected level 5, suggesting that none perceived a significant enhancement in their writing abilities. These findings suggest that while students use ChatGPT, many view its impact on paragraph structuring as modest.

Item 09: To what extent has Chat GPT improved your writing skills in terms of : Organization of ideas, vocabulary usage, sentence structure, clarity of writing, overall writing fluency.

Figure a: Organization of ideas

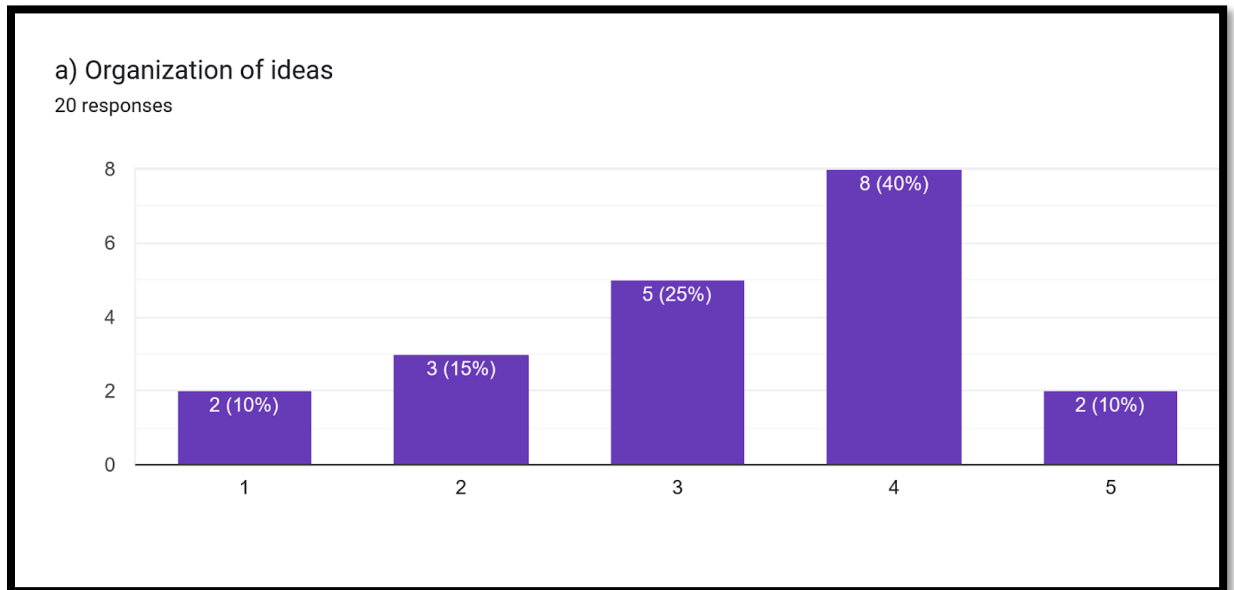


Figure A illustrates participants' perceptions of ChatGPT's impact on their ability to organize ideas in writing. The most common response was level 4, selected by 40% of respondents, indicating a strong perceived improvement. Additionally, 25% selected level 3 and 15% selected level 2, reflecting a moderate impact for a substantial portion of users. Meanwhile, 10% rated the improvement at level 1, suggesting minimal benefit, and another 10% selected level 5, indicating the highest perceived enhancement. Overall, the responses are concentrated in the mid-to-upper range, suggesting a generally positive effect of ChatGPT on idea organization.

Figure b: vocabulary usage

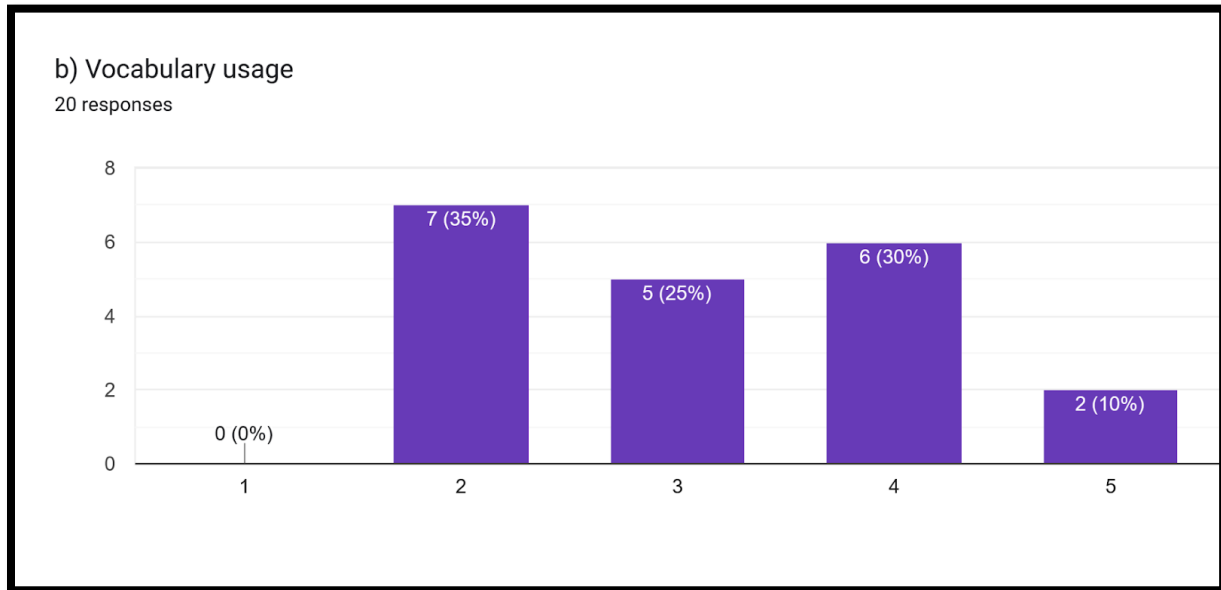


Figure B presents participants' views on the impact of ChatGPT on their vocabulary usage. The most frequently selected rating was level 2, chosen by 35% of respondents, suggesting a slight perceived improvement. Additionally, 30% rated the impact at level 4 and 25% at level 3, indicating that a considerable portion perceived moderate to strong benefits. A smaller group (10%) rated the impact at level 5, showing a high level of perceived improvements, while no participants selected level 1, indicating no respondents felt ChatGPT had no effect on their vocabulary. These findings suggest a generally positive, though varied, perception of ChatGPT's role in enhancing vocabulary use.

Figure c): Sentence structure

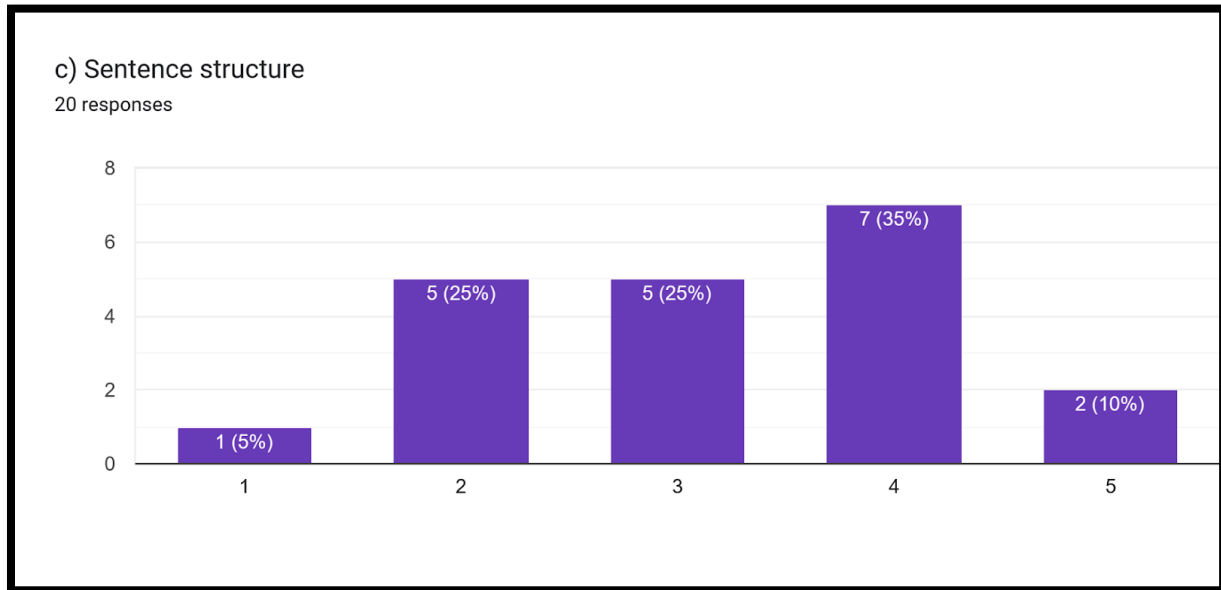


Figure C illustrates participants' perceptions of ChatGPT's impact on their sentence structure. The most frequently selected rating was level 4, chosen by 35% of respondents, indicating a strong perceived improvement. Additionally, 25% of participants selected levels 2 and 3, reflecting a moderate effect. A smaller portion, 10%, rated the improvement at level 5, indicating excellent perceived enhancement, while only one respondent (5%) selected level 1, suggesting minimal benefit. Overall, the responses indicate that the majority of users experienced at least some improvement in sentence structure, with the trend leaning toward moderate to strong positive impact.

Figure d: Clarity of writing

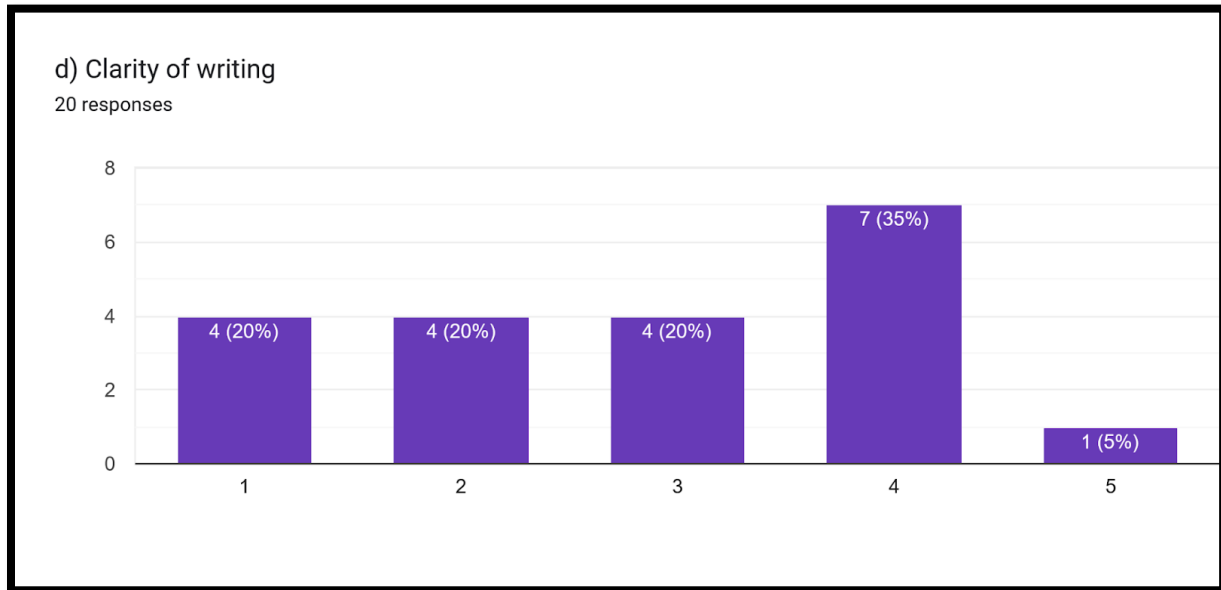


Figure D presents participants' perceptions of ChatGPT's effect on the clarity of their writing. The most common rating was level 4, selected by 35% of respondents, indicating a notable perceived improvement. Levels 1, 2, and 3 each received 20%, reflecting a balanced distribution among those who experienced minimal to moderate benefits. Only 5% of participants rated the impact at level 5, indicating a strong perceived improvement. Overall, the data suggests that while a considerable number of users found ChatGPT helpful in improving clarity, the perceived enhancements were generally moderate rather than substantial.

Figure e: Overall writing fluency

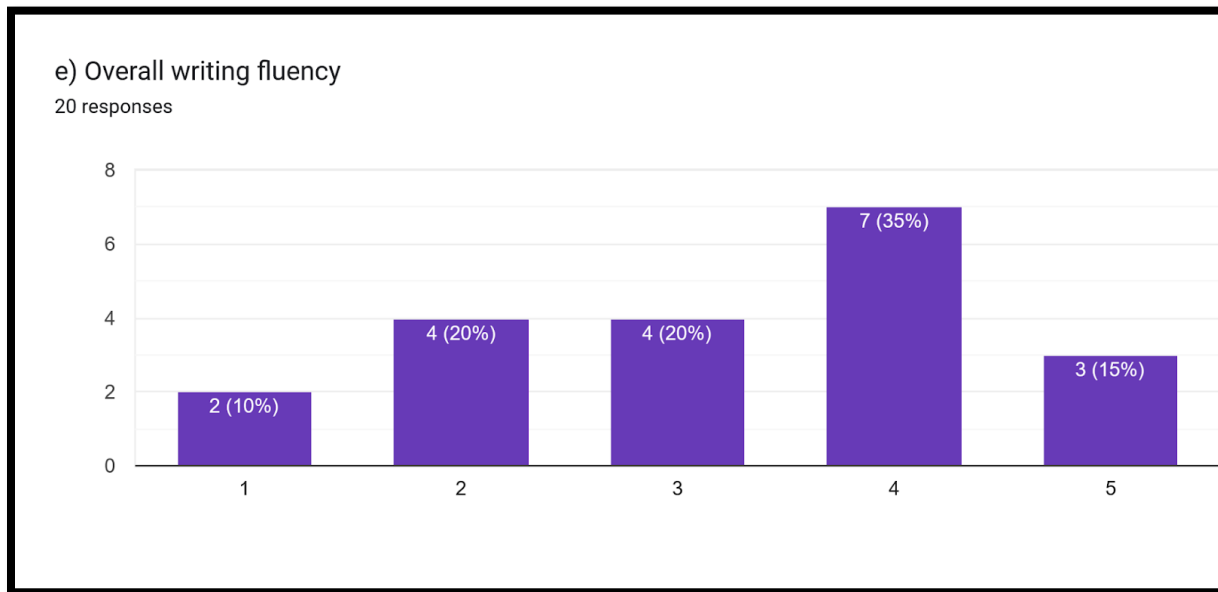


Figure E illustrates participants' perceptions of ChatGPT's impact on their overall writing fluency. The most frequently selected rating was level 4, chosen by 35% of respondents, suggesting a significant perceived improvement. Both levels 2 and 3 were selected by 20% of participants, indicating moderate perceived benefits. A smaller portion, 15%, rated the impact at level 5, reflecting a strong enhancement in fluency. Only 10% of respondents chose level 1, indicating minimal benefit. Overall, the data suggests a generally positive influence of ChatGPT on writing fluency, with varying degrees of perceived effectiveness across participants.

Item 10: Do you believe that using Chat GPT has increased your confidence in writing paragraphs in English?

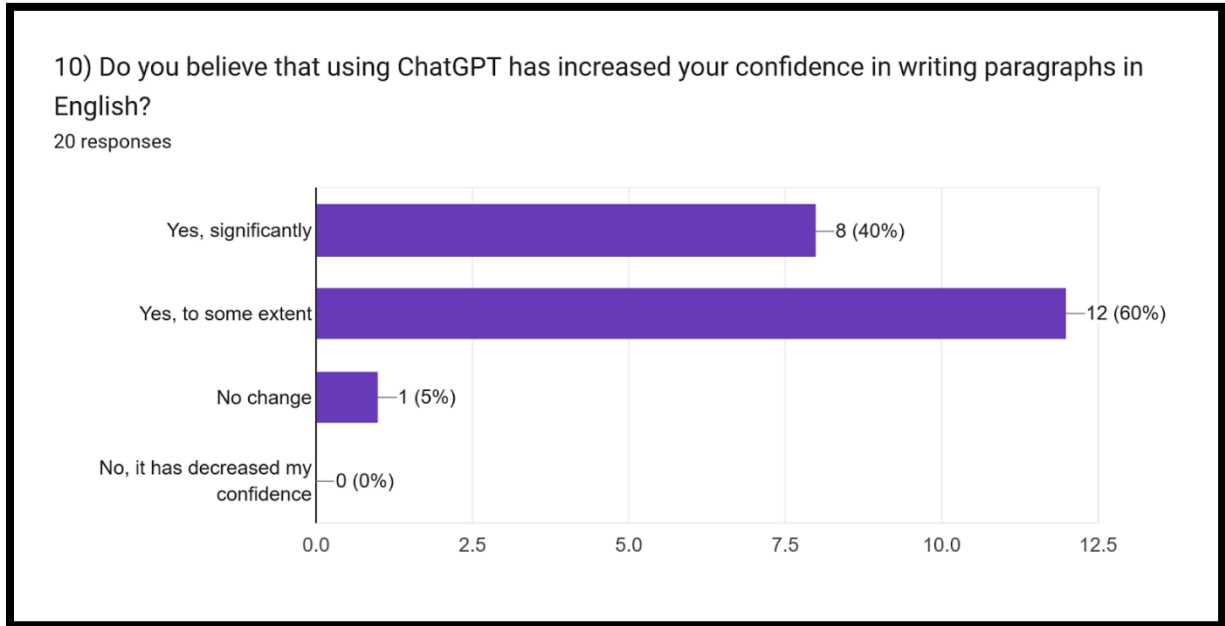


Figure 10: Impact of Chat GPT on Students' Confidence

Figure 10 illustrates participants' perceptions of ChatGPT's impact on their confidence in writing paragraphs in English. A majority of respondents (60%) reported a moderate increase in confidence, while 40% indicated a significant boost. Only 5% of participants stated that their confidence remained unchanged, and notably, no respondents reported a decrease in confidence. These results suggest that the vast majority of students experienced an enhancement in their writing confidence due to using ChatGPT, highlighting its perceived effectiveness as a supportive tool for academic writing.

Section four: Focus on Chat GPT's Summarizing Feature

Item 11: Have you used Chat GPT's summarizing feature to help you improve your paragraph writing?

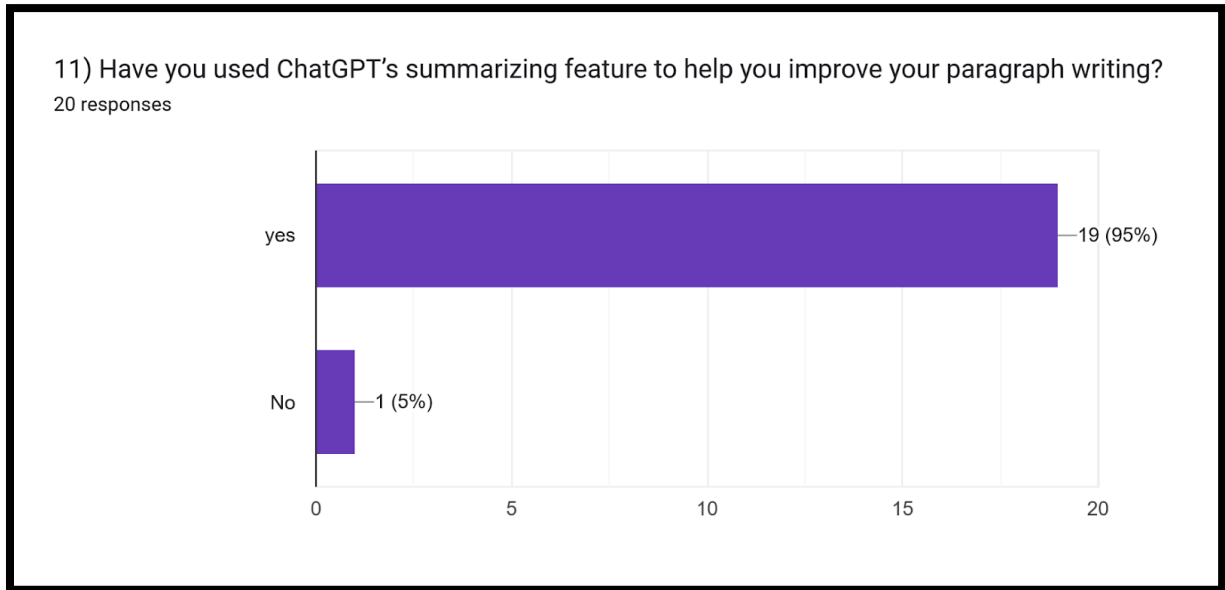


Figure 11: Use of Chat GPT's Summarizing Feature to Improve Paragraph Writing

Figure 11 presents participants' responses regarding their use of ChatGPT's summarizing feature to enhance paragraph writing. An overwhelming majority of respondents (95%) reported using this feature, indicating strong engagement and perceived usefulness. Only 5% (1 out of 20 participants) stated they had not used the summarizing tool. These findings suggest that the summarizing feature is widely utilized and valued by students as an effective aid in improving the clarity, focus, and conciseness of their paragraph writing.

Item 12: How often do you use Chat GPT’s summarizing feature to clarify information for your writing tasks?

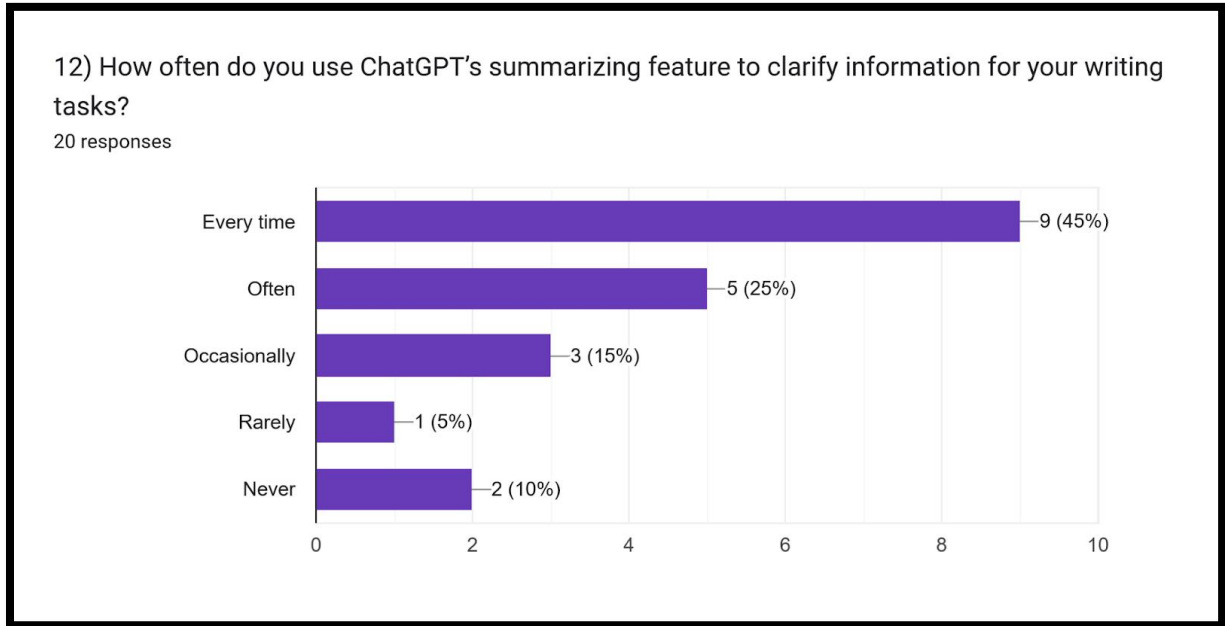


Figure 12: Frequency of Using Chat GPT’s Summarizing Feature

Figure 12 presents data on the frequency of students’ use of ChatGPT’s summarizing feature for clarifying information in their writing tasks. A significant portion of respondents (45%) reported using the feature every time, while 25% indicated frequent use, and 15% reported occasional use. In contrast, only 5% of participants used it rarely, and 10% never used it. Overall, 70% of the respondents use the summarizing feature regularly (every time or often), demonstrating its strong perceived value in enhancing clarity and coherence in written expression. These results highlight the summarizing tool’s practical role in supporting students’ writing processes.

Item 13: In your experience, does Chat GPT accurately capture the key points when summarizing a given text?

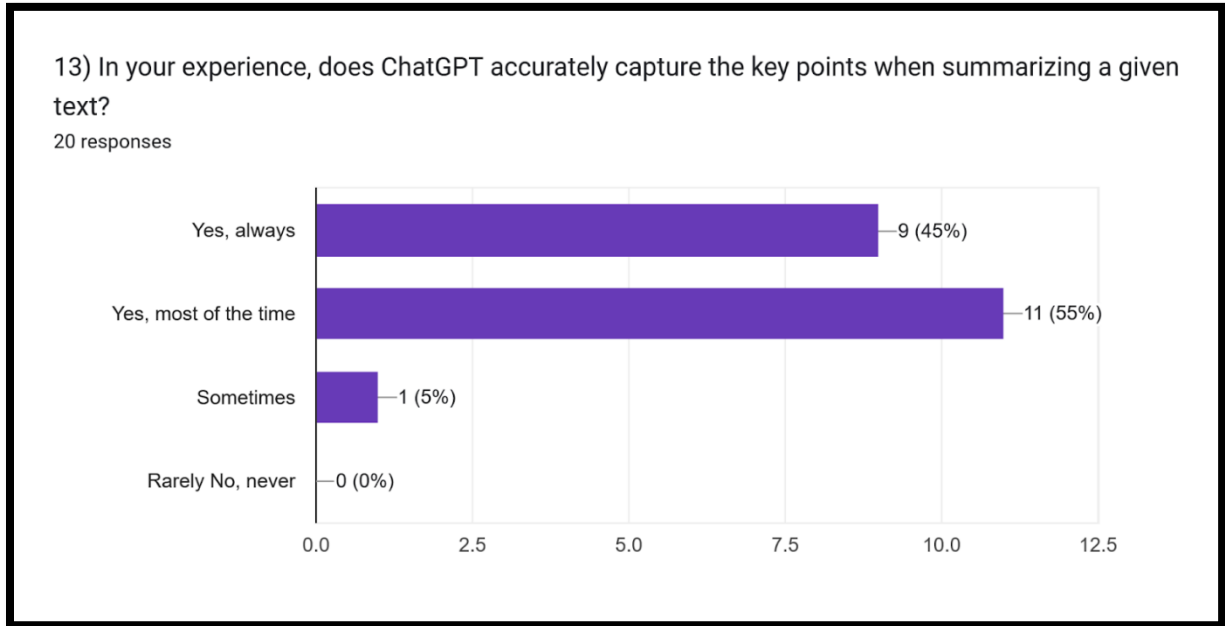


Figure 13: Users' Perceptions of Chat GPT's Accuracy in Capturing Key Points of summarization

Figure 13 presents data on students' perceptions of the accuracy of ChatGPT's summarizing feature. A majority of respondents (55%) reported that the feature captures key points "most of the time," while 45% indicated it "always" performs accurately. Only one respondent (5%) selected "sometimes," and notably, none of the participants chose "rarely" or "never." This distribution indicates a high level of confidence in the summarizing tool's reliability, with 100% of users reporting consistent or frequent accuracy. The absence of negative responses reinforces the tool's perceived effectiveness in identifying and presenting essential information for academic writing.

Item 14: Do you feel more confident in your ability to summarize information after using Chat GPT?

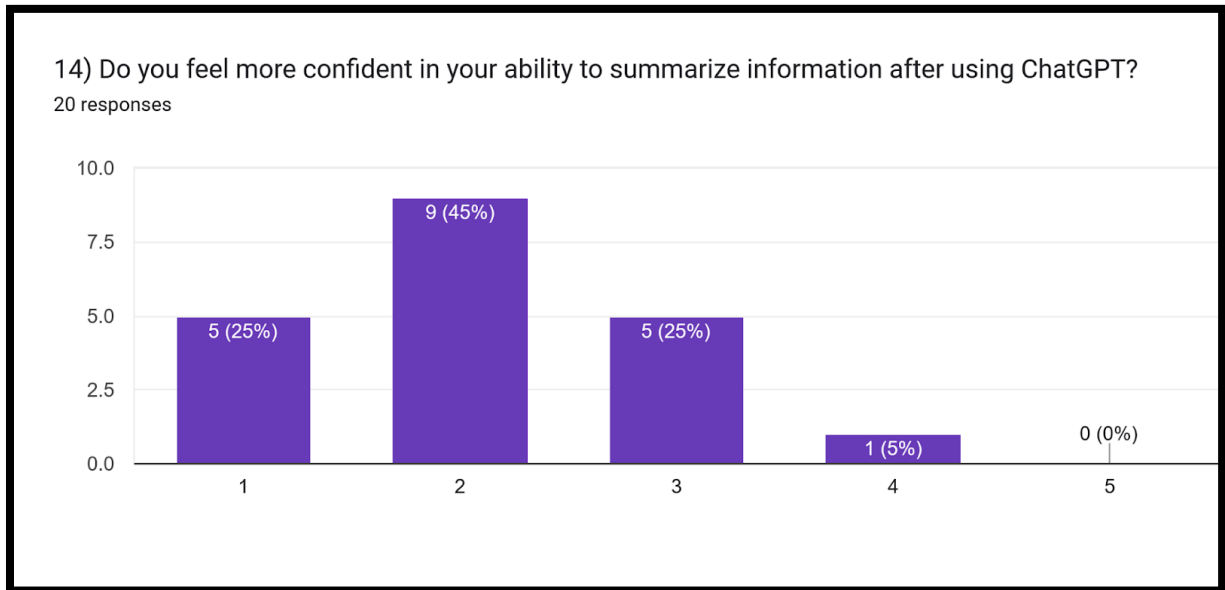


Figure 14: Students' Confidence in Summarizing Information

Figure 14 displays survey results concerning the impact of ChatGPT on participants' confidence in summarizing information. The highest proportion of respondents (45%) selected level 2, indicating a moderate increase in confidence. Additionally, 25% chose level 1 and another 25% selected level 3, showing a varied but generally positive perception of improvement. Only 5% selected level 4, and another 5% selected level 5, reflecting that very few participants felt either highly confident or unaffected. These findings suggest that the majority experienced a moderate enhancement in summarization confidence due to ChatGPT, with responses clustering in the lower to mid-range levels. The results point to ChatGPT's supportive role in skill development, while also highlighting individual differences in its perceived effectiveness.

Item 15: In your opinion, does using Chat GPT for summarizing help you understand the text better and integrate key ideas more effectively into your writing?

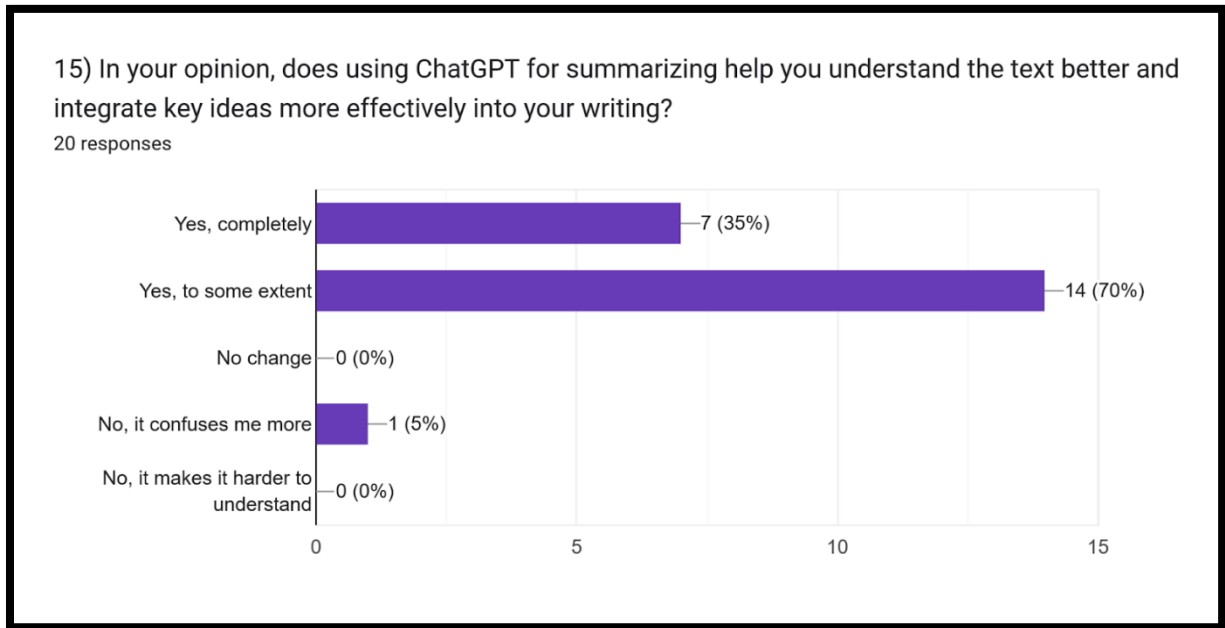


Figure 15: Students' Perceptions of Chat GPT's Effectiveness

Figure 15 presents survey data on the perceived effectiveness of ChatGPT's summarization feature in aiding text comprehension and integrating key ideas into writing. The majority of respondents (70%) reported that the feature helps them understand texts to some extent, while 35% stated it is completely beneficial. A minimal portion (5%) indicated that the tool caused confusion, and notably, no participants reported that it made understanding more difficult. These results indicate that ChatGPT's summarization capability is widely regarded as a useful support tool for improving reading comprehension and synthesizing information in writing. The overall positive perception underscores its value in academic contexts where clarity and effective integration of ideas are essential.

Item 16: In what type of writing tasks do you find Chat GPT's summarizing feature most useful?

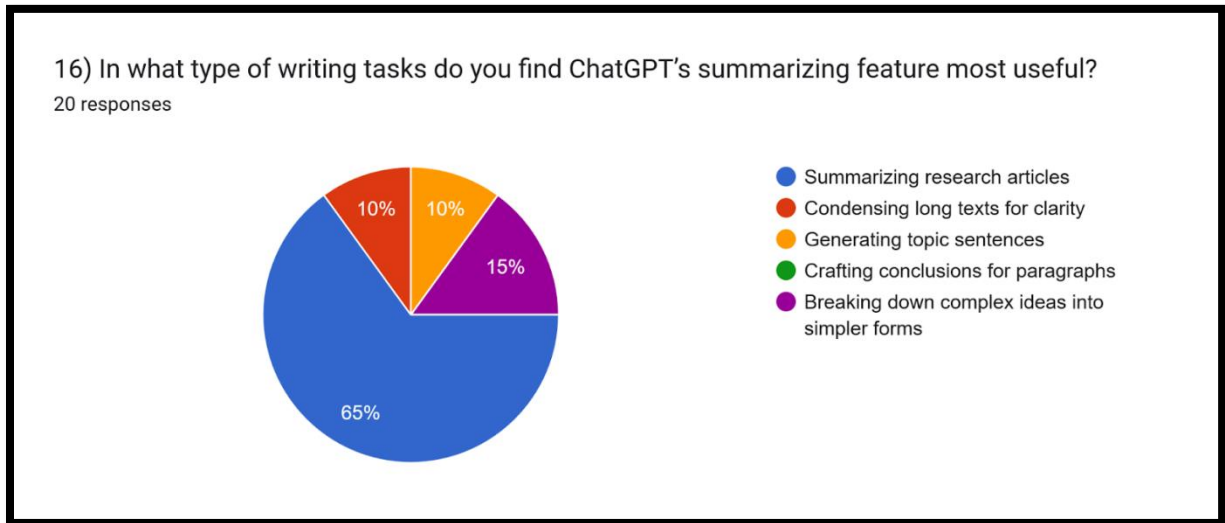


Figure 16: usefulness of Chat GPT in the types of writing

Figure 16 presents survey data on the specific writing tasks where students find ChatGPT's summarizing feature most beneficial. The majority of respondents (65%) reported using the feature primarily for summarizing research articles, indicating its strong utility in handling complex and information-dense academic texts. Additionally, 15% of participants found it useful for condensing long texts to improve clarity, while 10% used it for generating topic sentences and another 10% for crafting paragraph conclusions. These results suggest that although the summarization tool supports a variety of writing functions, its perceived value is highest in research-oriented tasks. This highlights the tool's significant role in facilitating comprehension and synthesis in academic writing.

Item 17: How satisfied are you with the language style and tone of the summarized content generated by Chat GPT?

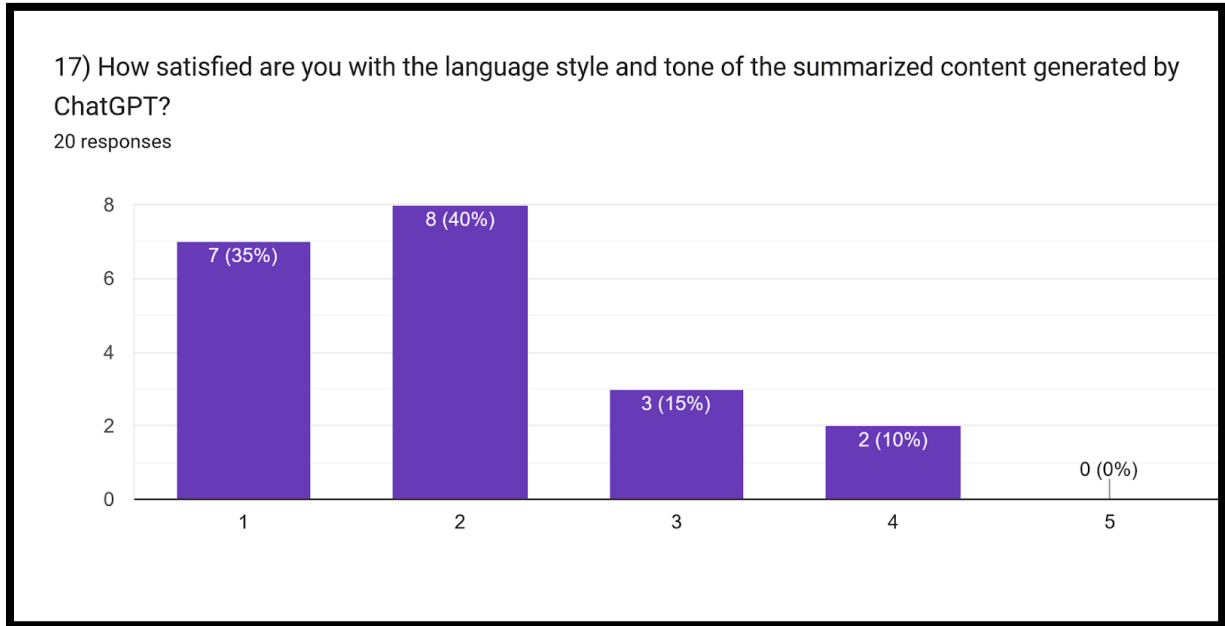


Figure 17: Students' satisfaction with the Language Style and Tone of Chat GPT

Figure 17 displays participants' satisfaction levels with the language style and tone of ChatGPT's summarized content, based on a 5-point rating scale. The majority of respondents expressed dissatisfaction, with 35% rating it at level 1 and 40% at level 2, totaling 75% who found the style and tone unsatisfactory. A smaller portion (15%) selected level 3, indicating neutral or moderate satisfaction, while only 10% rated it at level 4. Notably, no participants gave a rating of 5, signifying no strong satisfaction. These findings suggest that the overall perception of ChatGPT's summarization tone and language style is largely negative. The data highlights a need for improvement in areas such as clarity, formality, and appropriateness to better align with academic or professional writing standards.

Item 18: Would you recommend using Chat GPT to other EFL students for improving their writing performance?

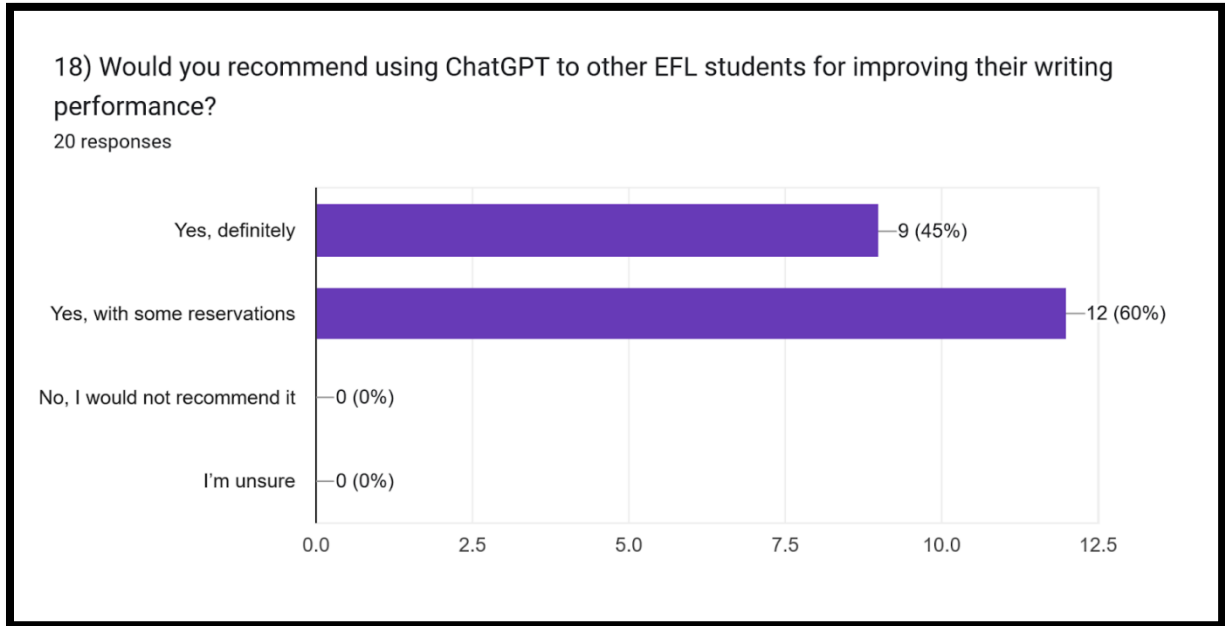


Figure 18: Students recommendation of Chat GPT use

Figure 18 displays responses from 20 participants regarding their willingness to recommend ChatGPT to other EFL students for improving writing performance. A substantial portion (45%) responded with “Yes, definitely,” showing strong support, while 60% selected “Yes, with some reservations,” indicating a favorable but cautious recommendation. No participants chose “No, I would not recommend it” or “I’m unsure,” suggesting a uniformly positive perception of ChatGPT’s usefulness. Despite the combined percentage exceeding 100%, which may indicate overlapping responses or a reporting anomaly, the overall trend highlights a unanimous endorsement of ChatGPT’s role in enhancing writing skills. The preference for conditional approval suggests that while students find the tool beneficial, some

remain mindful of potential limitations such as dependency, content reliability, or suitability for complex writing tasks.

Section five: Overall Experience

Item 19: What are the main benefits you have experienced using Chat GPT for paragraph writing?

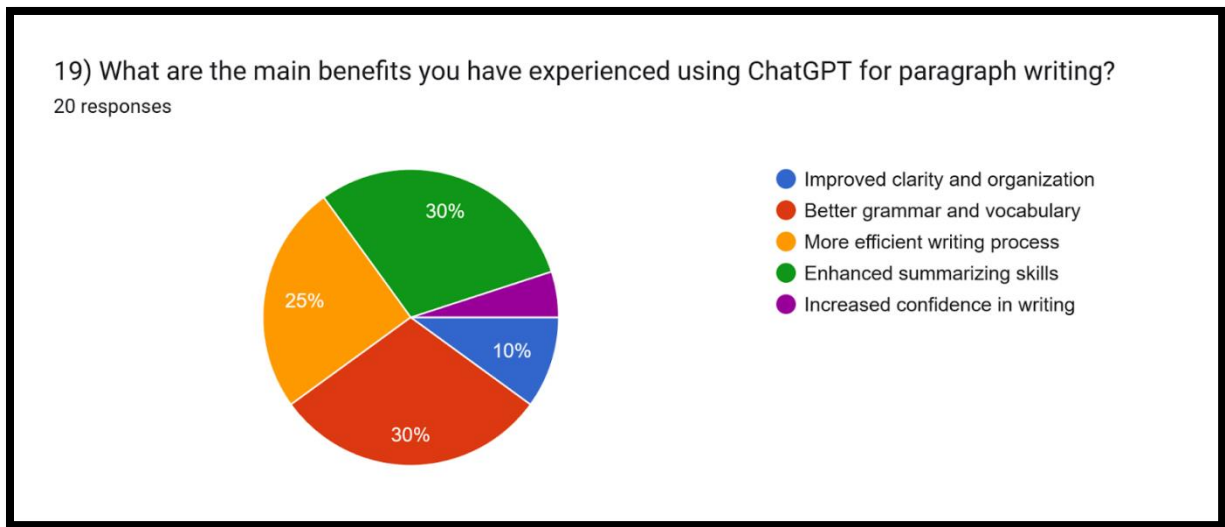


Figure 19: Benefits of Using Chat GPT for Paragraph Writing

Figure 19 presents a pie chart summarizing the perceived benefits reported by 20 participants when using ChatGPT for paragraph writing. The most frequently cited advantages were improved clarity and organization *and* better grammar and vocabulary, each selected by 30% of respondents. This indicates that a majority of users view ChatGPT as particularly effective in enhancing sentence structure, coherence, and linguistic accuracy. Additionally, 25% of participants recognized a more efficient writing process as a benefit, reflecting ChatGPT's role in streamlining the composition of written work. Conversely, enhanced summarizing skills were mentioned by only 10% of respondents, and increased writing confidence by just 5%, suggesting

these outcomes were less commonly experienced. Overall, the data highlights that users primarily appreciate ChatGPT for improving foundational writing aspects, while its influence on more advanced skills appears more limited.

Item 20: Can you describe any challenges or limitations you have faced when using Chat GPT to summarize content or generate paragraph ideas? How did you overcome them?

The final question of the questionnaire examined the challenges and limitations faced by participants when using ChatGPT to summarize content or generate paragraph ideas, along with the strategies employed to address them. Among the 20 respondents, multiple recurring themes emerged. A notable proportion reported issues with ChatGPT omitting key details or producing vague and off-topic suggestions. To mitigate these issues, many participants indicated that they adjusted their usage strategies such as refining prompts, cross-checking outputs with original texts, or providing additional background information to enhance accuracy. Repetitiveness in word usage was another commonly cited concern, perceived to affect clarity and precision. Additionally, some respondents mentioned that ChatGPT occasionally misinterpreted their intended meaning, although clarifying prompts often led to improved outputs. Technical limitations of the free version were also highlighted, particularly regarding access to advanced functionalities. A smaller group raised concerns about the credibility and rigidity of AI-generated content. In contrast, several participants reported no significant challenges and emphasized ChatGPT's helpfulness in improving vocabulary and facilitating writing tasks. One respondent notably praised the tool's intelligence compared to human input. Overall, while users identified a range of limitations, the majority demonstrated adaptability in overcoming them, reinforcing ChatGPT's perceived utility as a supportive tool for EFL writing development.

5. Discussions and Interpretations of the Main Findings

This section presents a summary of the key findings drawn from the students' questionnaire, focusing specifically on the impact of Chat GPT on EFL students' paragraph writing performance. Conducted as a case study involving Master 1 (M1) students, the investigation aimed to explore how the integration of Chat GPT influences students' ability to construct well-organized and coherent paragraphs. The results indicate that using Chat GPT not only contributes to improvements in paragraph structure, coherence, and language accuracy, but also fosters greater student autonomy particularly in developing topic sentences, organizing supporting details, and engaging in self-correction. These findings support our initial hypothesis that AI-assisted writing tools can play a significant role in enhancing students' paragraph writing performance and encouraging independent learning strategies within the EFL context.

5.1.Students' Questionnaire

Based on the data gathered from student feedback and questionnaires, several key conclusions can be drawn regarding the role of Chat GPT in enhancing EFL students' paragraph writing performance. First, many students reported difficulties with paragraph organization, coherence, and clarity, which are fundamental aspects of effective academic writing. These challenges were often linked to limited writing practice and a reliance on theoretical instruction rather than hands-on engagement. Students expressed that excessive focus on theory, coupled with insufficient support in applying writing conventions, contributed to their struggles in developing well-structured paragraphs. Second, the integration of AI-based applications like Chat GPT, was viewed positively by most students. They recognized Chat GPT's capacity to provide immediate feedback on grammar, vocabulary, coherence, and overall structure, which in

turn facilitated more efficient and autonomous learning outside the classroom. Third, many participants highlighted the motivational role of Chat GPT, as its interactive and user-friendly features encouraged consistent practice and reduced the anxiety often associated with academic writing.

Moreover, the students emphasized that the use of Chat GPT helped them identify and correct common errors, such as sentence fragmentation, misuse of academic language, and weak transitions. Although a small number of students still favored traditional methods, the overall sentiment reflected a strong belief in the effectiveness of integrating AI tools like Chat GPT into writing instruction. In conclusion, the findings indicate that Chat GPT has the potential to significantly improve EFL students' paragraph writing performance by supporting both linguistic accuracy and organizational clarity through accessible and personalized learning experiences.

Conclusion

In conclusion, this chapter aimed to analyze, present, and interpret the data gathered through the students' questionnaire in relation to the study's research questions. The questionnaire was distributed to first-year Master students in Applied Linguistics at the English Department of Mohamed Khider University, Biskra. Its primary objective was to identify the key challenges EFL students encounter in paragraph writing, as well as to investigate their attitudes toward the integration of Chat GPT as a tool to support the development of their writing skills. Furthermore, the questionnaire sought to assess the perceived effectiveness and practicality of employing AI-based tools like Chat GPT both within and beyond the classroom environment. The students' responses provided valuable insights into the potential impact of Chat GPT on EFL students' paragraph writing performance, shedding light on the benefits of its implementation in the academic context.

General conclusion

General conclusion

The study examined the impact of integrating the Chat GPT artificial intelligence application on the paragraph writing performance of EFL students. In light of the growing role of AI in education and the persistent challenges that students face in acquiring academic writing proficiency, this research set out to determine the extent to which Chat GPT can assist students in overcoming common difficulties related to paragraph structure, grammar, coherence, vocabulary, and overall writing effectiveness. To achieve this aim, the study was guided by two central research questions: to what extent does Chat GPT influence the development of paragraph writing performance among EFL students? and in what ways can Chat GPT help reduce the obstacles that hinder EFL students' paragraph writing performance?

The study was grounded in the theoretical premise that integrating AI tools such as Chat GPT into language instruction could yield notable improvements in students' writing outcomes compared to conventional teaching approaches. A quantitative research design was employed, and data were collected via a structured questionnaire administered to a randomly selected sample of 20 first-year Master students in Applied Linguistics at the English Department of Mohamed Khider University, Biskra. The questionnaire was designed to uncover the primary challenges students face in paragraph writing and to gather their perspectives on the effectiveness and practicality of Chat GPT as a writing support tool.

The results demonstrated that most participants perceived Chat GPT as a highly effective aid in enhancing multiple dimensions of their writing, including grammar accuracy, coherence, vocabulary choice, sentence structure, and paragraph organization. Students appreciated the tool's ability to provide immediate, individualized feedback, guide revisions, and improve

clarity, which in turn promoted greater autonomy in the writing process. Moreover, Chat GPT appeared to reduce writing-related stress and boost student performance to engage in writing tasks both in and beyond the classroom setting. These findings support the initial hypothesis, confirming that the integration of AI tools such as Chat GPT can contribute positively to EFL students' writing performance.

In conclusion, Chat GPT emerged not only as a convenient and accessible digital assistant but also as a valuable pedagogical resource that effectively complements traditional instruction. By offering personalized feedback and continuous support, it responds to the evolving needs of modern students, fosters greater engagement, and supports the development of academic writing skills in a more interactive and autonomous learning environment. While the findings are encouraging and the study acknowledges certain limitations, such as the relatively small sample size and the focus on a single academic institution. Therefore, further research involving larger, more diverse populations and varied educational contexts is recommended to validate and broaden these conclusions. Nevertheless, the present study contributes meaningful insights into the pedagogical potential of Chat GPT in EFL settings and adds to the expanding body of research on AI integration in language education.

Limitations of the Study:

During the implementation of this research, various limitations emerged, as detailed below:

- **Small Sample Size:** The study was limited to a relatively small sample of 20 Master One students from a single university. This restricted sample size may not adequately represent the broader population of EFL students.
- **Short-Term Observation:** The study assessed students' perceptions and experiences at a single point in time. It did not examine the long-term effects of using Chat GPT on writing development.

Pedagogical Implications and Recommendations

This study aimed to explore the effect of integrating Chat GPT in enhancing paragraph writing performance among EFL students. The findings of this investigation have significant implications for improving writing instruction in EFL contexts, including the following:

1. **Integration of AI in Writing Instruction** since Its use in classrooms can promote students autonomy, reinforce writing conventions, and offer personalized feedback, helping students improve grammar, coherence, and vocabulary.
2. **Encouragement of Students Autonomy and Motivation** By providing instant feedback and writing suggestions, Chat GPT can empower students to take more responsibility for their

learning and reduce writing anxiety. This may foster a more engaging and confidence-building environment for writing practice.

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Appendix A

Mohamed Khider University - Biskra

Department of Literature and Foreign Languages

English Department

Students' Questionnaire

This questionnaire aims to explore the effect of Chat GPT, an AI-based language model, on the paragraph writing performance of English as a foreign language (EFL) student. Specifically, we are interested in understanding how features such as summarizing may assist you in improving your writing skills. Your feedback will provide valuable insights into the role of AI tools in enhancing writing proficiency and will contribute to research in the field of language learning and technology. Please answer the following questions based on your experiences with Chat GPT, especially in relation to your writing tasks. Your responses will remain confidential and are greatly appreciated.

Demographic Information:

1) What is your age?

- ☐ 21-25
- ☐ 26-30
- ☐ 30 and above

2) What is your gender?

- ☐ male
- ☐ Female

3) How long have you been studying English as a foreign language(EFL)?

- ☐ 5-8years
- ☐ 8-11years
- ☐ More than11years

4) What is your current proficiency level in English?

- ☐ Beginner
- ☐ Elementary
- ☐ Intermediate
- ☐ Upper-Intermediate
- ☐ Advanced

Part1: Usage of Chat GPT

5) Have you ever used Chat GPT for improving your writing skills?

- ☐ Yes
- ☐ No

6) How often do you use Chat GPT to help with your writing tasks?

- ☐ Every time I write
- ☐ Often

☐ Occasionally

☐ Rarely

☐ Never

7) What specific features of Chat GPT do you usually use for writing tasks? (You may choose more than one.)

☐ Grammar and spelling correction

☐ Rewriting sentences

☐ Generating ideas

☐ Summarizing content

☐ Providing vocabulary suggestions

☐ Structuring paragraphs

☐ Answering questions related to writing

Part2: The Impact of Chat GPT on Paragraph Writing Performance

8) Has using Chat GPT helped improve your ability to write coherent and well-structured paragraphs?

☐ Strongly agree

☐ Agree

☐ Neutral

☐ Disagree

☐ Strongly disagree

9) To what extent has Chat GPT improved your writing skills in terms of (rate from 1 to 5)

a) Organization of ideas

1-2-3-4-5

b) Vocabulary usage

1-2-3-4-5

c) Sentence structure

1-2-3-4-5

d) Clarity of writing

1-2-3-4-5

e) Overall writing fluency

1-2-3-4-5

10) Do you believe that using Chat GPT has increased your confidence in writing paragraphs in English?

- ☐ Yes, significantly
- ☐ Yes, to some extent
- ☐ No change
- ☐ No, it has decreased my confidence

Part3: Focus on Chat GPT's Summarizing Feature

11) Have you used Chat GPT's summarizing feature to help you improve your paragraph writing?

- ☐ Yes
- ☐ No

12) How often do you use Chat GPT's summarizing feature to clarify information for your writing tasks?

- ☐ Every time
- ☐ Often
- ☐ Occasionally
- ☐ Rarely

☐ Never

13) In your experience, does Chat GPT accurately capture the key points when summarizing a given text?

☐ Yes, always

☐ Yes, most of the time

☐ Sometimes

☐ Rarely No, never

14) Do you feel more confident in your ability to summarize information after using Chat GPT?

☐ Yes, significantly more confident

☐ Yes, confident

☐ No change

☐ Not confident

☐ Not confident at all

15) In your opinion, does using Chat GPT for summarizing help you understand the text better and integrate key ideas more effectively into your writing?

☐ Yes, completely

☐ Yes, to some extent

☐ No change

☐ No, it confuses me more

☐ No, it makes it harder to understand

16) In what type of writing tasks do you find Chat GPT's summarizing feature most useful?

☐ Summarizing research articles

☐ Condensing long texts for clarity

☐ Generating topic sentences

- ☐ Crafting conclusions for paragraphs
- ☐ Breaking down complex ideas into simpler forms

17) How satisfied are you with the language style and tone of the summarized content generated by Chat GPT?

- ☐ Very satisfied
- ☐ Satisfied
- ☐ Neutral
- ☐ Dissatisfied
- ☐ Very dissatisfied

18) Would you recommend using Chat GPT to other EFL students for improving their writing performance?

- ☐ Yes, definitely
- ☐ Yes, with some reservations
- ☐ No, I would not recommend it
- ☐ I'm unsure

Part4: Overall Experience

19) What are the main benefits you have experienced using Chat GPT for paragraph writing?

- ☐ Improved clarity and organization
- ☐ Better grammar and vocabulary
- ☐ More efficient writing process
- ☐ Enhanced summarizing skills
- ☐ Increased confidence in writing

Other (please specify):.....

20) Can you describe any challenges or limitations you have faced when using Chat GPT to summarize content or generate paragraph ideas? How did you overcome them?.....

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

Thank you for your time and valuable input!

الملخص

تبحث هذه الدراسة في تأثير تطبيق الذكاء الاصطناعي "شات جي بي تي" على أداء طلبة اللغة الإنجليزية كلغة أجنبية في مجال الكتابة، والمتعلقة بطلبة السنة الأولى ماستر لغة إنجليزية بجامعة محمد خيضر بسكرة حيث تهدف الدراسة إلى تحليل كيفية مساهمة "شات جي بي تي" في تحسين مهارات الكتابة لدى الطلبة من خلال تقديم الدعم الفوري والتغذية الراجعة البناءة أثناء عملية الكتابة. كما تهدف الدراسة أيضا إلى تقديم لمحة عامة عن الذكاء الاصطناعي، مع التركيز على أداة "شات جي بي تي"، بالإضافة إلى توضيح كيفية استخدامها في سياق تعليم الكتابة الأكاديمية لتعزيز استقلالية الطلبة وتحسين فهمهم لهذه المهارة، حيث تقترح الفرضية الأساسية أن استخدام "شات جي بي تي" يمكن أن يحسن من جودة الكتابة المنجزة من خلال مساعدة الطلبة على تنظيم أفكارهم، وتصحيح أخطائهم، وإثراء مفرداتهم، لهذا ولتحقيق الأهداف المحددة، اعتمد الباحث على المنهج الوصفي، مستعينًا بأداة الاستبيان الموجّه لطلبة السنة الأولى ماستر لغة إنجليزية (عينة عشوائية). وكشفت النتائج أن

الطلبة أدركوا أن دمج "شات جي بي تي" في الصف يمكن أن يُحسّن من إنتاجية الكتابة من خلال التركيز على التطبيق العملي وتحفيز التفكير النقدي أثناء عملية الكتابة.

الكلمات المفتاحية : الذكاء الاصطناعي, الكتابة الأكاديمية, شات جي بي تي, طلبة ماستر 1, كتابة الفقرة.

Résumé

Cette étude vise à explorer l'impact de l'utilisation de l'application d'intelligence artificielle Chat GPT sur les performances des étudiants en anglais langue étrangère en rédaction de paragraphes, en particulier les étudiants de première année de master en anglais à l'Université Mohamed Khider de Biskra. L'objectif principal est d'analyser comment Chat GPT contribue à améliorer les compétences rédactionnelles des étudiants en leur fournissant un soutien immédiat et des commentaires constructifs pendant le processus de rédaction. L'étude vise également à fournir un

aperçu de l'intelligence artificielle, en se concentrant sur l'outil Chat GPT, ainsi qu'à illustrer son application dans le contexte de l'enseignement de la rédaction académique pour renforcer l'autonomie des apprenants et améliorer leur compréhension de cette compétence. L'hypothèse principale suggère que l'utilisation de Chat GPT peut améliorer la qualité des paragraphes produits en aidant les apprenants à organiser leurs pensées, à corriger leurs erreurs et à enrichir leur vocabulaire. Pour atteindre les objectifs spécifiés, le chercheur a eu recours à l'approche descriptive, en s'appuyant sur l'outil questionnaire adressé aux étudiants de première année de master en anglais (échantillon aléatoire). Les résultats ont révélé qu'ils ont réalisé que l'intégration de Chat GPT dans la salle de classe pouvait améliorer la productivité de l'écriture en se concentrant sur la pratique et en stimulant la pensée critique pendant l'écriture.

Mots-clés : Apprentissage de l'anglais, Chat GPT, Écriture académique, Étudiants Master1, Intelligence artificielle, Rédaction de paragraphes.