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AI Chatbots as Virtual Tutors: Benefits and Challenges for EFL Learners

Case Study: Third Year EFL Students of Chadli Bendjedid University - El Taref.

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Dedication

I dedicate this work to:

Myself. Thank you for all the blood, sweat, and tears you went through. You did great.

My parents.

Especially to my strongest Mum.

All my family and my friends.

Douaa Rahmani

Abstract

Artificial Intelligence (AI) has become increasingly integrated into educational contexts, offering new opportunities for autonomous and personalized learning. This study investigates the use of AI chatbots as virtual tutors in English as a Foreign Language (EFL) learning. It aims to examine both their potential benefits and the challenges they pose for learners, as well as to assess their overall impact on language acquisition. The research was conducted with third-year students from the Department of English at Chadli Bendjedid University. A mixed-method approach was employed, combining a questionnaire answered by 20 students and interviews conducted with 8 participants. The analysis of both questionnaire and interview data revealed that AI chatbots offer various benefits for EFL learners, including instant feedback, language practice, and increased motivation. However, learners also face notable challenges such as technical difficulties, occasional lack of contextual understanding, and limitations in deep conversation. Despite these issues, most learners perceived AI chatbots as effective virtual tutors that contribute positively to their English language development. The collected data also revealed that most learners view AI chatbots positively and find them helpful in improving various language skills, particularly vocabulary and writing. Participants highlighted benefits such as immediate responses, constant availability, and interactive engagement. However, the study also identified several drawbacks, including misunderstandings of complex expressions, lack of emotional or human-like communication, and occasional technical issues. Despite these concerns, learners expressed enthusiasm for continuing to use AI chatbots, provided they are improved to better meet user needs. Based on these findings, the study concludes with several pedagogical recommendations aimed at improving the use of AI chatbots in EFL contexts and enhancing their effectiveness as virtual tutors.

Key Words: AI Chatbots, Virtual Tutors, EFL Learners, Language Learning, Educational Technology.

Abstract in Arabic

أصبحت تقنيات الذكاء الاصطناعي تندمج بشكل متزايد في السياقات التعليمية، مما أتاح فرصًا جديدة لتعلّم الذاتي والموجّه وفق احتياجات المتعلّم. تهدف هذه الدراسة الوصفية إلى استكشاف استخدام روبوتات المحادثة المدعومة بالذكاء الاصطناعي كمدرسين افتراضيين في تعلّم اللغة الإنجليزية كلغة أجنبية، من خلال التركيز على الفوائد المحتملة التي تقدمها، إضافةً إلى التحديات التي قد تواجه المتعلمين، مع تقييم أثرها العام على اكتساب اللغة. أُجريت الدراسة على طلبة السنة الثالثة من قسم اللغة الإنجليزية بجامعة الشاذلي بن جديد، باستخدام منهجية تعتمد على الدمج بين الطريقتين الكمية والنوعية، وذلك من خلال استبيان شمل 20 طالبًا، ومقابلات أُجريت مع 8 مشاركين. وقد أظهرت النتائج أن معظم الطلبة ينظرون بإيجابية إلى استخدام روبوتات المحادثة ويعتبرونها مفيدة في تحسين مهاراتهم اللغوية، لاسيما المفردات والكتابة. كما أشار المشاركون إلى ميزات مثل الردود الفورية، وتوفّر الخدمة في أي وقت، والتفاعل الجذاب. ومع ذلك، تم تسجيل بعض السلبيات، من بينها عدم فهم بعض التعبيرات المعقّدة، وغياب الطابع الإنساني في التفاعل، إضافة إلى بعض المشكلات التقنية. وعلى الرغم من هذه التحديات، عبّر المتعلمون عن رغبتهم في مواصلة استخدام هذه الأدوات، شرط تحسين أدائها لتلائم احتياجاتهم بشكل أفضل. وتُختتم الدراسة بجملة من التوصيات البيداغوجية التي من شأنها تعزيز فعالية روبوتات المحادثة في سياقات تعليم اللغة الإنجليزية كلغة أجنبية

الكلمات المفتاحية: روبوتات المحادثة، الذكاء الاصطناعي، المتعلّم الافتراضي، متعلّمو اللغة الإنجليزية،

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List of Abbreviations and Acronyms

AI: Artificial Intelligence

AIML: Artificial Intelligence Markup Language

EFL: English as a Foreign Language

LMD: Licence-Master-Doctorat

ML: Machine Learning

NLP: Natural Language Processing

Chapter One

The Introductory Chapter

Introduction

The first chapter represents a brief overview about the dissertation, which includes the background of the study, statement of the problem, aims and the significance of the study, research questions and research hypotheses. It also contains the method, population and sampling and the tools used. Finally, it presents the structure of the dissertation and the limitations.

Background of the Study

The growing prominence of English as a global language has led to a significant increase in the number of individuals learning English as a Foreign Language (EFL). English has become the most widely used language in various fields such as education, business, technology, and science, making it a crucial tool for individuals seeking to expand their knowledge and career opportunities. Learning English, however, can be a challenging yet rewarding experience for non-native speakers, as it involves mastering complex grammar structures, vocabulary, and pronunciation. Despite its importance, learners from non-English speaking backgrounds often face significant challenges in accessing effective learning methods, primarily due to the limitations of traditional classroom models. While traditional classrooms remain the most common approach to language learning, they may not always meet the diverse needs of learners, especially those who lack access to qualified instructors or appropriate educational resources.

In recent years, technology has increasingly reshaped the landscape of education, offering innovative solutions to enhance learning experiences. Among the most significant advancements in this field is the rise of Artificial Intelligence (AI), which has demonstrated its potential to revolutionize teaching and learning processes. One of the most promising applications of AI in education is the development of AI chatbots, which serve as virtual tutors. These intelligent systems are designed to interact with learners in a way that mimics human conversations, making them an invaluable resource for language learning. As the demand for effective foreign language education grows, particularly for EFL learners, there has been a growing interest in exploring technological solutions to address common challenges. AI chatbots, powered by advanced Natural Language Processing (NLP) and Machine Learning (ML) technologies, have garnered attention as innovative educational tools. These virtual tutors provide personalized, interactive learning experiences that cater to the unique needs of each learner, offering real-time assistance, tailored feedback, and continuous engagement. With their ability to simulate human-like conversations, AI chatbots hold great promise in enhancing language acquisition and supporting learners in a flexible and accessible manner.

Despite the many advantages, the integration of AI chatbots into EFL education is not without challenges. While AI has made significant strides in understanding and generating human language, there are still limitations to its capabilities. For instance, chatbots may struggle with understanding nuanced language use, cultural references, or idiomatic expressions. Moreover, the lack of human empathy and emotional intelligence can hinder the depth of learning experiences, particularly when dealing with sensitive or complex topics. Additionally, technological barriers such as internet access and device compatibility can limit the effectiveness of AI chatbots, especially in regions with limited access to advanced technology.

In conclusion, the potential of AI chatbots to transform the landscape of language learning is vast. However, their successful integration into EFL education requires a balanced approach, combining the strengths of AI with the insights and expertise of human educators.

Recently, the use of AI has significantly grown in various fields, especially in education. A key application of AI is utilizing chatbots as virtual tutors. These intelligent systems can interact with learners, answer their questions, and provide personalized support at any time. This technology has opened new doors in language learning, particularly for EFL learners who often face challenges related to access, motivation, and individualized feedback. As the world moves towards digital learning environments, it becomes essential to explore how AI chatbots can support and enhance the learning process.

Statement of the Problem

EFL learners frequently face challenges such as limited opportunities to practice English outside the classroom, low motivation, and lack of personalized feedback. Traditional learning methods sometimes fail to meet the diverse needs of these learners. With the rise of AI-powered chatbots, a new opportunity has emerged to provide students with instant support and personalized interaction. However, the integration of such technology into language learning is still relatively new, and its actual benefits and challenges need further exploration. Therefore, the present study aims to investigate how AI chatbots function as virtual tutors for EFL learners and what potential advantages and limitations they present in the learning process.

Aims of the Study

The objectives of this study are as follows:

- The primary aim of this study is to explore the role of AI chatbots as virtual tutors in supporting EFL learners.

- It seeks to identify the benefits that AI chatbots offer in language learning and examine the challenges and limitations faced by learners when using these tools (Understand how chatbots impact learners' motivation and performance in English).
- It also aims to assess the effectiveness of AI chatbots in improving students' language skills, and to identify the potential limitations of AI chatbots in EFL education.

Significance of the Study

This dissertation is significant because it addresses a relatively new field that combines technology with language education. The findings can help teachers, learners, and educational institutions understand the potential of AI chatbots in improving English language acquisition. Moreover, the study contributes to the growing body of knowledge related to digital learning tools and their practical application in EFL contexts, particularly in areas where resources are limited.

Research Questions

The present study attempts to answer the following questions:

Q1: What are the perceived benefits of using AI chatbots as virtual tutors for EFL learners?

Q2: What challenges do EFL learners face when interacting with AI chatbots?

Q3: How do EFL learners perceive the effectiveness of AI chatbots as virtual tutors?

Research Hypotheses

In accordance with the research questions, the following hypotheses are formulated:

H1: AI chatbots provide significant support to EFL learners by offering immediate feedback and language practice.

H2: EFL learners may face technical or linguistic difficulties when using AI chatbots.

H3: EFL learners perceive positively AI chatbots as a useful and effective tool for language practice.

Methodology

Research Design

The research has been conducted following the mixed method in order to answer the research questions and to validate the above hypotheses. This approach is adopted to fulfill the objectives of the study which examines chatbots as virtual tutors with its benefits and challenges for EFL learners. It allows for a comprehensive understanding of students' experiences with AI chatbots. It also highlights the methods that were chosen to reach the purposes of this research, and provides information about the participants and sample of the study.

Population and Sample

The researcher has conducted 20 third-year students chosen from the total number (126) of Licence-Master-Doctorat (LMD) students at Chadli bendjedid University – El Tarf enrolled in the EFL program during the academic year of 2024-2025.

Data Collection Tools

In order to attain the purpose of this dissertation, the study uses two instruments. The first instrument is a questionnaire consisted of twenty-one close-ended and open-ended questions. This instrument was administered to twenty (20) third year LMD students regarding the use of AI chatbots as virtual tutors. It was designed to gather quantitative data. The second instrument is an interview conducted to a group of eight (8) students from the previous sample, it is consisted of six open-ended questions exploring whether chatbots were helpful or not while using them, its aim is to gather qualitative data.

Structure of the Study

This dissertation is divided into five main chapters; the first chapter is an introduction that contains the background of the study, statement of the problem, aims and significance of the study, research questions and hypotheses, research methodology, the structure of the dissertation as well as the limitation.

The second chapter reviews the relevant literature on AI in education, virtual tutoring, and the role of chatbots in EFL learning, highlighting key theoretical and empirical contributions. Furthermore, the researcher explores both the benefits and challenges of using AI chatbots as virtual tutors for EFL learners. The first section presents AI chatbots which includes their definitions, how do they work and their types. Moreover, it explains their ability to offer personalized learning experiences, immediate feedback, and round-the-clock availability. The second section examines AI chatbots as virtual tutors which contains an overview about technologies behind virtual tutors and key functions of virtual tutors. It also outlines the benefits and challenges with its use.

Finally, the researcher investigates AI chatbots in education explaining its role in the learning process. It also gives the potential solutions and future directions for integrating AI chatbots into the EFL learning process, considering advancements in AI technology and how they could address existing limitations.

The third chapter provides the research methodology adopted for the study, including the research design, the population of the study, data collection tools, and procedures for data analysis. The fourth chapter presents and analyzes the findings obtained from the questionnaire and interview responses, organized thematically according to the research questions. The fifth and last chapter discusses the results in the light of the existing literature.

It also provides pedagogical recommendations, and suggests possible directions for future research.

Limitations of the Study

Despite the importance of this study, several limitations should be acknowledged. First, the sample size may be relatively small due to time constraints and access issues. This could affect the generalizability of the results which means that it might not apply to all EFL learners. Also, the data is based on what students say in questionnaires and interviews, which might not always be 100% accurate. Another point is that not all students have the same experience with AI chatbots, so their answers could be very different. In addition, since technology is changing fast, the information in this study might become less relevant over time. Finally, some learners may face problems like poor internet or lack of devices, which can affect how they use chatbots.

Chapter Two

Literature Review

Introduction

The present chapter discusses the theoretical basis and a related literature about AI chatbots as virtual tutors, benefits and challenges for EFL learners. The theoretical background includes three main sections. The first section gives an overview about AI chatbots. The second explains AI chatbots as virtual tutors. The last part discusses AI chatbots as virtual tutors in education including benefits challenges of Using AI chatbots in Education.

Section One: AI Chatbots

AI is increasingly influencing various fields, particularly education, where it fosters more personalized and student-centered learning experiences (Holmes, Bialik, & Fadel, 2021). Within this context, AI-powered chatbots have emerged as valuable tools capable of acting as virtual tutors by offering immediate responses to student questions, encouraging autonomous learning, and extending educational support beyond traditional classroom boundaries (Zawacki-Richter, Marín, Bond, & Gouverneur, 2019). As these technologies continue to evolve, their role in reshaping educational methods and learner engagement is growing significantly, prompting educators to consider both the opportunities and challenges they introduce (Fitria, 2021).

Definition

AI chatbots are computer programs that interact with users through text-based interfaces to simulate human conversation (Adamopoulou & Moussiades, 2020). Initially

adopted in customer service and e-commerce sectors, these systems have evolved to offer efficient and automated assistance on websites and digital platforms. Many online companies now implement chatbots to answer product-related questions in a conversational style that closely resembles human dialogue. Thanks to advancements in natural language processing, current chatbots are capable of engaging users in more dynamic and context-aware interactions.

How Do AI Chatbots Work?

Unlike rule-based chatbots that follow scripted responses, AI chatbots utilize advanced techniques such as machine learning and natural language processing to understand user intent and provide relevant, context-aware replies (Jain, Kumar, & Sharma, 2018). These systems are capable of handling open-ended questions and adjusting to diverse conversation flows due to their algorithmic training. A key feature of AI chatbots is their ability to learn from prior interactions, which improves their performance over time. Although more complex to build than scripted bots, they are especially effective in environments with changing user expectations. By drawing on previous conversations and structured knowledge bases, these chatbots can offer personalized assistance even when user input is unstructured or unexpected (Nuruzzaman & Hussain, 2018).

Types of AI Chatbots

There are several types of AI chatbots depending on how they work and the tasks they perform. Here are the main types:

Rule-Based Chatbots

These chatbots operate based on predetermined rules to interpret and answer questions. Each question has a pre-programmed answer, and chatbots follow this path without using advanced AI.

Advantages:

- Easy to set up.
- Works well with simple and repetitive queries.

Disadvantages:

- Cannot adapt to unprogrammed or advanced questions.
- Doesn't have the ability to learn from previous conversations.

AI Chatbots

They use AI techniques such as ML and NLP to understand and interpret questions that don't follow established rules, thus enabling them to provide more personalized answers.

Advantages:

- Able to understand user intent and keywords.
- Able to handle unprogrammed queries and learn from previous conversations.
- Can provide personalized answers based on context and history.

Disadvantages:

- Can be complex to set up and require more programming time.
- Building intelligent chatbots often requires access to large datasets and advanced programming frameworks, making their implementation more complex than rule-based systems (Abdul-Kader & Woods, 2015).

Hybrid Chatbots

They combine features of both rule-based and AI-powered chatbots. In this case, the bot can start by answering using simple rules, but if the answer is more complex or does not meet the rules, it switches to AI to handle the query.

Advantages:

- Combines the speed and accuracy of simple responses with the ability to handle more complex queries using AI.
- Greater flexibility.

Disadvantages:

- May be more complex to design and set up than the previous two types.

Contextual Chatbots

These chatbots rely on contextual data processing to interact more intelligently with users. They can track conversations and understand changes in context based on previous interactions.

Advantages:

- The ability to maintain conversations for longer periods and improve interaction comprehension.
- Can provide more accurate responses based on the context of the conversation.

Disadvantages:

- Requires big data and monitoring to effectively learn context.

Voice-Enabled AI Chatbots

This type of chatbot uses technologies such as speech recognition to convert voice commands into text, which is then interpreted using AI.

Advantages:

- Provide a voice interface for interacting with users.
- Suitable for people who prefer voice interaction.

Disadvantages:

- There may be problems understanding different dialects or languages.

Transactional Chatbots

These chatbots are designed to perform specific tasks such as financial transactions, travel reservations, or online product purchases.

Advantages:

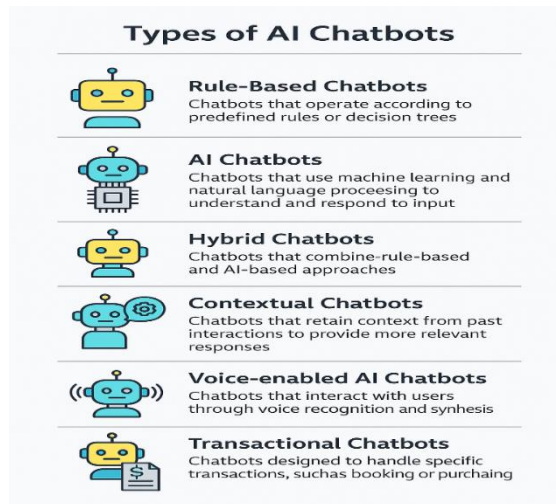
- Perform specific tasks efficiently and quickly.
- Interact with live data such as bank cards or inventory.

Disadvantages:

- One major limitation of early chatbots is their restricted functionality, as they can only operate within predefined tasks and lack adaptability to dynamic or unexpected inputs (Shawar & Atwell, 2007).

Figure 1

Types of AI Chatbots



Section Two: AI Chatbots as Virtual Tutors

What are Virtual Tutors?

Virtual tutors are AI-based systems designed to emulate human teachers by offering automated, responsive educational support. Unlike traditional classroom environments that depend on fixed schedules and physical attendance, virtual tutors provide continuous support, accessible anytime and from anywhere, they adjust to each learner's needs in real time, making the learning process more personalized and effective. (Woolf, 2010) (Holmes, Bialik, & Fadel, 2019) In response to the growing need for personalized and flexible learning, virtual tutors have become effective, scalable, and economically viable tools that enhance learner engagement and achievement (Zawacki-Richter et al., 2019).

Technologies behind Virtual Tutors

Virtual tutors are powered by a combination of advanced technologies that enable personalized and responsive educational interactions. These tools allow chatbots to comprehend language, adapt over time, and cater to individual student needs effectively.

NLP

NLP equips virtual tutors with the ability to process and comprehend human language in order to engage effectively with learners. By leveraging NLP, AI chatbots are capable of examining student input, determining the user's intent, and producing responses that are relevant and context-sensitive (Jurafsky & Martin, 2020). Example: When a student asks, “What is the capital of France?”, NLP allows the chatbot to interpret the question and answer correctly with “Paris.”

ML

Machine learning enables virtual tutors to enhance their performance over time by adapting based on historical student interactions. These systems can identify patterns in learner behavior and adjust instructional strategies accordingly, offering personalized guidance tailored to individual needs (Woolf, 2010). Example: When a student regularly struggles with calculus problems, an intelligent tutor using machine learning can identify this pattern and offer focused exercises to help improve their understanding.

Knowledge Graphs

Knowledge graphs assist AI tutors in identifying and linking related concepts, allowing them to generate more cohesive and context-rich explanations. This interconnected understanding supports deeper learning by helping students see the relationships between ideas (Hogan et al., 2021). Example: When a student asks about global warming, the tutor can relate the topic to carbon emissions, climate change, and the greenhouse effect to offer a comprehensive response. By leveraging such technologies, virtual tutors foster adaptive learning experiences that align with individual learner needs and make the educational process more engaging and customized (Luckin, 2017).

Key Functions of Virtual Tutors

Virtual tutors play a vital role in assisting students throughout their educational experience. By leveraging artificial intelligence, they can interpret diverse queries and deliver quick answers, helping learners stay focused and avoid spending extra time looking for information (Woolf, 2010). They also provide timely feedback on assignments and assessments, enabling students to recognize their errors and gradually enhance their understanding (Luckin et al., 2016).

Another key function is tracking academic progress. Virtual tutors monitor individual performance to identify strengths and learning gaps, allowing them to modify instructional strategies accordingly. In addition, they offer customized recommendations such as relevant reading materials or practice tasks that suit each learner's specific needs (Holmes et al., 2019)

The interaction process can be summarized as follows:

- **Student submits a question:** The learner interacts with the tutor via text or voice.
- **Virtual tutor analyzes input:** Natural Language Processing (NLP) helps interpret the question's intent and content (Jurafsky & Martin, 2021).
- **Virtual tutor provides feedback:** The system responds immediately with relevant answers or corrections.
- **Virtual tutor tracks performance:** Each interaction is recorded to monitor learning patterns.
- **Virtual tutor suggests personalized activities:** Based on progress, the tutor recommends suitable resources.

- **Continuous learning improvement:** This feedback loop helps refine instruction and maintain student engagement, ultimately supporting better learning outcomes (Luckin et al., 2016).

Real Word Example of Virtual Tutors

- **AIPal**

AIPal is a browser-based educational tool that integrates large language models such as GPT-4, Claude, and Gemini to assist learners with various academic tasks. It enables users to summarize digital content, translate information, generate written responses, and identify grammatical errors. By facilitating these processes, the tool contributes to more focused research and efficient academic writing (Zawacki-Richter et al., 2019).

- **ChatGPT**

Created by OpenAI, ChatGPT employs natural language processing techniques to support learners in real time. It facilitates idea generation, clarifies complex topics, and enables users to improve their language proficiency through conversational interactions. These features position ChatGPT as a useful educational tool across various academic fields (Yin & Satar, 2020).

- **PerplexityAI**

Perplexity AI is a smart assistant that merges the capabilities of a chatbot with up-to-date information retrieval in real time, It enhances students' research by providing concise answers supported with source citations, thereby improving content credibility and learner confidence. Such tools exemplify how AI-driven platforms can support academic inquiry (Zawacki-Richter et al., 2019).

- **Resum AI**

ResumAI is an AI-based resume builders are increasingly used by students and job seekers to generate tailored application materials. These tools utilize natural language processing to align resume content with job descriptions and optimize formats for applicant tracking systems, improving the chances of selection (Langer et al., 2021).

- **Notion AI**

AI-powered writing assistants embedded within digital workspaces—such as Notion—can significantly support academic productivity. These tools help students summarize content, generate drafts, and respond to questions based on existing data inputs. By integrating such AI functionalities, learners can streamline their study processes and manage tasks more effectively (Kasneji et al., 2023).

Benefits and Challenges of Using Virtual Tutors

Benefits

- Virtual tutors tailor instruction to match each learner’s pace, skill level, and preferences, fostering more effective and personalized learning experiences. (Holmes et al., 2019).
- They provide 24/7 access, enabling students to receive help at any time and from any location (Wollny et al., 2021).
- Learners may feel less anxious when interacting with AI tutors, encouraging participation and question-asking without fear of embarrassment (Zawacki-Richter et al., 2019).

- Immediate feedback from AI tutors enables students to recognize errors and improve comprehension in real time (Yin & Satar, 2020).
- Virtual tutors support flexible learning by allowing students to revisit content at their own pace (Yin, Lu, & Zhang, 2021).
- These tools are especially useful for EFL learners, providing translation support and conversational practice to enhance language acquisition (Yin, Lu, & Zhang, 2021).
- AI tutors deliver consistent responses, minimizing the variability sometimes found in human instruction (Wollny et al., 2021).
- They track student progress through built-in analytics, which allows educators and parents to monitor learning outcomes (Holmes et al., 2019).
- By reducing the need for private tutoring, virtual tutors can help lower educational costs and save time (Zawacki-Richter et al., 2019).

Challenges

- Unlike human teachers, AI tutors are limited in their ability to detect or respond to learners' emotional states, which can reduce emotional engagement and support (Holmes et al., 2019).
- Overdependence on AI tutors may discourage the development of independent learning habits and critical thinking skills (Kasneci et al., 2023).
- Unequal access to digital devices and reliable internet can prevent some students from benefiting fully from AI-based learning tools (Zawacki-Richter et al., 2019).
- Virtual tutors may sometimes misunderstand complex or ambiguous questions, resulting in inaccurate or unclear responses (Kasneci et al., 2023).
- The collection and processing of learner data raise concerns about privacy and responsible data use in educational environments (Zawacki-Richter et al., 2019).

- Reduced human interaction in AI-supported environments might affect learners' communication skills and limit opportunities for collaborative learning (Holmes et al., 2019).
- Institutions must frequently update and maintain AI systems, which can require significant technical and financial resources (Holmes et al., 2019).

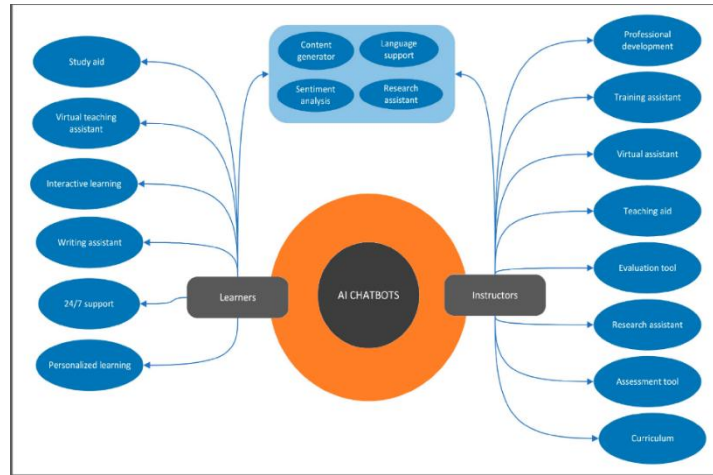
Section Three: AI Chatbots in Education

AI Chatbots in Education

The integration of AI chatbots into education is expanding due to their ability to offer on-demand, personalized assistance. Many of these chatbots are built using languages such as Artificial Intelligence Markup Language (AIML), enabling them to respond to student queries through text or audio across different time zones (Adamopoulou & Moussiades, 2020). Research using the Willingness to Communicate (WTC) framework demonstrated that conversational agents can enhance EFL learners' confidence and increase their frequency of English language use (Ayedoun et al., 2017). Furthermore, AI-powered chatbots provide user-friendly interfaces and accessible learning environments, especially for students with special needs, through voice-based interaction and adaptable feedback (Kasneci et al., 2023).

Figure 2

The Benefits of AI Chatbots In Education



Examples of AI Chatbots Used in Education

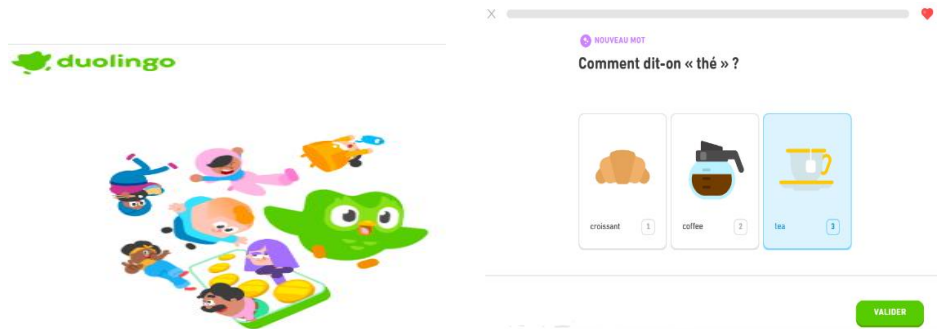
Several AI chatbots have been implemented in educational contexts, each offering unique benefits for learners.

Duolingo Chatbot

Duolingo’s chatbot functionality allows language learners to engage in simulated conversations that mimic real-life dialogue, enhancing practical language use. The system offers instant corrective feedback, which contributes to vocabulary retention and improved grammatical performance. Studies have shown that such AI-driven tools can increase learner motivation and facilitate language acquisition in a self-paced environment (Lavolette et al., 2015).

Figure 3

Duolingo Chatbot Interface for Language Practice

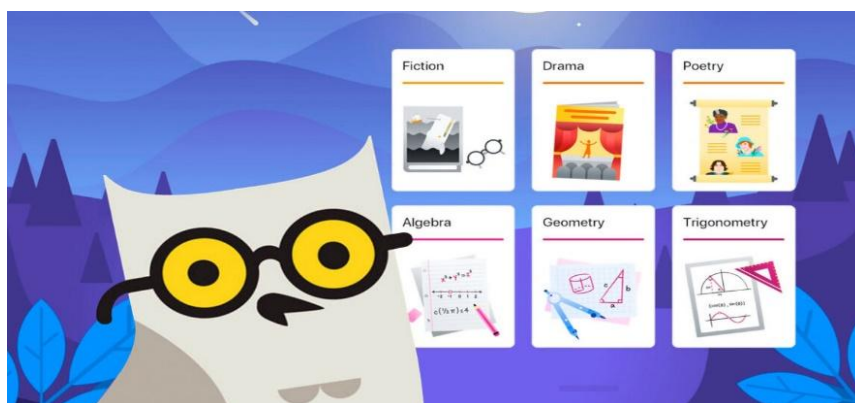


Socratic by Google

AI-powered educational applications increasingly support students in solving complex problems by combining technologies such as image recognition and logical reasoning. Tools like Socratic allow users to scan handwritten or printed questions and receive guided explanations, fostering independent learning in subjects like mathematics and science (Holmes et al., 2019).

Figure 4

Socratic App Solving a Math Problem.



Jill Watson (Georgia Tech):

Jill Watson is an AI-based virtual teaching assistant developed at Georgia Tech using IBM's Watson platform. It was designed to assist instructors by automatically responding to

students' frequently asked questions in online discussion forums. The system demonstrated the potential to significantly reduce instructors' workload while maintaining timely and relevant support for learners (Goel & Polepeddi, 2017).

Figure 5

Jill Watson Interacting with Students on a Discussion Forum.



Watson Tutor by IBM

IBM Watson has been applied in education to support personalized learning through AI-powered tools that analyze student performance data and adapt instruction accordingly. By identifying learners' strengths and weaknesses, such systems aim to optimize individual learning paths and improve academic outcomes (Holmes et al., 2019)

Figure 6

Watson Tutor Providing Personalized Feedback.



Benefits of Using AI Chatbots in Education

AI chatbots provide a wide range of benefits that contribute to improved learning experiences.

- **Personalized Learning:** AI chatbots adapt learning content and feedback to suit each student's level, pace, and preferences, enhancing individualized learning experiences (Wollny et al., 2021).
- **24/7 Availability:** Students can access academic support at any time, regardless of location or time zone, increasing flexibility and convenience (Zawacki-Richter et al., 2019).
- **Administrative Efficiency:** Chatbots automate repetitive administrative tasks, such as answering frequently asked questions and scheduling, allowing educators to focus more on teaching (Wollny et al., 2021).
- **High Scalability:** These tools can handle large volumes of student inquiries simultaneously without compromising the quality of interaction or feedback (Wollny et al., 2021; Zawacki-Richter et al., 2019).
- **Enhanced Engagement:** By incorporating interactive features and gamified elements, chatbots make learning more engaging and enjoyable for students (Wollny et al., 2021).
- **Support for Diverse Learners:** Chatbots offer multilingual support and accessibility tools (e.g., text-to-speech), promoting inclusivity for learners with different needs (Zawacki-Richter et al., 2019).
- **Real-Time Feedback:** Learners receive immediate feedback on exercises and activities, helping them quickly correct errors and reinforce learning (Bailey & Lee, 2022).

- **Data-Driven Insights:** AI chatbots can track learner progress and behavior, providing valuable analytics for teachers to adjust instruction accordingly (Chen et al., 2020).
- **Cost Efficiency:** By reducing the need for constant human support, chatbots help lower educational costs and save time for both students and educators (Bailey & Lee, 2022).
- **Improved Communication:** Some systems offer real-time updates on student performance, facilitating better communication between parents, teachers, and learners (Wollny et al., 2021).

Challenges of Using AI Chatbots in Education

- **Lack of Contextual Understanding:** Chatbots often fail to grasp complex or nuanced student input, leading to generic or irrelevant responses that may confuse learners (Zawacki-Richter et al., 2019; Woolf, 2010).
- **Inaccuracies and Hallucinations:** AI chatbots can sometimes generate incorrect or fabricated information (known as hallucinations), requiring human oversight to ensure accuracy (Wollny et al., 2021; Bender et al., 2021).
- **Algorithmic Bias:** If trained on biased data, chatbots may reinforce stereotypes or exclude underrepresented groups, raising ethical concerns about fairness in education (Mehrabi et al., 2019).
- **Privacy and Data Security:** AI systems often require access to personal learner data, which raises concerns about data protection, informed consent, and potential misuse (Zhou et al., 2020).
- **Overreliance and Reduced Critical Thinking:** Excessive dependence on AI tools can hinder the development of learners' critical thinking, autonomy, and problem-solving skills (Luckin et al., 2016).

- **Academic Integrity:** Chatbots can be misused for generating assignments or answers, making it harder to assess students' original thinking and learning outcomes (Lancaster & Cotarlan, 2021).
- **Limited Emotional Intelligence:** Unlike human educators, chatbots lack empathy and emotional awareness, which are essential for motivating and emotionally supporting students (Peters et al., 2020).
- **Technological Limitations:** AI chatbots are limited by their programming and may be ineffective in handling creative, ambiguous, or interdisciplinary tasks (Holmes et al., 2019).
- **Concerns over Teacher Job Security:** The increasing use of AI in education may raise fears among educators about being replaced, despite the technology being designed as a support tool (Holmes et al., 2019).

Learners' Perceptions and Attitudes toward AI Chatbots

Many EFL learners perceive AI chatbots as supportive tools in their language learning journey. They value the immediate feedback and availability these systems offer, allowing learners to practice at their own pace and outside traditional classroom settings. Research has shown that chatbots can enhance speaking and writing proficiency in a low-pressure environment, which helps reduce language anxiety and encourages participation (Fitria, 2021).

These tools offer a safe space where learners can make errors without fear of criticism, contributing to greater confidence in communication. Furthermore, AI chatbots are frequently used for conversational practice, helping learners improve fluency in everyday interactions (Susanti et al., 2021).

Nevertheless, some students express concerns about the emotional limitations of chatbots. Unlike human instructors, AI lacks empathy and cannot fully respond to learners' emotional cues, which may result in feelings of disconnection or frustration (Alm, 2021). Additionally, inaccuracies in chatbot responses can undermine trust and disrupt the learning process. Learners' digital literacy, prior experiences with AI tools, and the overall interface design of chatbots also shape their attitudes and willingness to engage (Amalia & Wulandari, 2022). Despite these drawbacks, many EFL students continue to view chatbots as effective complementary tools, particularly when integrated with teacher-led instruction.

Conclusion

To conclude, this chapter presented the role of AI chatbots as virtual tutors. It discussed the significance of AI chatbots as virtual tutors as well as the benefits and challenges for EFL learners. The following chapter is going to describe the methodology of this study.

Chapter Three

Methodology

Introduction

This chapter presents the methodological framework used to investigate the benefits and challenges of using AI chatbots as virtual tutors for EFL learners. It provides a detailed description of the research design, population and sampling, data collection tools and procedures. The purpose of this chapter is to explain how the study is conducted to ensure validity, reliability, and clarity of the research findings.

Research Design

This study employs a mixed-methods approach that integrates both quantitative and qualitative research techniques. This approach allows for a comprehensive understanding of students' experiences with AI chatbots in EFL learning. While the quantitative data provide measurable trends and general insights, the qualitative data offer deeper perspectives into participants' personal views, challenges, and expectations. The exploratory and descriptive nature of this design supports the aim of examining both the advantages and limitations of using AI chatbots in language education (Creswell & Creswell, 2018).

Population and Sampling

The population of this study is LMD third year EFL students from the department of English at Chadli Bendjedid University El Tarf. They are of a total number of 126 students. The sample includes 20 third-year students who enrolled during the academic year 2024-2025. This specific group is chosen because of their advanced level in English and their academic maturity, which may allow them to provide meaningful feedback on the use of emerging technologies in education. The sample includes both male and female students with different

language learning profiles. The study seeks to explore their awareness, perceptions, and potential use of AI chatbots as virtual tutors in the context of EFL learning. Participants are selected using purposive sampling, a non-probability technique commonly used in qualitative research to select individuals with specific knowledge or characteristics relevant to the research topic (Patton, 2002).

Data Collection Tools and Procedures

Two main instruments were used to collect data: a questionnaire and an interview. The questionnaire was designed to gather quantitative data on the attitudes, perceptions, and experiences of a sample of 20 third-year students from Chadli Bendjedid University – El Tarf regarding the use of AI chatbots as virtual tutors. Although the sample size was limited, the questionnaire enabled the collection of standardized responses to identify general trends within this specific group. Complementing this, interviews were conducted with a group of eight (8) participants. These interviews were intended to collect qualitative data through more detailed discussions, where students shared their personal experiences, challenges encountered while using AI chatbots, and suggestions for improvement. These tools were carefully selected to ensure both breadth and depth in data collection.

Description of Students' Questionnaire

A questionnaire consists of twenty-one (21) close-ended and open-ended questions (see Appendix A), divided into four main sections, was administered to twenty third-year students at Chadli Bendjedid University. The first section aimed to collect background information, including participants' gender, age, and level of English proficiency. The second section, titled "Uses and Benefits of AI chatbots," included questions about students' familiarity with AI chatbots, the frequency of their use, the devices they use to access them,

and their perceived benefits in improving various English language skills such as vocabulary, writing, and communication confidence.

The third section, “Challenges of Using AI Chatbots,” addressed the obstacles and limitations students might face when using chatbots for language learning, including misunderstandings, lack of interactivity, or situations where chatbots might not be helpful. The final section, “Attitudes towards AI Chatbots as Tutors,” explored learners’ comfort levels, motivations, and opinions about the role of AI chatbots in education, particularly whether they could supplement or even replace human tutors in certain contexts.

The questionnaire combined multiple-choice and open-ended items. In the close-ended questions, students were asked to select the appropriate options, while the open-ended questions provided space for them to elaborate on their answers. It included both self-developed items and adapted items from previous validated instruments. Some questions were formulated by the researcher to suit the specific context and objectives of the study, while others were adapted from established research tools to ensure content validity and comparability. Proper acknowledgment of original sources was maintained for the adapted items.

To ensure clarity and accessibility, the wording of the questions was adapted to suit the learners’ English level. The researcher also explained the instructions before administration and allowed students to ask for clarifications if needed. Completing the questionnaire took approximately 30 minutes, and participants demonstrated a high level of cooperation and engagement.

Description of Students' Interview

To complement the data gathered from the questionnaire, interviews were conducted with a selected group of eight (8) third-year EFL students from Chadli Bendjedid University. The primary aim of the interview was to collect qualitative data that could provide deeper insights into learners' personal experiences and views regarding the use of AI chatbots, such as ChatGPT, in English language learning.

The interview consisted of six open-ended questions (see Appendix B) that explored various aspects of chatbots usage, including learners' experiences, situations where chatbots were helpful or not, their perceptions of the chatbot's ability to meet individual learning needs, their level of comfort when using such tools, and suggestions for improvement.

All interview questions were self-developed, based on the research objectives and the main research questions. This qualitative tool aimed to explore learners' opinions, attitudes, and challenges in more detail, complementing the quantitative data gathered through the questionnaire.

Each interview lasted approximately six to ten minutes and was recorded using a mobile phone, with participants' consent. This allowed for accurate documentation and later analysis of the responses. The flexible format enabled participants to express their opinions freely, offering rich, descriptive data that could not be captured through the questionnaire alone. The interviews were conducted in a relaxed and supportive setting, which encouraged students to elaborate on their answers and reflect more deeply on their learning experiences.

This approach provided valuable qualitative insights, contributing to a more nuanced and comprehensive understanding of students' attitudes towards the use of AI chatbots in the context of EFL learning.

Conclusion

This chapter outlined the overall research methodology, including the research design, the participants involved, the data collection instruments, and the procedures used for gathering and analyzing the data. By combining both questionnaires and interviews, the study ensured a comprehensive understanding of EFL learners' perceptions of AI chatbots as virtual tutors.

Chapter Four

Results

Introduction

This chapter is devoted to showing the results of the data obtained from the two questionnaires and the interview. It is organized into two sections; the first section aims to present the data obtained from the questionnaire distributed to twenty students from Chadli Bendjedid University, Department of English. The second section presents the results generated from the structured interview conducted with eight students from the same department.

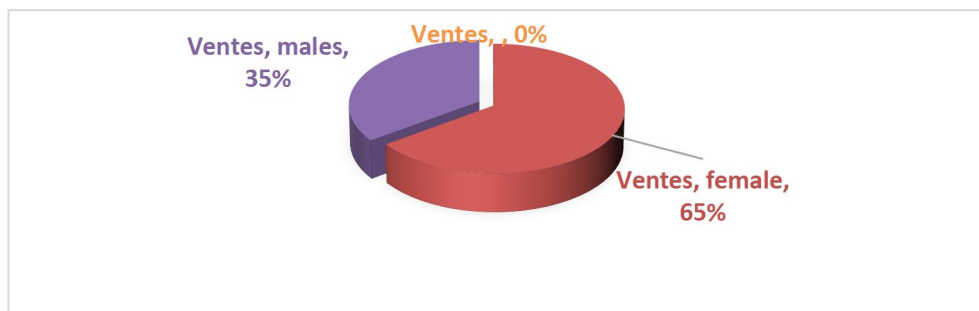
Analysis of learners' questionnaires

Section A: Background Information

Q1. What is your gender?

Figure 7

Gender Distribution of Participants in the Study

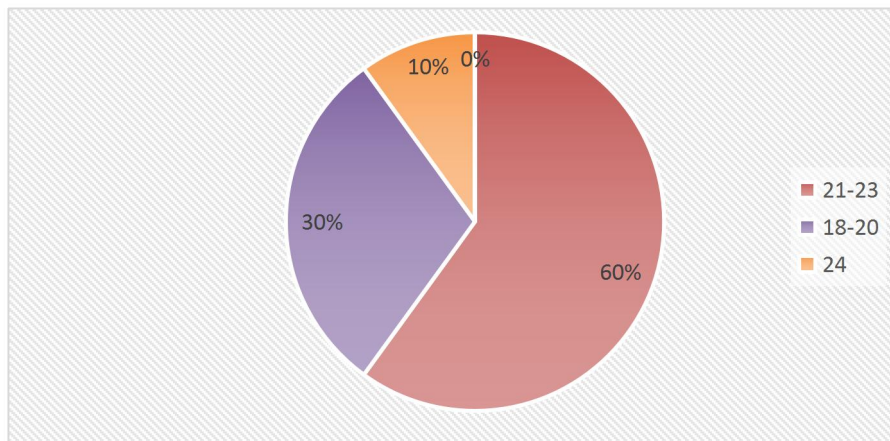


As shown in Figure7 there are more female participants than males in this study. Out of 20 students,13 are females (65%) and 7 are males (35%). This means that female students' opinions are slightly more represented in the results. This question aims to identify the gender distribution of the participants.

Q2. How old are you?

Figure 8

Age distribution of participants in the study



As shown in Figure 8 most of the participants are between 21 and 23 years old, with a total of 12 students in this age group. 6 students are between 18 and 20 years old, and only 2 participants are aged 24 or above. This distribution reflects the typical age range of third-year students at Chadli Bendjedid University. It also shows that the majority of the participants are in their early twenties, which may influence how they interact with AI chatbots in terms of motivation and familiarity with technology. This question aims to determine the age range of the participants.

Q3. What is your current level of English?

Figure 9

Students' current English proficiency levels

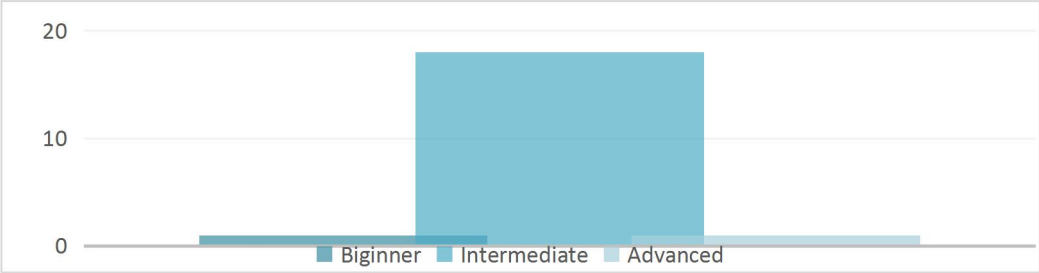


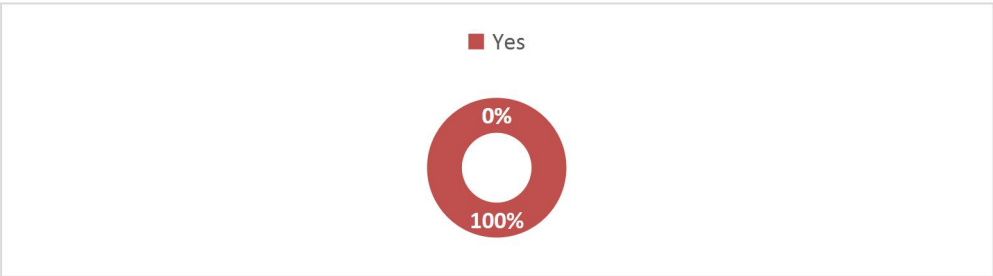
Figure 9 presents the students' English levels. Most of the participants identify their English level as intermediate. Eighteen out of twenty students consider themselves intermediate learners. Only one student describes their level as beginner, and another as advanced. This shows that the majority of the participants have a moderate command of English, which may allow them to interact with AI chatbots comfortably and understand their feedback without major difficulty. This question seeks to explore how students perceive their own English proficiency level

Section B: Uses and Benefits of AI Chatbots

Q4. Have you ever used AI chatbots before?

Figure 10

Students' previous experience with AI chatbots



This figure shows that all participants have used AI chatbots before. This means that every student in the sample has at least some experience with these tools in the context of English language learning. The fact that 100% of the respondents answered "Yes" suggests that AI chatbots are becoming increasingly common and accessible among EFL learners, especially at the university level. This question aims to find out whether students have any prior experience using AI chatbots.

Q5. If yes, how often do you use them?

Figure 11

Frequency of AI chatbot usage among students

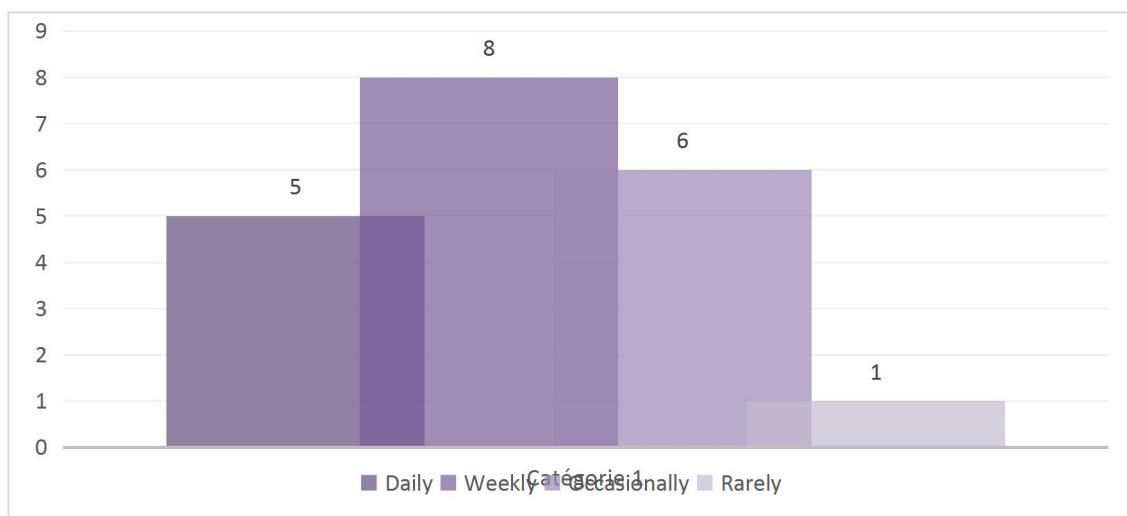
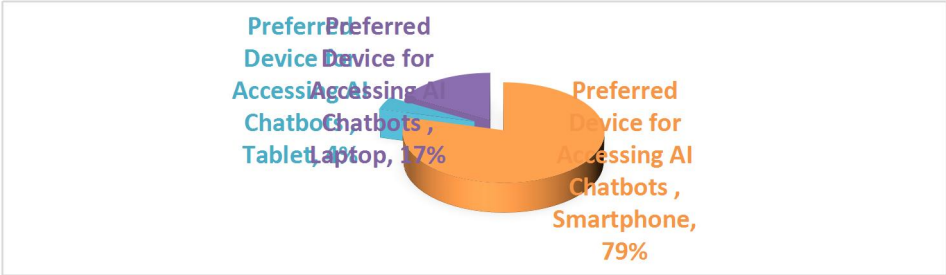


Figure 11 shows the frequency of AI chatbot Usage among students. The most common answer was “weekly,” with 8 students using them on a regular weekly basis. 6 participants said they use chatbots occasionally, while 5 reported daily use. Only one student stated that they use them rarely. These results show that the majority of students use AI chatbots frequently, which means they are becoming an important tool in their English learning process. This question aims to measure how often students rely on AI chatbots to support their language learning.

Q6. What type of device do you usually use to access AI chatbots?

Figure 12

Preferred Device for Accessing AI Chatbots

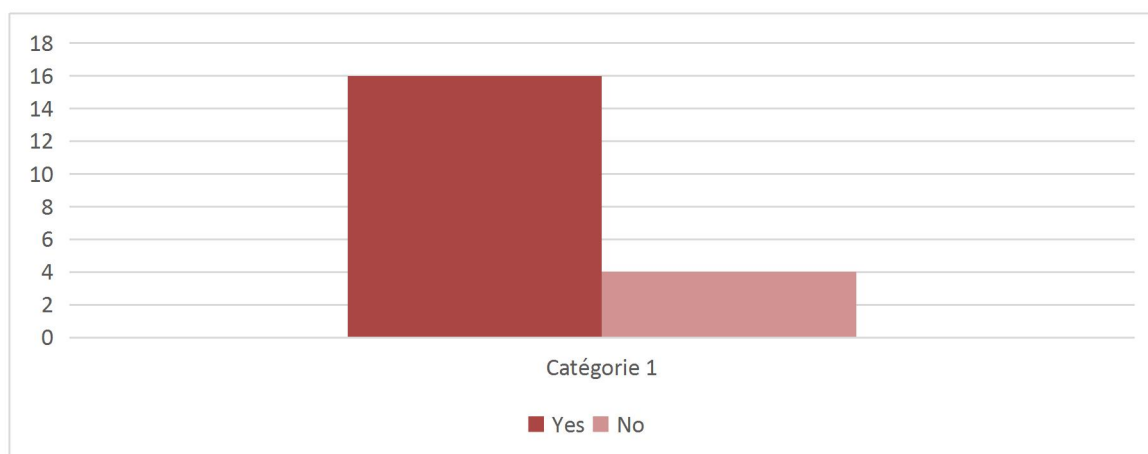


As shown in Figure 12, the majority of participants prefer using smartphones to access AI chatbots, with 19 out of 20 students (95%) choosing this device. Laptops are used by 4 participants (20%), while tablets are the least used device, selected by only 1 participant (5%). No other devices are reported. This indicates a strong preference for smartphones among EFL learners, likely due to their convenience, portability, and constant accessibility. The use of laptops and tablets is much less common, possibly reflecting limited availability or preference for more mobile-friendly options.

Q7. Do you use AI chatbots for other subjects besides English?

Figure 13

Percentage of learners using AI Chatbots in subjects other than English



The above question was designed to explore whether students use AI chatbots for purposes beyond English learning. Out of 20 participants, 16 (80%) indicate that they use AI chatbots for other subjects than English, while 4 (20%) do not. This shows that the majority of EFL learners are open to integrating AI tools into various areas of their academic or personal lives. Some students mention academic fields such as Science, Physics, and Linguistics, while others refer more generally to using chatbots “in everything”, “in real life”, or for Technology-related topics. This variety highlights the perceived flexibility and usefulness of AI chatbots beyond language learning. However, a few responses show confusion about the question, with some naming specific chatbots instead of academic subjects, suggesting that clearer instructions may be needed in future versions of the questionnaire.

Q8. How do you think AI chatbots help you improve your English?

Figure 14

Students' Perceptions of the Benefits of AI Chatbots in Enhancing English Language Skills

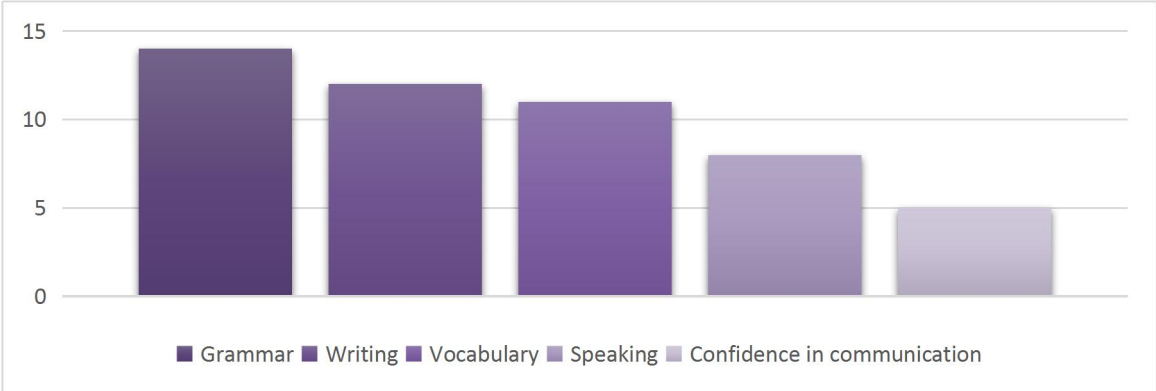


Figure 14 illustrates students' perceptions of the benefits of AI chatbots in enhancing their English skills. The majority of students (70%) reported that AI chatbots help them improve their grammar, followed by 60% who highlighted improvements in writing, and 55% who noted vocabulary development. A smaller percentage of students indicated that AI chatbots assist in developing speaking skills (40%) and boosting their confidence in communication (25%). These results suggest that learners primarily rely on AI chatbots to strengthen structural aspects of the language, such as grammar and writing. Although speaking and communication confidence were also mentioned, they appear to be less emphasized. This question aims to identify the specific areas in which students believe AI chatbots support their English language development.

Q9. What do you find most beneficial about receiving instant feedback from AI chatbots?

Figure 15

Students' Perceptions of the Benefits of Instant Feedback from AI Chatbots

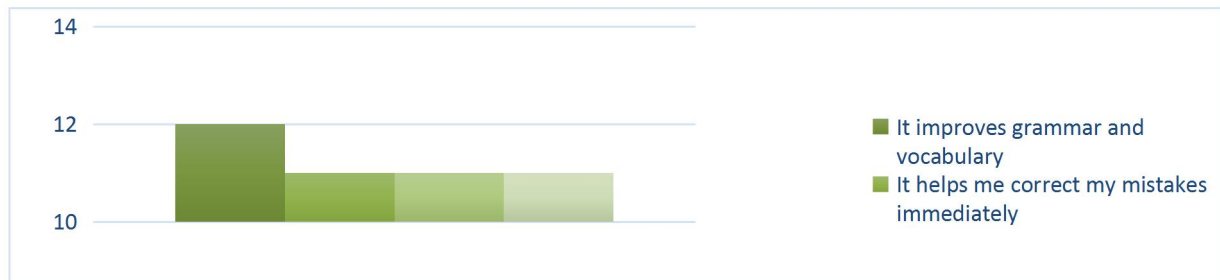


Figure 15 presents students' opinions on the benefits of instant feedback from AI chatbots. The most selected option was "It improves grammar and vocabulary" (12 responses), followed closely by "It helps me correct my mistakes immediately" and "It motivates me to continue practicing" (11 each). Only one student chose "It gives me confidence. This question aims to explore what students find most beneficial about receiving instant feedback from AI chatbots.

Q10. How do you think AI chatbots make learning English more engaging or enjoyable?

This question aim is to explore how AI chatbots make learning English more engaging and enjoyable for students. Students provided various reasons why they find AI chatbots engaging. Some participants mentioned that chatbots help them with their homework or provide complete answers to their questions, which make learning easier and more efficient. Others appreciated the fact that they can ask the chatbot about anything at any time. One student pointed out that chatbots offer a new perspective on learning, suggesting that the tool helps them see English differently and think in new ways. These responses show that learners

enjoy using AI chatbots not only because they are helpful, but also because they make the learning experience more dynamic and interactive.

Q11. Do you think that AI chatbots can help you learn English more effectively than traditional methods?

Table 1

Effectiveness of AI Chatbots vs. Traditional English Learning Methods

Response	Number of Students
Yes	8
No	5
Not Sure	7

From the table above, it was found that participants had different opinions on whether AI chatbots are more effective than traditional learning methods. Eight students answered “Yes,” stating that chatbots are more advanced than traditional teachers, provide extra information with examples, and help them improve their communication skills. Some also mentioned that chatbots do not judge their mistakes, which makes learning more comfortable and less stressful. On the other hand, five participants said “No,” with a few of them expressing concerns about incorrect answers and questioning the reliability of the information provided by chatbots. One student even pointed out that “modern learning problems need modern solutions,” suggesting that traditional methods might still be better suited in some situations. The remaining seven participants were not sure, and they did not provide any explanation for their answers. This mixed feedback highlights the diversity in learners’ experiences and perceptions when it comes to integrating AI into language education. This

question aims to explore how AI chatbots make learning English more engaging and enjoyable for students.

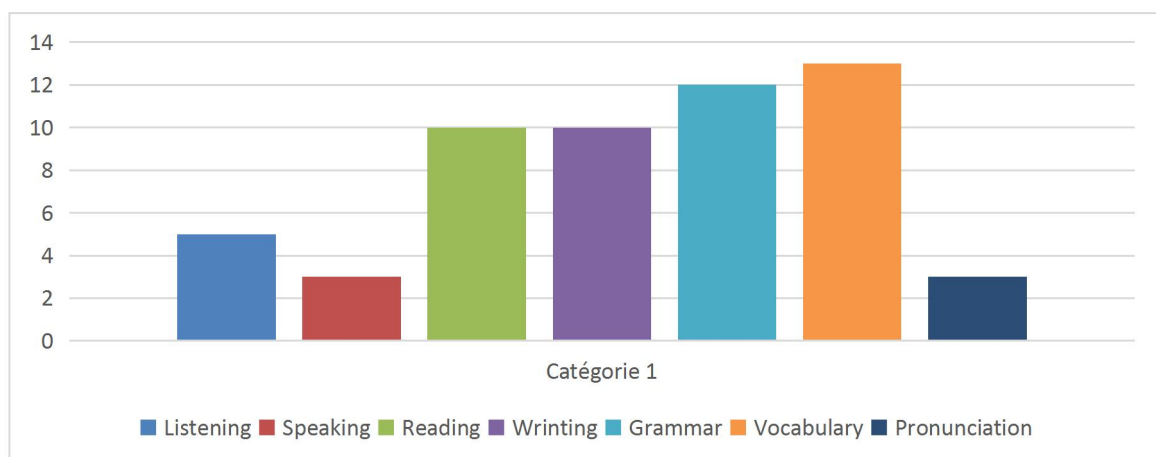
Q12. How do you use AI chatbots outside of class to reinforce what you've learned?

Students reported different ways they use AI chatbots outside of class to support their English learning. A few participants mentioned that they ask the chatbot for extra information when they don't fully understand a lesson. Others said they use it to help with their homework, to summarize lessons, or to review what they have already learned. One student said they use the chatbot to check if their words are correct. These answers show that students use AI chatbots in a variety of practical ways, especially to clarify, revise, and confirm their understanding.

Q13. What other skills do you think AI chatbots can help you practice?

Figure 16

Students' Views on Additional Skills Practiced Using AI Chatbots



As shown in Figure 16, vocabulary and grammar are the most practiced skills, with 13 and 12 responses respectively. Writing and reading were selected by 10 students each, while listening was mentioned by 5 participants. Speaking and pronunciation came last, with only 3

responses each. These results show that students tend to use AI chatbots more for written and receptive skills rather than oral communication. This question aims to identify which English language skills students focus on the most when interacting with AI chatbots during their independent learning.

Section C: Challenges of Using AI Chatbots

Q14. What are some challenges you face when using AI chatbots to learn English?

Students reported different challenges they face when using AI chatbots to learn English. Four participants mentioned that the chatbot sometimes does not understand their questions, which makes the interaction less effective. Some students reported technical issues, such as slow responses or connection problems, while others pointed out that some advanced features require payment, which limits their access to more detailed answers. However, three students stated that they do not face any significant challenges when using chatbots. This question aims to explore the difficulties learners may encounter when relying on AI chatbots for English language learning.

Q15. Are there any situations where AI chatbots are not helpful for your learning?

Please explain.

Although many students chose not to answer this question, five participants stated that there are situations where AI chatbots are not helpful in their learning. Some mentioned that chatbots do not provide clear sources or references, which makes it hard to fully trust the information. Others said they faced communication issues when the chatbot didn't understand their input. One student explained that using chatbots too much can lead to laziness. On the other hand, four students reported that they had not encountered any problems, indicating that their experience with chatbots has been generally positive. This question aims to identify the

specific situations in which AI chatbots fail to support learners effectively in their English learning journey.

Q16. Have you ever found it difficult to understand or communicate with AI chatbots?

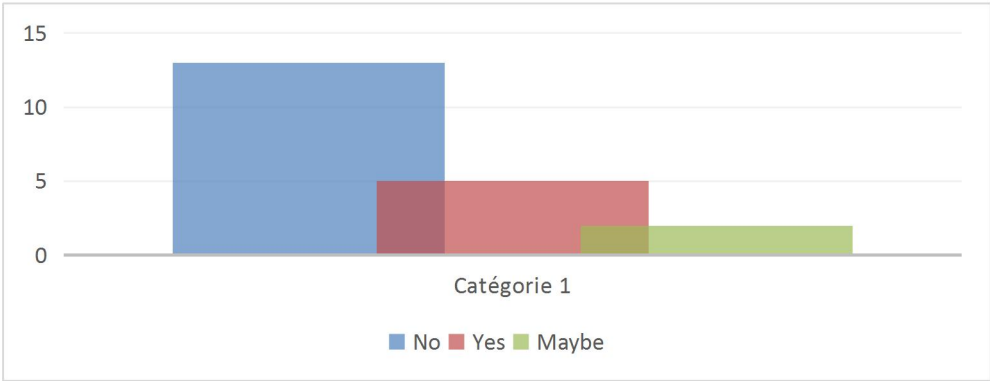
If so, how?

The majority of the participants (12 out of 20) stated that they had no difficulties, while 8 students reported having some problems. Most of those who responded did not provide any explanation, and only a few students briefly mentioned issues such as: the chatbot not understanding like a human, the use of difficult language, or giving irrelevant answers. This question aims to investigate whether students encountered difficulties when interacting with AI chatbots.

Q17. Do you think AI chatbots can replace human interaction in language learning?

Figure 17

Students' Views on AI Chatbots Replacing Human Interaction in Language Learning



As it shown in the figure above the majority of the participants (13 out of 20) answered “No”, expressing skepticism about the ability of AI chatbots to fully replace human tutors. A smaller group of students (5 out of 20) believed that AI chatbots could replace human interaction to some extent, while 2 participants were uncertain, answering “Maybe”.

This question aims to explore students' opinions about whether AI chatbots can replace human interaction in language learning.

Section D: Attitudes towards AI Chatbots as Tutors

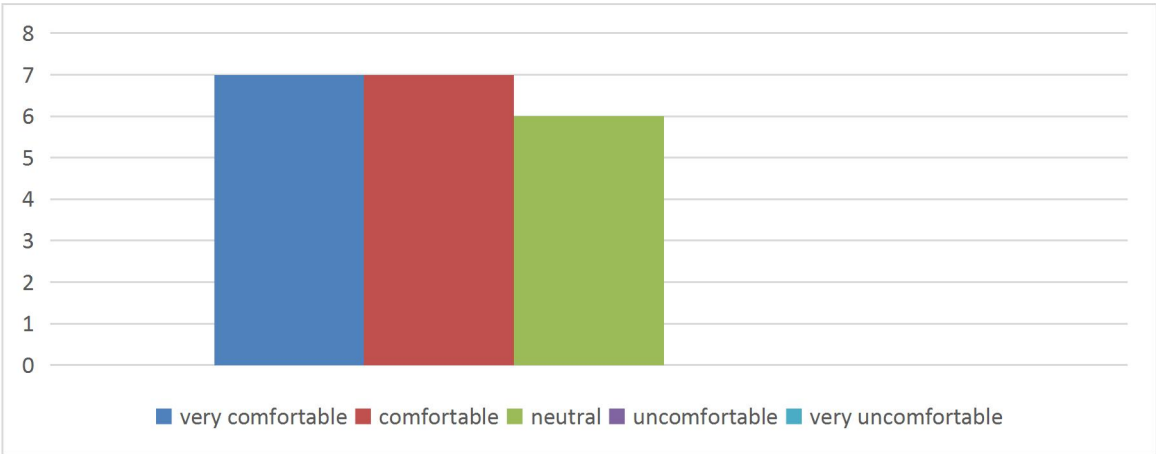
Q18.What motivates you to use AI chatbots as a learning tool?

This question seeks to identify the key motivations behind students' use of AI chatbots as learning tools. The answers varied. Some students mentioned curiosity as their main reason for using AI chatbots, highlighting their interest in exploring how this new technology could support their learning process. Additionally, four students stated that they use AI chatbots because they allow them to gain information quickly and save time, other answers included ease of use, the ability to process specific information related to English, and the fact that chatbots provide accurate answers.

Q19. How comfortable do you feel using AI chatbots to learn English?

Figure 18

Students' level of comfort and the responses were mostly positive



This question aims to assess how comfortable students feel when using AI chatbots as a part of their English learning experience. This figure presents students' level of comfort, and the responses were mostly positive. Out of 20 participants, 7 reported feeling very comfortable, and another 7 selected “comfortable”, suggesting that a significant portion of the students feel at ease when interacting with AI chatbots. Meanwhile, 6 students chose “neutral”, indicating that while they do not feel discomfort, they are not entirely confident either. None of the respondents reported feeling uncomfortable or very uncomfortable. These results reflect a growing familiarity and acceptance of AI tools in language learning among EFL students.

Q20. Do you think AI chatbots can replace human tutors in some cases? Why or why not?

Figure 19

The distribution of students’ opinions on whether AI chatbots can replace human tutors in some cases

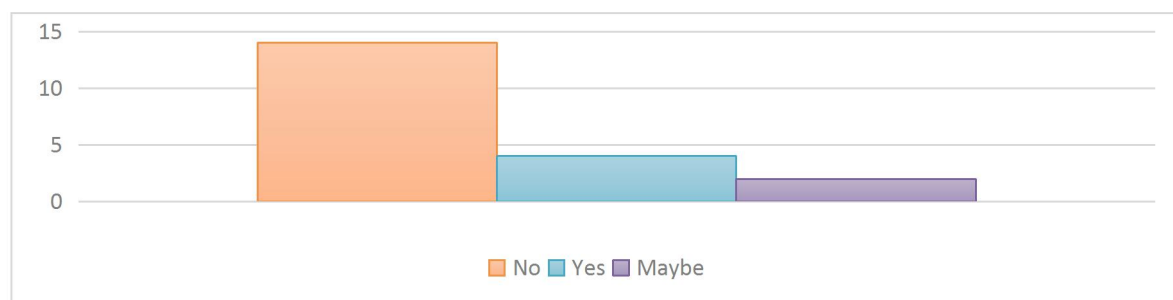


Figure 19 illustrates the distribution of students’ opinions on whether AI chatbots can replace human tutors in some cases. The results show that out of 20 participants, 14 answered “No”, indicating that most students do not think AI chatbots can replace human tutors. 4 students said “Yes”, and 2 students were unsure, selecting “Maybe”. Most participants did not provide justifications for their answers. However, a few remarks were noted. One student mentioned that AI chatbots do not get tired, which could make them more consistent than humans. Another student commented that humans are not as fast as chatbots, suggesting that

speed might be an advantage for AI in certain contexts. This question explores whether students believe that AI chatbots could replace human tutors in certain situations.

Q21. How effective do you think AI chatbots are in helping learners improve their English skills?

All 20 participants selected “*very effective*”, showing a unanimous agreement on the usefulness of AI chatbots in supporting English language improvement. This strong result reflects a high level of confidence among students in the role of AI chatbots as helpful tools for language learning. This question aims to measure students’ views regarding how helpful AI chatbots are in developing their English proficiency.

Analysis of Learners’ Interview

This part of the chapter illustrates the results of the semi-structured interviews that were conducted with eight third-year EFL students from the same academic group. These interviews aimed to gain in-depth qualitative insights into students’ personal experiences and perspectives on the use of AI chatbots in learning English. The interview protocol included six open-ended questions covering areas such as learners’ previous experience with AI chatbots, specific situations where these tools were helpful, perceived limitations, individualization of learning, comfort level, and suggestions for improvement. Through thematic analysis of their responses, this section explores the learners’ perceptions, challenges, and expectations regarding AI chatbots as virtual English tutors. The qualitative data offer a more nuanced understanding of how learners interact with these tools and how such technologies can be refined to better support their educational goals.

Q1: Have you ever used AI chatbots like ChatGPT to learn English? Can you describe your experience?

The majority of participants reported having used AI chatbots such as ChatGPT or other AI tools to support their English learning. Their experiences were generally positive. Learners like P1, P2, and P5 found them helpful for clarifying lessons, simplifying content, and learning at their own pace. Others (e.g., P3, P4) appreciated its speed and accuracy, although they acknowledged that its quality can vary depending on the AI platform used. However, some students expressed reservations. P6 was initially hesitant due to ethical concerns but later acknowledged the tool's usefulness. P8, a linguistics student, criticized AI's limited understanding of deep grammar and translation, especially between structurally different languages. Similarly, P7 described her first experience as shocking, expressing discomfort and distrust at how easily the chatbot could answer across fields. This shows a level of skepticism that some learners still carry, especially when unfamiliar with the technology. In general, while the majority saw clear benefits, a few participants revealed concerns about accuracy, ethics, or over-reliance, showing that student attitudes vary based on background and expectations and also their learning style.

Q2: Can you describe a specific situation where using an AI chatbot helped you solve a language problem or confusion?

Regarding the second question about specific situations where AI chatbots helped solve language problems. Participants One, Two, and Three reported that artificial intelligence tools assisted them in overcoming confusion encountered with their teachers, whether related to explanations, word meanings, or differing answers. The AI provided clarifications and alternative perspectives that enhanced their understanding. Participants Five and Six both emphasized that the AI was particularly useful for writing tasks, such as structuring essays and providing outlines. While participant Seven also confirmed that the AI helped correct a paragraph in their own writing style. In contrast, Participant Eight warned

that while AI is helpful for assignments and homework, it falls short when addressing deep linguistic structures, which most learners overlook. These responses demonstrate that AI chatbots can effectively assist in resolving language-related doubts and improving writing skills, though users should remain aware of the AI's limitations in handling complex linguistic aspects.

Q3: Are there any situations where you feel chatbots are not helpful for your learning?

Could you give examples?

Regarding the third question about the drawbacks and limitations of using AI chatbots, the participants expressed several concerns. Participants One, Two, and Five mentioned that overdependence and the full reliance on AI negatively affects and damages their creativity and personal effort. Participant One noted that constantly using AI made it harder to write essays independently, while Participant Two mentioned a decline in their critical and analytical thinking skills. These comments suggest that while AI can support learning, excessive use may hinder the development of important academic abilities. On another note, Participants Three, Six, Seven, and Eight pointed out issues related to the accuracy and consistency of AI-generated answers. Participant Three recalled receiving incorrect information that was later changed, which created doubt. Similarly, Participant Six described AI responses as sometimes confusing and inconsistent, stressing the importance of verifying content. Meanwhile, Participant Four brought up a different concern, stating that AI tools fall short in evaluating spoken language aspects such as emotion and tone, as they mainly focus on grammar and vocabulary. This suggests that despite its usefulness, AI cannot be fully trusted without critical. Although AI chatbots are powerful and beneficial, their limitations must be recognized to avoid misjudgments and to encourage balanced usage among learners.

Q4: Do you feel that AI chatbots understand your individual learning needs? Why or why not?

In response to the fourth interview question about whether AI chatbots understand learners' needs, most participants gave positive answers. Participants One through Six noted that AI tools seem to adjust their responses depending on how the learner interacts with them. For example, Participant One mentioned using an AI that provides feedback and tracks progress through follow-up tests. Participant Two appreciated how the chatbot could guide them to helpful sources when it couldn't directly answer a question. Participant Three highlighted the option to simplify language explanations to match their level. These examples suggest that learners feel AI can adapt to their needs in useful ways. On the other hand, Participants Seven and Eight were more skeptical. Participant Seven felt that AI lacks human emotions and cannot truly understand students the way a teacher can. Similarly, Participant Eight pointed out that the responses sometimes feel repetitive and too general, especially when dealing with advanced topics like linguistics. These responses suggest that while AI chatbots show significant potential in adapting to learners' input and assisting in language learning, their effectiveness still depends on how they are used and the nature of the user's query. The perceived "understanding" of AI is more about responsiveness and pattern recognition rather than true comprehension.

Q5: How comfortable are you using AI chatbots to learn English?

Most participants expressed a high level of comfort. Participants One to Five reported feeling very or fairly comfortable when interacting with AI tools. For example, Participant One simply stated being "very comfortable," while Participant Two found the experience manageable and noted that using English with the chatbot was easier than using French. Participant Three appreciated the lack of emotional judgment from AI, emphasizing that it

never gets annoyed or dismissive, unlike some teachers. Participant Six presented a more balanced view, explaining that their comfort level varied depending on the situation. They felt comfortable when receiving suggestions and academic help, but raised concerns about data privacy when inputting personal information. In contrast, Participants Seven and Eight reported discomfort with AI chatbots. Participant Seven criticized the quality of responses, saying that AI often provides incorrect or misleading answers. Likewise, Participant Eight noted that when posing very specific questions, the chatbot often returned overly general answers, which they found unhelpful. Overall, the findings suggest that while the majority of learners are comfortable using AI chatbots, especially for receiving academic support and explanations, certain issues persist. These include worries about data security and the inconsistency of AI-generated content. As such, learners' comfort levels appear to be influenced by both the context of use and the perceived reliability of the chatbot.

Q6: If you could design your own AI chatbot for English learning, what key features would you include to make it more helpful and personal?

Students expressed diverse opinions regarding this question. Several respondents, including Participants Two, Three, and Six, emphasized the need for chatbots to be more human-like, expressing a desire for emotionally aware and friendlier responses. Others, such as Participants One and Four, highlighted the importance of developing speaking and listening skills through interactive conversations, rather than focusing solely on writing. Additionally, Participants Five and Eight stressed the value of critical thinking and conceptual understanding, suggesting features like mind-mapping and deeper language analysis. Participant Three also proposed adapting the chatbot to different proficiency levels, while Participant Seven recommended features that encourage learners to put in more effort instead

of relying too heavily on AI. These overlapping ideas reveal a shared interest in making AI tools more personalized, interactive, and supportive of learner autonomy.

Conclusion

In this chapter, the data collected from both the questionnaire and the semi-structured interviews were analyzed using quantitative and qualitative methods. The questionnaire provided a general overview of third-year EFL students' experiences, uses, benefits, challenges, and attitudes towards AI chatbots in English language learning. Meanwhile, the interviews offered deeper insights into learners' personal perceptions, comfort levels, and expectations of AI as a virtual tutor. Together, these findings offer a comprehensive understanding of how AI chatbots are being integrated into EFL learning contexts and lay the foundation for the discussion and interpretation of results in the following chapter, where the research questions will be addressed and the validity of the hypotheses examined.

Chapter Five

Discussion

Introduction

This chapter provides a detailed discussion of the main findings presented in the precedent chapter. It aims to interpret the results by linking them to the research objectives and addressing the previously formulated research questions. The discussion seeks to confirm the initial hypotheses set at the beginning of the study. This chapter is structured according to the research questions, each of which is reformulated as a guiding statement. By analyzing the data from both the questionnaire and interview, the study aims to highlight what the results reveal about the use of AI chatbots as virtual tutors for EFL learners. Additionally, some suggestions and recommendations were proposed for further studies.

Discussion of the research questions and hypotheses

From the findings of the different data gathering tools, it is clear that students face both opportunities and challenges when using AI chatbots as virtual tutors. The collected data revealed valuable insights about their perceptions, experiences, and attitudes towards this new learning tool. In this section, each research question is addressed through a detailed discussion, linking the obtained results to the original hypotheses and to relevant studies discussed in the literature review. The questions are reformulated into guiding statements and discussed separately in order to better interpret the overall impact of AI chatbots on EFL learning.

The Perceived Benefits of Using AI Chatbots as Virtual Tutors for EFL Learners

The findings of this study confirm that AI chatbots offer several notable benefits for EFL learners, particularly in terms of support, language practice, and timely feedback.

According to the questionnaire results, the majority of the students reported that using chatbots has helped them improve their vocabulary and writing skills through frequent practice and exposure to new words. Many participants also emphasized that chatbots provided them with opportunities to interact in English more often, which is especially important in environments where English is not spoken daily.

The interview further reinforced these insights. Large number of students mentioned that the availability and responsiveness of chatbots allowed them to practice at any time, without feeling judged or rushed. This sense of freedom and privacy encouraged them to engage in trial-and-error learning, particularly in writing and reading. Importantly, some learners appreciated the instant corrections offered by chatbots, which helped them notice and fix their language mistakes immediately—an element that supports the first research hypothesis, which states that chatbots provide significant support through immediate feedback and practice.

Overall, both the qualitative and quantitative findings suggest that AI chatbots can function as effective supplementary tools for language practice and feedback, especially in EFL contexts where classroom exposure to English is often limited. The learners' experiences indicate that the integration of chatbots in their learning routines contributes positively to their skill development and confidence.

Challenges Faced by EFL Learners When Interacting with AI Chatbots

While AI chatbots offer valuable support for language learners, the data collected from both the questionnaire and interviews revealed several notable challenges that EFL learners encounter during their interactions with these tools. A significant number of students reported experiencing technical difficulties, such as slow internet connections, device compatibility

issues, or system errors, which sometimes prevented them from fully benefiting from the chatbot's features. These issues often disrupted their learning flow and made the experience less engaging.

In terms of linguistic difficulties, many learners highlighted that the chatbot responses were sometimes too advanced or not fully adapted to their proficiency level. Some participants in the interviews admitted that they struggled to understand the chatbot's replies, especially when it used complex vocabulary or informal expressions. This occasionally caused confusion or frustration, discouraging further interaction.

Additionally, roughly half of the participants mentioned that the lack of voice interaction was a limitation, as they wanted to improve their speaking skills but were restricted to written input. Others noted that chatbots often provided generic feedback without deeper explanations, making it harder to understand their mistakes or how to correct them effectively.

These challenges reflect the validity of the second hypothesis, which proposes that EFL learners may face technical or linguistic barriers when using AI chatbots. While the overall perception of chatbots was positive, these limitations highlight the need for improved adaptability, user interface design, and support for various skill levels to make virtual tutoring more effective and inclusive.

Learners' Perceptions of the Effectiveness of AI Chatbots as Virtual Tutors

The responses gathered from both the questionnaire and interviews reveal that the majority of EFL learners perceive AI chatbots as effective and beneficial tools for enhancing their language skills. A large proportion of students acknowledged that using AI chatbots provided them with additional opportunities for practice, particularly in writing and

vocabulary. The chatbots were described as accessible, non-judgmental, and available at any time, which encouraged learners to use English more frequently outside the classroom setting.

Interview participants also emphasized the personalized interaction they experienced with chatbots, noting that the technology helped them feel more comfortable expressing themselves in English without the fear of being corrected in front of others. This aligns with the idea that chatbots reduce performance anxiety and foster a safe learning space. Several students mentioned that chatbots supported their autonomous learning, allowing them to progress at their own pace and explore topics of interest in English.

However, while the majority of students considered chatbots to be helpful, a few expressed concerns about their limitations in providing deep explanations or adaptive responses. Still, these concerns did not outweigh the overall positive perception. The findings confirm the third hypothesis, as the majority of learners viewed AI chatbots as useful and effective tools for language learning. They appreciated the role of virtual tutors in reinforcing classroom instruction and promoting independent study habits.

Pedagogical and Practical Implications

- The results of this study suggest that AI chatbots should be integrated into EFL programs in higher education to provide learners with additional opportunities for language practice beyond the classroom.
- Learners' positive perceptions of AI chatbots indicate that these tools can play a valuable role in enhancing engagement, motivation, and independent learning among EFL students.

- AI chatbots can help address diverse learner needs by offering personalized interaction, allowing students to progress at their own pace and focus on individual areas of difficulty.
- The use of chatbots in language education can reduce teachers' workloads by handling repetitive tasks such as vocabulary drills, thus allowing instructors to concentrate on more complex and interactive classroom activities.
- Developers and instructional designers should improve chatbot performance by addressing issues such as limited contextual understanding and shallow feedback.
- Enhancing chatbot features with multimodal elements like voice input or visual aids could significantly improve learners' overall language experience and understanding.
- Institutions should invest in digital literacy training to ensure that both students and teachers can effectively interact with AI tools and make the most of their educational benefits.
- The increasing role of AI in education highlights the need for universities to continuously update their pedagogical strategies and digital infrastructure to adapt to technological changes.
- Collaborative efforts between educators, developers, and policymakers are essential to ensure the successful and pedagogically sound integration of AI chatbots into EFL instruction.

Suggestions and Recommendations

Based on the key findings of this study, a number of suggestions and recommendations are proposed to improve the use of AI chatbots in EFL learning contexts. These practical insights aim to assist educators, institutions, and developers in addressing the challenges encountered and enhancing the benefits observed.

- Encourage the Integration of AI Chatbots in Language Curricula: Universities and EFL departments should consider including AI chatbots as part of the official teaching tools to enhance learners' practice, especially outside classroom hours.
- Provide Training for Students on Effective Chatbot Use: Many students face difficulties in fully utilizing chatbots due to a lack of technical or strategic knowledge. Brief training sessions can help them use the tools more efficiently.
- Improve Accessibility and Interface Design: Developers should work on making AI chatbots more user-friendly, especially for non-native speakers, by simplifying interfaces and allowing more flexible language input.
- Ensure Continuous Feedback Mechanisms: Since learners value immediate feedback, it is recommended that chatbots be designed to offer more accurate, diverse, and context-aware feedback on grammar, vocabulary, and fluency.
- Address Technical Limitations and Misunderstandings: Institutions should provide technical support to help learners overcome connectivity or AI-related misunderstandings, which were among the most cited challenges in this study.
- Promote Blended Learning Approaches: Teachers are encouraged to combine chatbot use with human instruction. While chatbots are helpful for practice and repetition, teacher-guided activities are essential for deeper communication skills and cultural understanding.
- Encourage Learner Reflection and Autonomy: Students should be encouraged to reflect on their learning progress and set goals when using AI chatbots, which supports the development of learner autonomy.
- Conduct Further Research on Long-Term Use: Future studies could explore how long-term interaction with AI chatbots influences language proficiency, motivation, and retention among EFL learners.

- Adapt AI chatbot interaction styles to include more cultural and linguistic sensitivity, especially for beginners or lower-proficiency learners.
- Encourage collaboration between software developers, language educators, and linguists to design more pedagogically effective chatbots.
- Explore the use of AI chatbots in different language skills (e.g., reading, writing, listening) beyond speaking and vocabulary to expand their utility.
- Promote learner autonomy by encouraging students to use AI chatbots outside of the classroom for self-directed learning and revision.

Conclusion

This chapter has discussed the main findings of the dissertation in relation to the research questions and hypotheses. Additionally, it provided a summary for the practical part of the study as well as a set of practical suggestions and recommendations aimed at enhancing the integration and effectiveness of AI chatbots in EFL learning contexts. These insights are intended to support educators, institutions, and developers in optimizing chatbot-based language learning. In conclusion, this study sheds light on the growing role of AI chatbots in language education and highlights both their potential and limitations.

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Appendices

Appendix A

Students' Questionnaire

Dear participant,

I am a master 2 student currently conducting research for my graduation project, which focuses on the topic *"AI Chatbots as Virtual Tutors: Benefits and Challenges for EFL Learners."* This questionnaire aims to gather your opinions and experiences regarding the use of chatbots in learning English as a foreign language. Your responses will be used for academic purposes only and will remain completely confidential. Please answer the following questions honestly. Thank you for your time and participation!

Section One: Background Information

1. What is your gender?

- Male Female

2. How old are you?

- 18–20 21–23 24 or above

3. What is your current level of English?

- Beginner Intermediate Advanced

Section Two: Uses and Benefits of AI Chatbots

4. Have you ever used AI chatbots before?

- Yes No

5. If yes, how often do you use them?

Daily Weekly Occasionally Rarely

6. What type of device do you usually use to access AI chatbots?

Smartphone Laptop Tablet Other: _____

7. Do you use AI chatbots for other subjects besides English?

Yes No

→ If yes, which ones? _____

8. How do you think AI chatbots help you improve your English?

Speaking fluency Vocabulary expansion Grammar accuracy

Writing skills Confidence in communication

9. What do you find most beneficial about receiving instant feedback from AI chatbots?

It helps me correct my mistakes immediately It gives me confidence

It improves my grammar and vocabulary

It motivates me to continue practicing

10. How do you think AI chatbots make learning English more engaging or enjoyable?

11. Do you think that AI chatbots can help you learn English more effectively than traditional methods?

Yes No Not sure

If yes or no, please explain why?

12. How do you use AI chatbots outside of class to reinforce what you've learned?

13. What other skills do you think AI chatbots can help you practice?

Listening Speaking Reading Writing Grammar Vocabulary Pronunciation

Section Three: Challenges of Using AI Chatbots

14. What are some challenges you face when using AI chatbots to learn English?

15. Are there any situations where AI chatbots are not helpful for your learning? Please explain.

16. Have you ever found it difficult to understand or communicate with AI chatbots? If so, how?

17. Do you think AI chatbots can replace human interaction in language learning?

Section Four: Attitudes towards AI Chatbots as Tutors

18. What motivates you to use AI chatbots as a learning tool?

19. How comfortable do you feel using AI chatbots to learn English?

Very comfortable Comfortable Neutral

Uncomfortable Very uncomfortable

20. Do you think AI chatbots can replace human tutors in some cases? Why or why not?

21. How effective do you think AI chatbots are in helping learners improve their English skills?

Appendix B

Students' Interview

I am conducting this piece of research, which explores how AI chatbots like ChatGPT are used as virtual tutors for EFL learners. Your answers will remain confidential and will only be used for academic purposes.

- 1.** Have you ever used AI chatbots like ChatGPT to learn English? Can you describe your experience?
- 2.** Can you describe a specific situation where using an AI chatbot helped you solve a language problem or confusion?
- 3.** Are there any situations where you feel chatbots are not helpful for your learning? Could you give examples?
- 4.** Do you feel that AI chatbots understand your individual learning needs? Why or why not?
- 5.** How comfortable are you using AI chatbots to learn English?
- 6.** If you could design your own AI chatbot for English learning, what key features would you include to make it more helpful and personal?

Thank you for your cooperation