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Exploring Master One Students' Perceptions of Using Artificial Intelligence (AI) Chatbots as Learner-Autonomy or Dependence Promoting Tools

This dissertation is submitted to the Department of English for the fulfilment of the requirements for a Master's degree in Didactics

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Dedications

I dedicate this graduation to my parents, the dearest thing I possess. You have been my loving support throughout my academic journey. Thank you for your immense sacrifices, you were the light that illuminated my path and the motivation that urged me to move forward. I have been told that I was the wish to come after four brothers and I always felt as one. Thank you for being the parents that would anyone dream of. To Kamel and Brahim my elder brothers whom showed me respected me to the point of feeling I am their elder sister. You openness to me and welcoming made me feel always loved and confident enough to come back to you whenever needed. To my brother Oussama, thank you for your patience and understanding, and for your wise pieces of advice. Although the long geographical distance, you have been present though it all Thank you the unforgettable moments we shared together. Thank you for your pure love and for your warm feelings that make me feel safe and happy. To Bidjad, even though you might not seem to have much in the way of worldly possessions, your love has always been a bottomless well for me. It fills me with a deep sense of satisfaction that nothing else can match. Thank you for the different kinds of love, care, and support you have offered throughout my journey. To my one and only sister Chaimaa, my other half . you grew up in front of me wishing no harm could ever touch you. I wish seeing you growing up to be the best version of yourself; make your elder sister proud. To kheira, I am so grateful to have you in my life, you have been my second sister .Thank you for being a life-long friend and companion on the path.

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Abstract

This study explores Master one students' perception of using artificial intelligence chatbots as learner-autonomy or dependence promoting tools. To test the hypotheses, an exploratory research with a mixed-method approach was opted for. A structured questionnaire was handed in person to forty two master one EFL majors in both Didactics and Linguistics at the English Department in Ibn Khaldoun University, Tiaret, Algeria. An online and structured interview was sent to three teachers working at the same department. The quantitative and qualitative analyses of the collected data showed that Master one students perceive the AI chatbots as assistant for self-directed learning. It is also clear that students are aware of the risks of the significant dependence on these chatbots. Therefore, these tools must be supervised and ethically used to maintain control over the learning process. This research ends up with discussion, implications, and some recommendations.

Keywords: Artificial intelligence, autonomy, Chatbots, dependency , perception

List of Tables

Table3.1: The students' age	54
Table3.2: The students' gender.....	55
Table3.3: The students' major	56
Table3.4: Top AI pick for students	57
Table3.5: The frequency use of AI chatbots	59
Table3.6: Utilization and selection of AI chatbots.....	62
Table3.7 AI in education: A helping hand	64
Table3.8: AI chatbots: Impacts and concerns	66
Table3.9: AI chatbots : Learning enhancement and reflection	68

List of Figures

Figure3.1:The students‘ age	53
Figure3.2:The students‘gender	55
Figure3.3:The students‘major.....	56
Figure3.4:Top AI pick for students.....	58
Figure3.5:The frequency use of AI chatbots	60
Figure3.6:Utulization and selection of AI chatbots	63
Figure3.7:AI in education :A helping hand	64
Figure3.8:AI chatbots:Impact and concerns	67
Figure3.9: AI chatbots:Learning enhancement and reflection.....	69

List of Abbreviations and Acronyms

AI: Artificial Intelligence

APPS: Applications

AR: Augmented Reality

ATMS: Automated Teller Machines

BOTS: Robots

DAPRA: Defence Advanced Research Project Agency

E-commerce : Electronic Commerce

EFL :English as Foreign Language

E-mail : Electronic Mail

Etc : Et Cetera

G-mail : Google Mail

ICT :Information and Communication Technology

IEEE: Institute of Electronic and Electronics Engineers

Lge: Language

MESRS: Minister of Higher Education and Scientific Researches

MIP: Microsoft Information Protection

MIT: Massachusetts Institute of Technology

M1: Master one

NLP : Natural Language Processing

SMS : Short Message Service

UK: United Kingdom

UNICEF: United Nations International Childrens'Emergency Fund

UNSW: The University of New South Wales

US: United States

USA: United States of America

Table of Contents

Dedications	I
Acknowledgments	II
Abstract	III
Liste of tables	IV
Liste of Figures	V
Liste of Abbreviations and acronyms	VI
Table of Contents.....	VII
General Introduction	01
Chapter One: Conceptual Underpinnings of Artificial Intelligence and Chatbots	05
Introduction	06
1.1 The Definition of Artificial Intelligence (AI)	06
1.1.1. A Historical Conceptual Evolution of AI	07
1.1.2. Importance of Artificial Intelligence	10
1.1.2.1 Human Lifestyle	10
1.1.2.2 General Health Management	11
1.1.2.3 Banking and Financial Business.....	12
1.1.2.4Manufacturing	13
1.1.2.5 Education.....	14
1.1.3. Advantages and Disadvantages of AI.....	16
1.1.3.1The Benefits of AI	16
1.1.3.2 The Drawbacks of AI.....	18
1.1.3.3AI Algorithms: Types and Functions	20
1.2AI Chat Bots	20
1.2.1Definition of a Chat Bot	20
1.2.2.Types of AI chatbots.....	21
1.2.3Examples of AI chatbots and their Functions.....	22
1.2.3.3The Chat Bot Eliza	22
1.2.3.4The Chat Bot Parry	23

1.2.3.5 The Chatbot Siri.....	23
1.2.3.6The Chatbot Alexa	24
Conclusion	24
Chapter Two: AI Chatbots Use in Algerian and Foreign Universities	25
Introduction	26
2.1. Chatbots in International Higher Education Institutions	26
2.1.1 University Teachers and Students‘ Use of AI Chatbots.....	28
2.1.1.1 The teachers‘ Use of AI Chatbots and The reasons behind	29
2.1.1.2 The students‘ Use of Chatbots and The reasons behind	31
2.1.2 Most Frequently Used Chatbots among Students and Teachers.....	32
2.1.3 Mostly Used Chatbots within Universities.....	35
2.1.4 Ethical Considerations for Using AI Chatbots	38
2.2. AI chatbots in the Algerian Universities.....	40
2.2.1 AI implementation into all Sectors: Start off	40
2.2.2 Algerian Intellectual Capital for Glocal Leadership.....	40
2.2.3 AI Promotion in Algerian Higher Education and Scientific Research	41
2.2.4 AI Promotion by the University of Skikda	42
2.2.5 AI Promotion by the University of Mohamed Boudiaf	43
2.2.6 Algeria‘ s National AI Enhancement Strategy	43
2.2.7 AI in Algerian Universities: Challenges and Ambitions.....	44
Conclusion	46
Chapter Three: Research Methodology, Results and Discussion	48
Introduction	49
3.1 Research design and methodology	49
3.1.1 Mixed Method Approach.....	49
3.1.2 Participants‘ context and Sampling Techniques	50
3.1.3 Data Collection Methods and Procedures	50

3.1.3.1 Master One Students Questionnaire	50
3.1.3.2 The Teachers Interview.....	51
3.1.4 Data Analysis Methods and Procedures	51
3.1.4.1 Quantitative Data Analysis Technique.....	52
3.1.4.2 Qualitative Data Analysis Techniques	52
3.1.5 Ethical considerations.....	52
3.1.6 Limitations of the research	53
3.2 Results/ Findings	53
3.2.1 The Students' Questionnaire Result	53
3.2.2 Section 01: Biographical Information	53
3.2.1.2 Section 02: AI chatbots Use	57
3.2.1.3 Section 03: Challenges and Improvements	60
3.2.1.4 Section 04: Students' use of AI chatbots: Learning Autonomy/ Dependency	62
3.2.2 The teachers Interview Results	70
3.2.2.1 Discussion of Interview obtained Results	74
3.3 Discussion	74
3.3.1 AI Chatbots as Learning Autonomy Promoting Tools	75
3.3.2 Students' Awareness of AI Chatbots Support	75
3.3.3 AI Integration Acceptance among Teachers and Students	75
3.4 Recommendations	76
Conclusion	76
General Conclusion	77
References	80
Appendices	

GENERAL INTRODUCTION

General Introduction

Context / background of the study

The educational landscape in Algerian universities is witnessing a radical transformation with the integration of artificial intelligence technologies. One of the most promising developments is the emergence of AI-powered chatbots -virtual assistants designed to interact with students and provide them with different forms of support in their educational journey-. These chatbots can answer questions, clarify complex concepts, provide personalized feedback, and even guide students through learning activities. This increase in AI-powered chatbots within Algerian universities has recently sparked discussions about their potential impact on student learning. Some of today's students praise their effectiveness as encouragers of self-directed learning. These chatbots act as on-demand tutors by providing instant feedback and quick access to information. Furthermore, it provides a dynamic platform for engagement that caters to all learning styles and preferences empower the learners to take ownership of their learning process. However, others raise concerns about these chatbots fostering overreliance and hindering the development of crucial self-directed learning skills. They worry that they may become overly dependent on chatbots for academic or educational help and may also lose the motivation or initiative to explore information and solve problems independently. This potential attraction towards these AI powered chatbots can ultimately hinder the development of critical thinking and self-management skills necessary for lifelong learning.

Purpose of the study

This research seeks to understand students' perceptions of AI chatbots in educational settings, and also in order to analyse the extent to which AI chatbots contribute to or detract from learner autonomy. Moreover, it aims to identify factors influencing students' effective use of AI chatbots as a learning support.

Research questions and hypotheses

Based on the previously mentioned information, the present research aims to respond to the following questions, and for each of the three study questions, we have developed three possible hypotheses (possible answers)

- ❖ **Q1** How do first- year Master students perceive the use of AI chatbots in their learning process?
- ❖ **H1** First-year Master students may perceive AI chatbots as valuable tools for promoting learner autonomy by providing instant , personalized feedback.
- ❖ **Q2** In what ways do AI chatbots promote or hinder Master one students‘ learning autonomy?
- ❖ **H2** First-year Master students‘ excessive use of AI chatbots may lead to a decrease in learner autonomy, as they may become totally reliant on getting ready-made answers and solutions.
- ❖ **Q3** What factors would influence first-year Master students‘ AI use effectiveness in promoting learner autonomy?
- ❖ **H3** If appropriately used abiding with ethical regulation; AI chatbots can possibly be an effective support in promoting learner autonomy.

Research Design and Methodology

In order to respond to the study questions and fulfil the objectives above, this study goes for a mixed methods that gathers both quantitative and qualitative approaches. This study uses two data instrument; a students‘ structured survey consisting of forty-two participants of Master one EFL majors in both Didactics and Linguistics at Ibn Khaldoun university and teachers‘ structured interview containing three teachers at the same research context.

Significance of the study

This study aims to find out whether Master one students of linguistics and didactics perceive AI chatbots tools as enhancing the learner’s independence or make him entirely reliant on them. This study is important for both teachers and artificial intelligence developers because it provides valuable insights into how to make optimal use of artificial intelligence chatbots to empower students in their educational journeys, in other words. This research can contribute to the development of automated chats that operate with artificial intelligence to support students‘ self-learning in a more morally responsible way.

Structure of the dissertation

This thesis is divided into two parts : theoretical and practical part .first part consists of two chapters . The first chapter dives into prior studies on the subject, it is dedicated for literature review about the notion of AI (the definition of AI, its historical background, the importance of AI, its advantages and disadvantages , AI algorithms types and functions ,the definition of AI chatbots within the types and examples about those types).Then, Chapter two explores the use of AI chatbots in universities, among students ,teachers and the reasons, then we move to the mostly used chatbots within universities and the ethical considerations for using AI chatbots. Moreover, we finish this chapter with the integration of AI chatbots in Algerian universities. The third chapter starts with an introductory paragraph that represents the main components we have tackled in the chapter. Then, there comes the research design and methodology, where we about the mixed method approach that we opted for, plus describing our sample. It also tackles the data collection and data analysis procedures. Then, we stressed the ethical consideration and the limitation of the research. After that, we revealed the results and findings with a fair discussion. Last but not least we had some recommendation and suggestions to talk about. Then, we ended the chapter by a general conclusion.

Chapter One:

**Conceptual Underpinnings of Artificial Intelligence
and chatbots**

**Chapter One: Conceptual Underpinnings of Artificial
Intelligence and Chatbots**

Chapter One: Conceptual Underpinnings of Artificial Intelligence and Chatbots**Introduction**

In the midst of a massive technological revolution that is engulfing our world, artificial intelligence (AI) is emerging as a revolutionary force that challenges the boundaries of the ordinary and redraws the map of our future. This term is no longer limited to science fiction movies, but has become a tangible reality that permeates various aspects of our lives. We set out to explore what artificial intelligence is and shed light on its journey through the history, from its origins as a fictional idea in ancient times to its transformation into a tangible reality that shapes our present and determines our future. We will delve into the details of its various applications with its potential of creating a qualitative shift in various fields such as: healthcare, finance and education. Plus its many benefits that enrich various sectors. We will also discuss its potential challenges and impact on the future of humanity. Then, we move on to the core functionality of the AI which is its algorithms. Then, ending up with what does chatbot mean, the types it falls under and some of real application of AI chatbots.

1.1 The Definition of Artificial Intelligence (AI)

—A common definition of AI is that it is a technology that enables machines to imitate various complex human skills (Sheikh, Prins & Schrijvers, 2021, p.15). We can conclude that, artificial intelligence is a field of computer science that replicates sophisticated human skills. This empowers machines to develop human-like abilities in learning, problem-solving, and respond to their environment.

—The art of creating machines that perform functions that require intelligence when performed by people. (Kurzweil, 1990, as cited in Russell & Norvig, 2010, p.02). It maintains that, the field of artificial intelligence can be considered the art of engineering machines to intelligently handle tasks that were previously considered the preserve of the human mind. This requires the skill of designing machines to mimic human thought processes in order to automate complex tasks.

—Computational Intelligence is the study of the design of intelligent agents. (Poole et al., 1998, as cited in Russell & Norvig, 2010, p.02). It claims that an intelligent agent is a computer program or system that has some capabilities that are similar to human intelligence. Computational intelligence aims to explore and develop algorithms and programming

methods that allow machines to behave intelligently, allowing them to solve complex problems and interact with the world in an efficient manner.

—Artificial Intelligence refers to the science and engineering used to make smart systems, in computer science domain which helping in technological advancements. It is the replica of how the human intelligence works but it does not deliver the methods that are biologically observable (Aiken, & Epstein, 2000, as cited in Mahato,2022,p.197).). It takes the view that artificial intelligence emerges from the womb of computer science and engineering, forming an important scientific field concerned with developing intelligent systems that mimic human skills in solving problems and acquiring knowledge. These systems differ from the human brain in their mechanism of operation, as they do not rely on directly copying biological processes, but rather rely on complex algorithms that enable them to learn and adapt to changes and make decisions.

—The study of the computations that make it possible to perceive, reason, and actl .(Winston, 1992,as cited in Russell& Norvig,2010,p.02). In a different meaning AI is a branch of computer science concerned with creating intelligent machines that mimic human mental capabilities. This includes areas such as machine learning, natural language processing, computer vision, and robotics. AI aims to make machines capable of performing tasks that typically require human intelligence.

—Artificial Intelligence (AI) is the part of computer science concerned with designing intelligent computer systems, that is, systems that exhibit the characteristics we associate with intelligence in human behaviour understanding language, learning, reasoning, solving problems, and so onl (Barr& Feigenbaum,1981). These scientists stated that the artificial intelligence (AI) is one of the most interesting research and application areas within computer science today. It is concerned with designing and developing computer systems that have a degree of intelligence that enables them to simulate the cognitive and behavioral capabilities associated with human intelligence. This includes many areas, such as: understanding natural language, machine learning from big data, logical thinking, solving complex problems, and the ability to adapt to changing situations.

1.1.1. A Historical Conceptual Evolution of AI

Over the past few decades the term artificial intelligence (AI) has gained endemic recognition and became widely employed by individuals from all walks of life. Yet its definition remains surprisingly elusive.

Artificial intelligence does not emerge from a vacuum, but rather it is a fruit that has ripened on the tree of knowledge over the ages. Its first seeds were planted in the womb of ancient philosophy, and the imaginations of scientists and researchers throughout history have been fed by its radiance. In addition, tremendous developments in fields such as electronics, engineering, and mechanics have played a pivotal role in providing fertile ground for the emergence of artificial intelligence. Early innovations in these areas have been used to develop experimental programs in a variety of areas, including language understanding, memory association, and the development of comprehensive systems. Therefore, we can say that artificial intelligence is the accumulated product of intellectual and philosophical efforts, scientific imagination, and engineering developments over the ages (Arivudainambi & Visu,2019,as cited in Mahato,2022,p. 197)

The concept of the AI was first introduced by its pioneers, later on it was refined by many other scientists and researchers of the field, each one clarifying it according to his own expertise and perspective.

First of all, the founders of artificial intelligence held divergent views on what constitutes the AI. —Alan Turing made the most widely spread definition of AI: the so-called Turing‘ test. It is quite simple. We place something behind a curtain and it speaks with us. If we can’t make difference between it and a human being, then will be AI. However, this definition is not formal“(Turing,1936; Turing, 1948; Turing,1950, as cited in Doberv,2004,p.01)

Alan Turing was an English mathematician and computer scientist. He significantly contributed in the development of theoretical computer science. The initial spark was ignited by his curiosity when he gave life to the most known question _‘Can machine think?“. This question paved the way to Alan Turing’s paper —Computing Machinery and Intelligencel, where he launched what is today known as the Artificial Intelligence (McGuire,2006,p.05). The Turing test originally the imitation game is a conversation that gathers three players or participants: a human being, a computer, and a human judge. The computer wins the game or passes the Turing test if the human judge cannot consistently tell the difference between the human and the computer_s answer. This test helps us see how good computers are at mimicking human conversation and the way of understanding. It is a way to measure how smart a computer can be and see its ability to think and talks like a human being.

John McCarthy is considered to be a prominent figure in the field of the AI. Who coined the term of artificial intelligence when he held the first academic conference in the summer of 1956 called Dartmouth conference (Smith,2006,p.04).

He has proposed a different perspective on the definition of it, as outlined in a paper titled —what is AI. In his paper he defines it as follows: —It is the science and engineering of making intelligent machines, especially intelligent computer programs (McCarthy,2004). In another word, AI is about developing and creating machines that can learn, think, reason, and act like human beings, which means, processing theoretical models into practical ones.

Furthermore, another scientist, a German scientist named Frank Rosenblatt made a major contribution to the field of the AI. When he gave birth to the idea of perceptron when he asked himself —what are the minimum numbers of things that a brain has to have physically in order to perform the amazing things it does (Lefkowitz,2019). This scientist who died before he sees his work become true has written back in 1958 an article saying —yet we are about to witness the birth of such a machine capable of perceiving, recognizing, and identifying its surroundings without any human training or control (Rosenblatt,1958,as cited in Lefkowitz,2019) Rosenblatt had that dream of making a machine understand a language without any human fingerprint (Lefkowitz,2019).

A new year means new scientists or new contributions to the field. Samuel Arthur is best known within pioneering work of computer checkers. This scientist saw that teaching computers to play the game of checkers is an effective tool for developing appropriate tactics for solving complex problems (Wiederhold, McCarthy,1992).

He chose the checkers game because of its relative ease, while it conceals within it a strategic depth that allows testing the computer's ability to think logically and develop solid plans. Therefore, he saw this game as an ideal arena to test and hone AI skills (Wiederhold,2021).

In the sixties Joseph Weizenbaum developed a computer program at the MIT under the name of Eliza. This program works to facilitate natural language conversation between humans and computers, so that Eliza users play an important role in developing it, which allows enhancing its linguistic capabilities. The Eliza program collects information about the discussed topic so that the course of the conversation will be extracted later (Weizenbaum, 1966, p.36).

During the years of 1970-1980 the domain of the artificial intelligence has witnessed a new era called the AI winter. This term refers to a periodic phase of reduced funding, interest, and development in the field of the AI. These periods are characterized by a decline in public enthusiasm and supportive funding, leading to a slowdown in research and advancement (Yang,2006,p.17).

The 20th century and the 21th century (1990-2000) were an era of flourishing. The AI has witnessed a significant development and became widely popular among the general public. In addition, it has seen a tremendous progress with a significant growth in its applications and uses across various fields such as: AIBO (AI robot), it was launched by Sony in 1999. AIBO was the first consumer robot pet dog with skills and personality that develop over time. Also, ROOMBA the first mass produced autonomous robotic vacuum cleaner from iRobot learns to navigate and clean homes, along with several other versions and inventions (Baum,2023,p.17).

So, the aspiration to create intelligent machines can be traced back to centuries ago, but the genesis of modern AI firmly took root in the mid-20th century. Subsequently, the field of the AI has witnessed epochs of enthusiastic development interspersed with intervals of limited progress. However, it now finds itself in new era of flourishing propelled by recent advancements in different areas such as deep learning, big data, and computational power. AI is fundamentally redefining the modern world by presenting all aspects of human experience.

1.1.2. Importance of Artificial Intelligence

The artificial intelligence's importance is increasing to grow across all facets of human existence. AI is demonstrably exerting a significant influence on the landscape of social interaction. From revolutionizing the social media platforms to powering personalized experiences in industries, education, and healthcare...etc.

1.1.2.1 Human Lifestyle

Artificial Intelligence has penetrated into various aspects of our daily lives, providing services and applications that were not available in the past. Through robots and smart systems, artificial intelligence has become an essential element in many sectors, contributing to improving the efficiency of operations and saving people time and effort. Although artificial intelligence is still in its early stages of development, it showed tremendous potential in various fields. This heralds a promising future in which artificial intelligence enhances human capabilities and contributes to its progress and prosperity.

Artificial intelligence is an important element in the fight against spam, which plagues email users on a daily basis. Advanced artificial intelligence techniques analyze and sort emails accurately. Those are flagged as "spam" and sent to designated folders away from your inbox. Gmail is a prominent example of the effectiveness of artificial intelligence in this field. It succeeded in achieving an amazing filtration rate approximately 99.9%. This gives users a hassle-free email experience full of useful messages (Valavanidis, 2023,p.20).

Artificial intelligence contributes in enhancing security through facial recognition technology. This technology is used in mobile phones, laptops, and personal computers in order verify users' identity and grant them secure access. Facial recognition applications go beyond personal use. It is widely used in various sectors that require a high level of security such as: financial institutions, government facilities and high-security areas. This technology is a technical revolution that contributes to reducing the risks of identity theft and unauthorized access. This enhances security and maintains data integrity (Valavanidis, 2023,p.20).

An AI-powered recommendation system is an essential component of many of the platforms we use every day, such as e-commerce sites, entertainment platforms, social media platforms, and video sharing sites. This system analyzes users' data and behavior to provide personalized recommendations that enhance their experience and stimulate their engagement. These applications are widely spread in various sectors, as they contribute to improving the user experience and increasing the chances of discovering new products and services that meet his needs and interests. As a result, the recommendation system supported by artificial intelligence is a technical revolution that adds a personal touch to our interaction with digital platforms, and contributes in making it more useful and attractive (Valavanidis, 2023,p.20)

1.1.2.2 General Health Management

The field of medicine and health has witnessed a massive technical revolution thanks to advanced artificial intelligence applications. From accurately monitoring patients' conditions around the clock and providing detailed analyses that help doctors make informed treatment decisions, to accelerating drug discovery and developing new treatments by analysing huge amounts of data, enhancing the efficiency of clinical trials, identifying factors affecting the safety and effectiveness of drugs, analysing genetic data and determining Genetic variations that cause diseases; developing more accurate and rapid diagnostic tools to

detect diseases in their early stages; improving the accuracy and skill of robotic surgeries, strengthening the protection of health data and detecting electronic threats, improving patient management and providing personalized information for each patient; supporting him, reminding him of the dates of examinations and treatments, providing medical advice, and analysing his health behaviour, providing customized treatment plans (Valavanidis, 2023, p.27).

AI can monitor your heart rate and other vital indicators, predict problems and help with preventing them before they even happen. Moreover, AI can make sure ambulance get to you faster, reduce hospital wait time, and make the admission process smoother. AI powered electronic health records can help doctors organize your medical history and use them effectively, while natural language processing allows voice recording for faster report generation, and it can also analyze your data to detect diseases at earlier stages (Sezgin & Balçioğlu, 2023, pp.84-85).

AI recently started to play the role of surgeon. That is to say, AI powered robots like da Vinci can actually assist surgeons with precise procedures; Research is ongoing for robots to perform autonomous surgeries in future (Sezgin & Balçioğlu, 2023, p.p.84-85).

Artificial intelligence is a historic turning point in the field of health care, as it provides advanced analytical tools that contribute to improving diagnosis and treatment and raising the quality of services provided treatments (Ding, Gao, Isaksson, Landers, Parisini, & Yuan ,2020, as cited in Mahato,2022,p.198) .

As the volume of medical data increases, dealing with it manually becomes difficult, leading to delays in diagnosis and treatment of patients. Therefore, artificial intelligence comes as a smart solution to process and analyse this data quickly and accurately, which helps doctors make better and faster decisions. In addition, artificial intelligence can help in developing new medicines and treatments. This is done by analysing data related to diseases and searching for new patterns that may help discover effective treatments (Ding, Gao, Isaksson, Landers, Parisini, & Yuan ,2020, as cited in Mahato,2022,p.198)

1.1.2.3 Banking and Financial Business

The artificial intelligence applications are used in banks to obtain market data, improve customer service through mobile and online banking, and facilitate communication. Technological development have led to the development of various tools such as: ATMS,

point of sale devices, and telephones to conduct basic banking transactions. Besides, modern electronic banking services provide greater efficiency and a wider range of transactions through the internet, mobile application and kiosks .(Sezgin & Balçioğlu,2023,p.p.84,85).

Artificial Intelligence is revolutionizing the banking sector, enhancing the efficiency of operations and improving the quality of services provided to customers. The benefits of using artificial intelligence in this field include: Providing customized financial advice that suits the needs of each client; proposing financial products and services appropriate to customer needs; early detection and prevention of fraud; reducing customer service waiting time; facilitating the process of opening accounts and managing banking operations; providing customer information and support around the clock via SMS or online chat. Enhance financial security by monitoring transactions and detecting suspicious activities. Artificial Intelligence is a revolutionary tool that contributes to developing the banking sector and making it more efficient and secure. This provides customers with a distinctive banking experience that meets their needs and enhances their confidence in financial institutions (Valavanidis, 2023,p.35).

1.1.2.4Manufacturing

The artificial intelligence revolution ignites the fire of change in the factories of the future. With the increasing speed of technological development, especially in the fields of the Internet and artificial intelligence, the industry sector faces new challenges that force it to reconsider business models and methods used. Therefore, adopting the concept of —smart industry‖ becomes an urgent necessity in this era, as artificial intelligence can be integrated with information and communications technology, manufacturing and other related fields to achieve a qualitative leap in this field Kakadiya, Lemos, Mangalan, Pillai, & Nikam,2019,as cited in Mahato,2022,p.198).

Thanks to these modern technologies, factories become more efficient and intelligent, which leads to improving the quality of products, increasing productivity, and reducing costs. In addition, artificial intelligence contributes to the development of new products and services that better meet the needs of consumers. Therefore, the integration of artificial intelligence into the industrial sector is considered a real revolution that will radically change the face of this sector and contribute to strengthening the position of countries at the global level (Kakadiya, Lemos, Mangalan, Pillai, & Nikam,2019,as cited in Mahato,2022,p.198).

Artificial Intelligence offers huge potential to analyse the vast data collected by the Internet of Things (IoT) from factories, which contributes to improving the efficiency of operations and making informed strategic decisions. However, the proliferation of IoT applications in the industrial domain faces a major hurdle of securing and deploying these projects securely. Ensuring trusted identities for devices and services that interact within secure environments is one of the most important factors in ensuring the security of the network of things. This requires a comprehensive approach that combines advanced technologies and professional expertise (Valavanidis, 2023,p.06) .

The effectiveness of artificial intelligence is particularly evident in the field of combating fraud. It can analyse massive amounts of financial data and identify potentially fraudulent transactions with high accuracy, which contributes to reducing financial losses and protecting customers' interests (Valavanidis, 2023,p.06)

Artificial Intelligence is a pivotal technology that can drive greater development of industrial manufacturing. There are three main aspects of production control where AI applies: Fault diagnosis: Artificial intelligence helps identify problems and malfunctions in machinery and equipment quickly and accurately, reducing downtime and improving production efficiency. Life expectancy: Artificial intelligence can analyse operational data to predict when a machine needs maintenance or replacement, which helps avoid sudden breakdowns and extends the life of machines. Quality Inspection: Artificial intelligence uses computer vision and other technologies to automatically inspect products and detect defects, ensuring high quality of finished products. In short, AI represents a true industrial revolution that is changing the face of modern manufacturing. It helps improve efficiency, productivity and product quality, which contributes to strengthening the position of industrialized countries at the global level. (Kaul, Enslin & Gross, 2020, as cited in Mahato, 2022,p.198)

1.1.2.5 Education

The field of education was the most affected one by the AI pandemic. —The AI currently viewed by many as a driver that is integral to the fourth revolution and it may trigger the fourth revolution in educationl (Zhai ,Chu ,Sing Chai ,Yung Jong ,Istenic ,Spector , Liu ,Yuan& Li,2021,p.01). Reliance on artificial intelligence (AI) in education has increased over the past 15 years. Today's teachers and their learners benefit from its applications to enhance the educational process. Robots have been serving education for a long time, with Lego

Mindstorms kits developed at MIT in the 1980s specifically for this purpose. Other robots such as Ozobot and Cubelets play an important role in helping learners, especially children, learn (Bhbosale,Pujari&Multani,2020,p.228).

AI personalizes learning, because one teacher cannot meet the expectations and the needs of all learners. So, the AI can provide a tutor for every student (Nalbant,2021,p.05). Furthermore, it allows learners to access knowledge and learns different languages easily. Without forgetting to mention that it has the ability to track student attendance by using smart sensors at the entrance and exit of the school. A student's attendance days can be easily entered into the system and also the absences can be easily tracked without teachers having to take attendance (Nalbant,2021,p.05).

The most heartwarming thing about the AI is that it has made it much easier for students and learners with special needs to access information. This aims to ensure full and equal participation of students with special needs(Nalbant,2021,p.05). Blind people can receive education using text to speech systems. In addition to, deaf people and slow learners can learn through the use of speech to text systems. Individuals with walking difficulties and patients can also have the chance to attend their classes and meetings without even making a move. AI reduces errors as much as possible. Since AI lacks human emotions, it can make more professional and fair decisions(Nalbant,2021,p.05).

Artificial intelligence tools allow for accurate analysis of student data and customization of educational paths that suit the needs of each student. This is expected to contribute to improving learning outcomes, increasing student participation, and reducing dropout rates, which heralds a more effective and enriching educational future that meets the needs of every student and contributes to the development of his or her skills and capabilities (Ayala-Pazmiño,2023p.894).

Artificial intelligence provides innovative solutions to improve the assessment system in education. Its tools provide immediate feedback to students, helping them better understand their strengths and weaknesses. It also contributes to evaluating students' performance more accurately by comprehensively analyzing their data. Moreover, AI tools help teachers reduce the time allocated to administrative tasks such as marking and reporting, allowing them to focus on more important tasks such as interacting with students and providing direct support to them. Thus, artificial intelligence contributes to enhancing the efficiency of the educational process and improving the quality of education in general (Ayala-Pazmiño,2023p.894)

Artificial intelligence has provided innovative solutions to improve the education system through: Providing content that appeals to each student's interests, stimulating engagement and enhancing academic achievement. AI provides instant feedback which helps students understand their strengths and weaknesses and enables them to improve their educational path. It also reduces the workload of teachers: AI tools can automate administrative tasks such as marking and reporting, freeing up time for teachers to interact with students directly (Ayala-Pazmiño,2023p.894)

To sum up, the artificial intelligence has invaded all fields in general, and it performs a significant contribution in the life of individuals in particular.

1.1.6. Advantages and Disadvantages of AI

Artificial Intelligence (AI) is one of the revolutions that have swept our world, playing an integral role in the development of all areas of life and shaping a better future. However, AI, like any powerful technology, comes with its own set of challenges and considerations. We will delve into both sides of the AI coin by looking at some of its advantages and disadvantages.

1.1.6.1. The Benefits of AI

AI can analyze a huge amount of data, which gives it the ability to do repetitive and complex tasks. This option gives businesses the opportunity to free themselves and dedicate their creativity in different kind of fields (Thippanna, Jyothi , Krishnaiah, 2023, p.1671).

AI personalizes the users interactions. Here comes the role of the algorithms. which prioritizes the users _satisfaction, by providing the desired offers. In addition, the AI can predict the future events through learning from past data. It also works round-the-clock service: AI-powered chatbots provide round-the-clock customer support, ensuring questions are answered 24 hours a day (Thippanna,Jyothi ,Krishnaiah,2023,p.1672).

Natural language processing algorithms empower machines to comprehend and produce human language. AI can improve safety in areas such as self-driving cars and factories by minimizing accidents and errors (Thippanna, Jyothi ,Krishnaiah, 2023, p.1672).

Since the dawn of time, humans have faced challenges that require extreme precision and efficiency. In fields such as medicine, engineering, and scientific research, it has become necessary to go beyond natural human errors and seek more consistent solutions. Artificial intelligence (AI) has emerged as a revolutionary technology aimed at achieving this goal.

Artificial intelligence relies on complex algorithms that enable machines to process data and make decisions accurately and efficiently. Unlike humans, who are influenced by emotional factors and personal biases, AI systems operate very efficiently, without external influences, making them ideal for tasks that require extreme accuracy and speed. In medicine, artificial intelligence is used to diagnose diseases, analyze medical images, and develop new treatments (Bhbosale, Pujari & Multani,2020, pp.228.229).

In engineering, artificial intelligence helps design and develop more durable and efficient structures and buildings. In scientific research, artificial intelligence is used to analyze huge amounts of data, discover new patterns, and better understand natural phenomena. On a practical level, AI automates many routine tasks, such as sending emails, proofreading documents, and answering customer questions. This frees people from these boring tasks and allows them to focus on more creative and productive work. Artificial intelligence technologies are widely used in various fields. In our daily lives, we use digital assistants such as Siri, Cortana, and Google Assistant to search for information, make calls, and send SMS. AI systems are also used in self-driving cars, traffic control, and financial data analysis (Bhbosale,Pujari&Multani,2020,pp.228.229).

Artificial Intelligence is a revolutionary solution for preserving institutional knowledge and ensuring business continuity. It overcomes the problem of dependence on individuals and keeps knowledge alive, through digital documentation and machine learning techniques. The reliability of AI tools is enhanced through reinforcement learning that enables them to benefit from real-world experiences. Applications of artificial intelligence in this field include creating knowledge databases, building intelligent forecasting models, and developing automated expert systems. Thanks to these capabilities, artificial intelligence contributes effectively to preserving knowledge and transferring it to future generations and enhancing the efficiency of decision-making in various institutions (Russell& Norvig,2003, as cited in Chowdhury & Sadek,2012,p.06).

Artificial intelligence (AI) is a revolutionary field of science that enables us to create intelligent machines that go beyond our biological capabilities. These machines learn from data, giving them the ability to understand patterns, predict outcomes, and solve problems efficiently. Thanks to artificial intelligence, we can analyze big data at breakneck speed, discover new insights, automate complex tasks, and improve our lives in multiple areas, from

ordering food online to diagnosing diseases. Artificial Intelligence paves the way to a future full of possibilities (Aizawa,1992, as cited in Lavanya,2021,p.12)

1.1.3.2 The Drawbacks of AI

Despite the enormous benefits that AI (Artificial Intelligence) offers, it is not without its drawbacks. Automating tasks using AI may lead to job losses, especially in industries that rely heavily on repetitive tasks. Furthermore, bias in training data can spill over into biased decisions by AI, impacting areas such as loan approvals, hiring practices, and even criminal justice. This raises concerns about fairness and equal opportunity (Thippanna,Jyothi ,Krishnaiah,2023,p.1672). Privacy is another major challenge. AI tools often collect and analyze vast amounts of personal data. The lack of transparency regarding the use of data and the potential for misuse of it without consent are serious concerns. Security is also a concern, as AI systems can be vulnerable to hacking or manipulation, which could have serious consequences, especially in critical infrastructure or cyber security (Thippanna,Jyothi ,Krishnaiah,2023,p.1672).

Aside from these practical issues, the development and use of artificial intelligence raises broader ethical issues. The possibility of autonomous weapons, mass surveillance systems, and the overall impact of artificial intelligence on society requires careful consideration. There is a need to ensure responsible development and use (Thippanna, Jyothi, Krishnaiah,2023,p.1672). Implementation costs can also be an obstacle. Not all organizations have the financial resources to adopt cutting-edge AI tools. In addition, over-reliance on AI can lead to a loss of essential skills and knowledge in certain areas. As humans increasingly rely on machines for decision making, core expertise could be eroded. To conclude, although AI offers exciting potential, we must be aware of the challenges it poses (Thippanna,Jyothi ,Krishnaiah,2023,p.1672).

The development and maintenance of robots has faced many challenges, from the high cost of equipment that makes initial construction expensive, to rebuilding and repairing them that require extensive time and resources. Repairing robots by other robots is a potential solution to reduce human intervention and shorten repair time, but in turn adds another layer of complexity and cost. The development and maintenance of robots has faced many challenges, from the high cost of equipment that makes initial construction expensive, to rebuilding and repairing them that require extensive time and resources. Repairing robots by

other robots is a potential solution to reduce human intervention and shorten repair time, but in turn adds another layer of complexity and cost (Bhbosale,Pujari&Multani,2020,p.229).

The increasing reliance of organizations on artificial intelligence to replace repetitive tasks with robots has posed a threat to workforce utilization standards. As the role of humans diminishes, organizations may face challenges in recruiting and training individuals with the advanced skills necessary to keep pace with technological developments (Bhbosale,Pujari&Multani,2020,p.229). Machines are limited in their ability to perform tasks outside the scope of their design or programming, making them susceptible to malfunctioning or delivering irrelevant output. This shortcoming represents an obstacle to machines adapting to unexpected situations, which raises concerns about their increasing adoption in various fields (Bhbosale,Pujari&Multani,2020,p.229).

Addiction to technology: Instead of direct social interaction, students resort to communicating through social media platforms . Spending excessive time on electronic devices makes students unable to allocate enough time for their studies, lectures, and motivating themselves. A student cannot give his education the necessary priority when he spends most of his free time in virtual worlds and video games. This is one of the most common complaints among parents (Nalbant,2021,p.05).

Negative impact on social life: Before the advancement of artificial intelligence ,students were involved in more group and social project. Technological advances have made work increasingly individual. Libraries, which students are accustomed to visiting for research and study, have become an alternative to tablets and laptops, which have become the closest companions to the individual. Nowadays, the ability to obtain information with just a few clicks has led to social distancing and apathetic personalities in some (Nalbant,2021,p.05).

Negative impact on health: Students will face pressures as a result of the increased competition brought by the emergence of artificial intelligence. They will feel pressured to achieve better results. This may affect their psychological and mental state. It is important to note that modern electronic devices do not radiate harmful radiation. However, its excessive use is associated with some potential health risks. For example, heavy technology users may suffer from anxiety disorders and neck, back, and wrist pain (Nalbant,2021,p.05).

1.1.3.4 AI Algorithms: Types and Functions

Simply put, it is sets of instructions that are programmed into machines to make them think and act like humans. These instructions process data, analyze patterns, and make decisions in ways that resemble our own thinking. Now we delve into the most commonly used algorithms among the types of the AI algorithms (Abu Rayhan, Rayhan, Gross, 2023).

First of all, search and optimization algorithms which help machines find the best solutions to complex problems. It starts by exploring a wide range of solutions and gradually focuses on finding the best one, like optimizing travel routes or protein folding simulation (Abu Rayhan, Rayhan, Gross, 2023).

The second one, machine learning algorithms enables machines to learn from data and improve their performance over time through empowering machines to learn and improve without explicit programming (Abu Rayhan, Rayhan& Gross, 2023). The third one, natural language processing algorithms help machines understand and use human language. These algorithms act as interpreters between humans and machines, enabling machines to understand and process human language (Abu Rayhan, Rayhan& Gross, 2023).

The last one, computer vision algorithms enable machines to see and analyze images and video. These algorithms empower machines to see and interpret the world around them through images and video (Abu Rayhan, Rayhan& Gross, 2023).

To sum up these types are the basic instructions that the artificial intelligence machines follow in order to perform the way it does.

1.2. AI Chat Bots

1.2.1. Definition of a Chat Bot

—Chat bots, or chatter bots, are a category of computer programs called bots that engage users in conversations. Driven by algorithms of varying complexity, chatbots respond to users' messages by selecting the appropriate expression from programmed schemas, or in the case of emerging bots, through the use of adaptive machine learning algorithms (Neff & Nagy, 2023, p.4915).

To put it in another way, chatbots originally chatter bots are as it was said computer programmed in order to have conversation with different people or other bots. It is operated by set of algorithms with different levels of intricacy. Some chatbots are designed with certain

level of interaction. That is to say that they are programmed with predetermined replies, while others are more sophisticated with the use of machine learning algorithms.

—In many cases bots are digital uses within a popular messaging products, such as slack, facebook; kik, and more. Unlike most users they are powered by software rather than by human, and they bring a product, a service, or brand into a given messaging product via conversation. In the world of messaging apps, bots are emerging as innovative tools that offer a new interactive experience. These programs, powered by artificial intelligence, go beyond the traditional user, to exist as intelligent digital entities within communication platforms such as Slack, Facebook Messenger, and Kik. Bots provide various services, from ordering products and services to booking appointments and answering questions, all through a natural conversation within the app environment.(Shevat,2017,p.02).

Imagine that your favorite messaging applications (such as WhatsApp or Telegram) have special buttons that allow you to talk directly with stores, banks, etc.! These smart buttons are called —bots and are simply a new way to interact with the services and brands you use, all from within the messaging app itself (Shevat,2017,p.02)

1.2.2Types of AI chatbots

Smart chatbots represent a paradigm shift in the world of digital interaction, as they enable seamless and efficient communication between humans and machines. These chatbots are extremely diverse in terms of capabilities and functionality, creating a rich and interconnected world of applications and uses.

In this paragraph, we will dive into a journey to discover the diversity and diversity of the world of smart chatbots, and highlight the various divisions that distinguish them. We will discuss the main categories of these chatbots, outlining their unique characteristics and numerous applications.

Firstly, simple or basic bots and advanced bot. Within the first type interaction is primarily guided by pre-prepared responses and probes drawn from a pre-defined library. This approach often referred to as —workflow within the industry lead to a rapid decline in the breadth and depth of user interaction (Deussom,Arnold,Tonye,Abana,2023,p.43). Conversely, intelligent or advanced bots leverage natural language processing (NLP) technology to deliver accurate and relevant content. This integration facilitates a user experience similar to speaking with a live operator through a digital platform (Deussom,Arnold,Tonye&Abana,2023,p.43).

Secondly, In the field of chatbots, menu-based interfaces, presented in the form of buttons and drop-down menus, represent the most common and most basic design. These chatbots work similarly to decision trees, guiding users through a series of pre-determined options to arrive at the desired answer. Although this method provides ease of use and clarity, list-based chatbots may exhibit limitations in performance speed and may not always provide the most comprehensive answer, especially for complex or unexpected queries (Gupta, Hathwar& Vijayakumar,2020,p.255).

Another kind of chatbot is Keyword chatbot. It relies on an apparently clever strategy: they recognize pre-defined words within a user's query and respond accordingly. This approach is effective for simple, straightforward questions, but becomes a limitation when complex. The problem with keyword chatbots arises when the same words are repeated in different queries. For example, he may have difficulty determining the appropriate answer to the question, "How do I set up auto-login authentication on my phone?" Because words like "automatic" and "login" may be included among other answers. Accordingly, the success of these chatbots depends on the accuracy and comprehensiveness of the list of keywords. The more organized and detailed the list is, the better the chatbot's ability to understand the user and provide correct answers (Gupta, Hathwar& Vijayakumar,2020,p.255).

The last one is known as Contextual Chatbots .Context chatbots represent a quantum leap in the world of customer service thanks to artificial intelligence and machine learning technologies. These chatbots are able to understand the context behind user queries, using technologies such as voice recognition and speech-to-text. Using these techniques, context chatbots can analyze stored user data (such as order history in food delivery apps) and infer the user's true intentions. Accordingly, it provides thoughtful and personalized answers that meet his individual needs. With each new interaction, these chatbots learn and evolve, improving their ability to understand users and deliver a satisfying interactive experience. In short, contextual chatbots provide an innovative solution for intelligent and effective interaction with customers, going beyond simply answering questions to meeting their individual needs and preferences (Gupta, Hathwar& Vijayakumar,2020,pp.255.256).

1. 2.3Examples of AI chatbots and their Functions

1.2.3.3The Chatbot Eliza

Eliza is the eldest chat bot. It was created by Weizenbaum who inspired the name —Eliza Doolittle in George Bernard show's play, who learns to speak elegantly. Weizenbaum

designed Eliza to mimic the Rogerian wizard. Eliza mainly responds with open ended question like, —Can you tell me more about that? — This approach made —Eliza appear less suspicious to interviewers (Neff&Nagy,2016, as cited inZemčik,2019,p.15).

Although Eliza is simple by today's standards, its basic principles are still used in modern chat programs. During the conversation Eliza was able to define the keywords in the user's message, set the context around those keywords, and select pre-programmed responses to rephrase the user's message(Neff&Nagy,2016,as cited in Zemčik,2019,p.15).

Despite its simplicity, Eliza was surprisingly effective. Even after being told about her limitations, people often interacted with Eliza seriously even revealed their personal thoughts and feeling to her. Eliza played the role of the therapist, it passed the —Turing Test that why it considered to be one of the successful chatbots.

1.2.3.4The Chatbot Parry

Unlike Eliza, Parry, created by a psychiatrist named Kenneth Mark Colby, in 1972, is completely different model. Instead of acting like psychotherapist, Parry acts like a persecutory schizophrenic patient. By deliberately creating controversy, Parry aims to get users to explain themselves in more detail. This serves two purposes (to train new psychiatrist to communicate with these patient, and to serve as a model for how addressing misinformation can lead to persecution (Neff& Nagy, 2016; Güzeldere &Frahi 1995,as cited in Zemčik,2019,p.15).

1.2.3.5 The Chatbot Siri

Siri was founded in 2011 on a project called CALO. The project focused on building a virtual assistant to empower military personnel to manage their daily schedules effectively. It was funded by the Defense Advanced Research Projects Agency DAPRA, the research arm of the US department of defense, this project aimed to create an assistant for military personnel, most likely to assist with scheduling and organization. In addition, Siri was not always called Siri, initially it was called Assistant but the team chose a shorter, friendlier name —Siri- that suggested a more personal experience although initially envisioned for integration with other iPhone apps, Siri's potential as a standalone product clearly stood out, this led its debut on the iPhone4s as a built-in feature (Boddu,2023).

One of the most popular functions of Siri is that it has the ability to understand spoken language and respond to it in a natural way, moreover it has the ability to learn from user

interactions .With each use, Siri adapts its responses based on the user's preferences, making them more personal and useful over time. In short, Siri's success stemmed from its user-friendly design, natural language processing capabilities, and ability to personalize the user (Boddu,2023).

1.2.3.6The Chatbot Alexa

Alexa, another chatbot, was a conversation tool but now it is not anymore, this virtual assistant goes beyond chatter to become a useful companion in your daily life. If you need to set alarms, play music, or get answers to questions, Alexa is at your service. It can even control your smart home devices. It can even control your smart home devices, order from Amazon, or book ride, making it a one –stop-shop to accomplish various tasks (Boddu,2023).

According to voice bot ai , Alexa is the most popular virtual assistant in the US , since its launch in 2014, Alexa has gotten smarter, with features like improved voice recognition and integration with smart home and the ability to make calls and send messages , with constant updates , Alexa continues to amaze users as a powerful and versatile tool. Finally, if you crave a smart home hub, Alexa is the suitable one and if you need an on –the go assistant chose Siri (Boddu,2023).

Conclusion

Artificial intelligence constituted a massive technical revolution that shook the world, leaving its mark on various fields. From mimicking human capabilities to solving complex problems, artificial intelligence has emerged as a powerful tool with enormous potential. The journey of artificial intelligence is a journey through time filled with creativity and innovation. Its importance is undeniable as it is considered to be an essential component of scientific and technological progress. It has proven its ability to solve complex problems, improve process efficiency, and develop services. Yet it is not without some drawbacks that must be taken into consideration. Artificial intelligence systems rely on complex algorithms that enable them to learn, grow, and make decisions. This gives the chatbots the opportunity to interact with their users with human being capacities.

Chapter Two:

AI Chatbots Use in Algerian and Foreign Universities

Chapter two: AI Chatbots Use in Algerian and Foreign Universities

Introduction

Intelligent chatbots are creating a qualitative shift in universities in today's world. The education sector is witnessing a massive digital revolution attributed to rapid developments in the field of artificial intelligence and information technology. Among the most important tools that embody this revolution, AI-powered chatbots stand out as a revolutionary element that creates a qualitative shift in the way universities, professors, and students interact with the educational process. AI-powered chatbots offer tremendous potential to enhance the efficiency of education and meet the needs of all parties concerned, starting with universities that seek to improve their services and provide a distinctive educational experience for students through to professors who can benefit from these robots to facilitate their tasks and improve communication with students, all the way to the students themselves who find these robots as an effective tool for self-learning and obtaining support and guidance. Yet, this powerful tool remains under development and relatively new technology in university education, which explains why there are some concerns and reservations about their widespread use. These concerns can be linked to their novelty and the lack of sufficient experience in evaluating their long-term impact on the quality of education, as well as the lack of a clear ethical framework to regulate their use.

2.1. Chatbots in International Higher Education Institutions

Educational chatbots can be defined as interactive tools specifically designed to support the learning process. Its objectives may vary to include the purely educational field, such as explaining concepts and study materials, or it may be directed towards providing administrative and support services, such as facilitating the registration process or answering student inquiries (Bii, 2013, as cited in Chocarro, Cortiñas & Marcos-Matás, 2021, p.3).

—The adoption of conversational AI in colleges and universities is a significant step forward in the drive to transform higher education into the workplace in the future (Lopez & Qamber, 2022, p.14). They have stated that incorporating conversational AI chatbots into the educational landscape of colleges and universities represents a critical step toward bridging the gap between higher education and the demands of the future workplace. This transformative approach enables organizations to provide students with the essential skills and adaptability needed to succeed in rapidly evolving business environment.

Chatbots have emerged as promising educational tool with the potential to enhance the learning experience by providing personalized and immediate feedbacks (Kooli, 2023, p.4). In another meaning, Chatbots which are computer programs that stimulate conversations represents a revolution in the field of education, through their ability to provide a personalized and immediate learning experience for students that contributes in enhancing their abilities and achieves better educational outcomes.

The use of automated chat and the digital technologies can improve the efficiency of the university's work. The reason is that it allows the student to obtain pieces of information about the university and its programs at any time. This makes it easier for students to assess information without having to search or wait. The speed access to information and the ease communication are other powerful elements that the student can benefit from. AI chatbots help universities to save time and resources, improving services to students and keeping pace with modern developments (Me et al,2021, as cited in Lopez & Qamber, 2022 p.39).

Some chatbots may be able to assess individual learning styles and provide feedback tailored to them, making the learning journey more effective for each student. It can also encourage for active participation. As, some chatbots act same as virtual mentors. This can motivate student to continuously participate in educational dialogues, enhancing the learning process. That is to say, students can receive immediate answers to their questions, promoting a dynamic learning environment aligned with constructivist theory .Where students actively construct their knowledge. This enables them to take ownership of their learning journey (Lopez& Qamber, 2022 p.8).

AI technologies can help ensure everyone can participate in global classrooms, including those with visual or hearing disabilities or those who speak other languages. There is a free PowerPoint add-on called Presentation Translator that creates written translations of what the lecturer is saying in real time. This also opens doors to new opportunities for students who may be ill or unable to attend classes, or who need to study a particular subject or at a different level that is not available at their current educational institution. Artificial intelligence can help remove barriers between traditional grade levels and different schools (Williamson, 2014, as cited in Akinwalere & Ivanov, 2022, p.7).

—University of California (2021) has shown that AI chatbots can deliver rapid replies to library inquiries, sign students up for new course or refer to the admissions department in blink of an eye. The ability of chatbots to respond to inquiries through messenger helps students and university officials to stay on the same page. Because chatbots are available 24

hours a day .Overseas students may communicate with the university office without regard to the institution's local time zone (Lopez&Qamber,2022p.13). To re-express this transformative approach enables organizations to provide students with the essential skills and adaptability needed to succeed in a rapidly evolving business environment. One of the most important benefits of chatbots is instant communication, as it allows students to get the help they need at the right time, reducing frustration and increasing satisfaction. Chatbots also offer effective solutions to break down time barriers, as they are available around the clock, allowing international students to communicate with the university regardless of their location or time difference. In general, smart chatbots contribute to improving the overall student experience, reducing the workload on employees, and achieving efficient use of resources, which makes them a valuable tool for universities seeking to provide the best possible service to their students.

Although chatbots offer to the universities the opportunity to streamline communication with prospective students; it could possibly have some potential drawbacks. Inaccurate information from automated chat can damage university's image, and the inability to resolve complex queries or the impersonal nature of chat can frustrate the students (Lopez&Qamber,2022p40).

—keep in mind that AI systems require human control first and foremost. Even the most intelligent AI systems can make mistakes. The data used to train AI systems is only as intelligent as the data that was used to train them (Kaplan& Haenlein,2019, as cited in Nassoura,2022,p.1178). Artificial Intelligence tools are really powerful with enormous potential, but they should not be viewed as a substitute for human command and control. With the potential for these systems to make mistakes, it is essential that humans remain in control, and guide these tools according to the human values and ethics.

2.1.1 University Teachers and Students' Use of AI Chatbots

Recent studies highlighted the potential of chatbots to improve students-teachers interaction in higher education. The studies analyzed the development and implementation of chatbots designed to support students-teachers interaction. This automated chats was integrated into an online educational platforms and provided students with assistance regarding course, content, and assignments. The majority of students evaluated the chatbots positively and considered it as a useful tool for communicating with their teachers. The research concluded that automated chats have the ability to enhance students-teachers interaction and improve the learning experience in general (Dwivedi; Kshetri; Hughes; Slade;

Jeyaraj; Kar; Baabdullah; Koohang, ; Raghavan; Ahuja, et al,2023.; Mendoza; HernándezLeón; Sánchez-Adame; Rodríguez; Decouchant; Meneses-Viveros,2020,as cited in Kooli,2023p.04).

2.1.1.1 The teachers' Use of AI Chatbots and The reasons behind

The success of implementing this new educational approach depends largely on the extent to which teachers accept and use it because they represent the driven force behind this new educational method (Guervos, Castillo, More, Barranco, Abbas,Gullen & Tsivitanidou, 2023 p.1904).

AI chatbots can be a powerful and useful if correctly used. This tool can be really beneficial for teachers within the assessment approach. They can use this chats programs in evaluation process. That is to say, they can review learners _chats to monitor their learning process. Providing necessary feedback to their students and identify topics they would like to learn in the future. Besides helping the learners to practice speaking and listening skills, AI conversational software can also support the teachers in grading students _writing or evaluating their audio recordings. AI chatbots have the potential to greatly assist the educators by coming up with diverse teaching materials that instantly match the interests and levels of the learners based on their data (Yang,2019.; Kim,Shin,Yang&Lee,2019,as cited in Yang,2022p.46).

Furthermore, AI driven learning platforms allow the educators to understand the students' progress and learning styles, allowing them to adopt their teaching strategies more effectively. In another word, this chatbots can analyze the students' performance data to identify areas where the learners are experiencing difficulties either on the individual or class wide level. This gives the teachers the opportunity to identify knowledge gaps and adjust their teaching methods accordingly (Tang et al,2021, as cited in Tsv Kit Ng,Leung,Su,Chi wull ng&Kal wah chu,2023p.139).

AI powered chats can minimize the amount of drill question with providing the learners with the appropriate instructional resources and free the teachers' time to develop more complex questions. In addition, delivering immediate and personalized assistance and facilitating the students collaboration (Seo et al,2021, as cited in Tsv kit ng,Leung,Su,Chi wull ng&Kal wah chu,2023p.140).

The most crucial thing about AI chatbots is that educators and instructional designers can develop virtual agent with pre-based knowledge that can teach and assist the

learners(wang&chein,2022,as cited in Tsv Kit Ng,Leung,Su,Chi wull ng&Kal wah chu,2023 p.140).

AI empowers the teachers to create more efficient learning environment plus simplifying their workload (Seo et al,2021,as cited in Tsv Kit Ng,Leung,Su,Chi wull ng&Kal wah chu,2021, p.140).

AI chatbots provide the educators with a comprehensive solutions, facilitate the teacher process and customize educational materials to suit students _ needs and teaching styles (Archambult et al, 2022,as cited in Tsv Kit Ng,Leung,Su,Chi wull ng&Kal wah chu,2023 p.145).

Teachers can take advantage of AI driven assistant when it comes to assessment approaches, by given the opportunity to automatically correct and evaluate students. It also provides variable feedback on different kind of aspect such as: grammar and sentence structure (Ramesh & Sanampudi, 2021, as cited in Tsv Kit Ng,Leung,Su,Chi wull ng&Kal wah chu,2023, p.146).

Teachers spend a lot of time grading tests and assignments. Here comes the role of artificial intelligence (AI), which speeds up the correction process and provides recommendations to address any learning difficulties faced by students. While machines can currently grade multiple-choice exams, they are on the cusp of being able to grade written answers as well. As artificial intelligence develops, it allows teachers more time to interact with each student individually by automating administrative tasks. In addition, artificial intelligence shows great potential to improve the efficiency of admission and registration procedure (Williamson, 2014, as cited in Akinwalere &Ivanov, 2022,p.p07-08) .

Artificial intelligence can address weaknesses in education and help schools and teachers transcend their traditional roles. It enhances efficiency and personalization, and reduces administrative burdens, giving teachers the opportunity to provide understanding and flexibility, human skills that machines cannot. By combining the capabilities of human and machine, we seek collaboration that serves the student's benefit. Since today's students are the leaders of an AI-dominated tomorrow, it is imperative that educational institutions integrate this technology and expose students to its potential (UNICEF,2020, as cited in Akinwalere &Ivanov, 2023,p.07)

2.1.1.2 The Students' Use of Chatbots and the Reasons behind

Thanks to the technological advancements and the shift of the education towards online and hybrid learning, students interaction with chatbots has seen a significant rise in the recent years (Kooli,2023,p.04) .

When it comes to the educational field, chatbots can revolutionize the learning experience by providing several services. Chatbots can act as on demand tutors, providing students with instant answers to their questions. This eliminates the need to wait for the teacher's response or sift through lengthy explanations. Chatbots can transfer traditional education from static to dynamic, by incorporating interactive features and perhaps even fun characters. Chatbots can make the learning phase more engaging and spark the students' curiosity, promoting more positive and effective learning environment (Molnàr&Szüts,2018,as cited in Lopez & Qamber, 2022,p.15).

Pre-programmed chatbots can identify individual learning styles. This new ability to adapt with each user's performances allows chatbots to deliver more relevant and interesting experiences ultimately, this personalized approach can build trust among the users, enhance the connection they feel about chatbots, and even motivate them to keep learning (Molnàr&Szüts,2018,as cited in Lopez&Qamber,2022,p.15).

AI powered bots show a great potential to improve the four skills when it comes to learning a language. It creates a comfortable and personalized learning environment for each individual, meeting their learning needs. Conversation can be really interesting and cover a variety of communication skills including listening, speaking, reading and writing. Chatbots provide a less intimidating training partner compared to human interaction. Learners can use conversation software for more independent practice outside the classroom setting, increasing opportunities to talk, review lessons, and share pieces of information (Chun & Lee, 2021;Kim, 2017;Kim, 2018; Dizon, 2020, Kim,2018,as cited in Yang,2022,p.46).

AI can play an important role as a teaching tool for language learners. The conversational program can be used as an addition to teach the English AI powered bots can help learners work on data collection, basic analysis and visualization. This helps the learners spend more time on higher order thinking activities. It can also be a very beneficial tool when looking for a basic knowledge such as: searching for new concepts or meaning or unknown words. Since a large amount of factual information is stored as big data, AI technologies can

efficiently provide students with the knowledge they need at the moment they want (Yang,2019;Kim,2019, as cited in Yang,2022,p.46).

AI conversational bots help the learners to improve their English pronunciation though careful analysis of both pronunciation and intonation. These programs provide personalized guidance to learners. They can provide natural interaction dialogues that allow the learners to practice their English repeatedly. In another word, conversational programs help create a learning environment rich with linguistic input making up for lack of real conversations in English(Yang,2022,p.49).

AI powered bots can be a turning point for language learners by reducing their fears (emotional factors), unlike potentially stressful interaction with teachers or friends. As, students feel more comfortable having conversations with chat programs, which encourage them to practice the language even more. It is important to mention that AI chatbots provide less critical environment for error correction and that allows the students to focus on practicing their English freely and be more engaging. This enhances attention, focus and overall engagement in the learning process(Yang,2022,p.49)

2.1.2 Frequently Used Chatbots among Students and Teachers

Research is currently focused on developing AI powered chat, but their role in the educational field has not yet received significant attention. There is an urgent need to understand the opinions of the students and the teachers about the use of these robots in learning and opens the door to a promising field of research (Yang, 2021, p.45).

—Educational institutions may need to rapidly adapt their policies and practices to guide and support students in using educational chatbots safely and constructively mannerl. effectively (Baidoo Anu & Qwusu Anash, 2023, as cited in Labadze, Grigolia & Machaidze, 2023, p.13). In other words , learning environment (universities and colleges) require a quick adjustment to their systems , enabling students to benefit from educational chatbots responsibly and effectively.

—Nowadays, most text-based educational chatbots are implemented in mobile phone messaging services such as Facebook Messenger, WhatsApp, or Skypel (Chocarro, Cortiñas & Marcos-Matás, 2021,p.03). It states that in the field of education, a large percentage of text chatbots designed for learning purposes are currently integrated with mobile messaging platforms such as social media platforms, as everyone shares personal accounts on these applications.

The world has recently witnessed a surge in the development of sophisticated and capable conversational bots. These include chatGPT and Google Bard. They stand out as the most impressive AI powered chatbots. ChatGPT is powerful language model that was developed by openAI in November 2022. It was the reason behind the widespread of these bots. ChatGPT offers a widely accessible AI companion for everyone. Whereas, in May 2023 GoogleAI launched chatGPT's competitor called —Bard chatbots. Both Google Bard and chatGPT are two large chatbots that rely on huge language models that are trained on huge datasets of text and code (Alzubi et al, 2022; Rahman et al, 2023; Rudolph et al, 2023, as cited in Labadze, Grigolia & Machaidze, 2023 p.02)..

These abilities allow them to generate text, create content and provide useful answers to questions. Moreover, they differ in the type of data they are trained on. Bard thrives on the ever changing internet, making it a real time expert on current events. In the construct, chatGPT focuses on books and articles which likely leads to more accurate answers to traditional research questions. This distinction highlights the tradeoff between staying up to data and providing reliable information based on a good research (Alzubi et al, 2022; Rahman et al, 2023; Rudolph et al, 2023, as cited in Labadze, Grigolia & Machaidze, 2023 p.02).

Studies have shown that teachers are significantly using chatGPT more than students for a variety of reasons. Teachers can benefit from its capacities when it comes to lesson plan or when generating innovative ideas and diverse sources that suits educational purposes (Hostetter, Call, Frazier, James, Linnertz & Nestle, 2023, as cited in Elkhodr, Gide, Wu & Parwish, 2023 p.71).

Countries such as United States of America, the United Kingdom, Japan and China are placing artificial intelligence at the top of their national plans and priorities to anticipate a better future even in South Korea the Ministry of Education support the active use of AI technologies with the aim of reducing educational gap caused by the pandemic (Hong & Choi, 2020, as cited in Yang, 2022 p.45). However, it comes with its drawbacks.

Italy became the first western country to ban chatGPT (Brown, 2023, as cited in Labadze, Grigolia & Machaidze, 2023 p.12). In unprecedented move, Italy has banned chatGPT becoming the first western country to take such a bold step while the ban was temporary it sparked important discussion about the risks of the large language models to privacy and data security. Its data protection watchdogs have expressed concerns about how chatGPT collects and uses user data for training purposes. There have been also concerns that young users could be exposed to inappropriate content due to the lack of age authentication.

ChatGPT exceptional ability to generate clear answers represents a real dilemma in the field of education. This functionality raises concerns among teachers especially the fear of using it unethically. This fear leads some schools to restrict access on schools networks. This follows a survey conducted by Mhalanga which confirmed the teachers' concerns about the students fully relying on chatGPT, which underscores the need for responsible and ethical use of this technology (Maniar,2023p.01).

Without forgetting to mention that for the sake of preventing potential cheating on school work and assignment New York have banned the use of chatGPT in schools. This way they can maintain a fair and equitable educational environment and prevent any disequilibrium in equal opportunity (Elsen-Rooney,2023; Li et al.,2023,as cited in Labadze,Grigolia &Machaidze,2023p.12).

Another educational AI bots that was launched 2017 called Ada bot. It provides students with personalized learning experience by answering questions, providing feedback and facilitating individual learning. However, they exhibit some limitations in their ability to understand complex inquiries, which may lead to misinterpreting context and providing inaccurate responses. Therefore Ada is valuable assistant for students with simple tasks while it is recommended to use a human tutor to explain complex topics(Kabiljo et al.,2020;konecki et al.,2023,as cited in Labadze,Grigolia&Machaidze,2023p.03)

Moving on to another AI powered chat called —Habitica that was launched in the year of 2013. Habitica emerged as a solution to the challenges of promoting positive academic behaviors in students. This innovative strategy turns traditional tasks, assignments, and school schedules into a fun game (gamification). Habitica makes the learning more exiting for students, helping them persevere in their studies and build a positive study habit in the long term (Sales et & Antunes 2021;Zhang 2023, as cited in Labadze, Grigolia & Machaidze, 2023, p.03).

As AI chatbots become more popular, educational and business options are becoming more available. As example of this is the chatbot App Andy, which is a text-based chatbot developed by ZTO labs specifically for learning English. Andy provides learners with valuable resources such as vocabulary dictionaries and grammar lessons. Notably, it provides corrective feedback on the user's sentences as provides correct example sentence or additional explanation when errors are detected. (Kim,Shin,Yang &Lee,2019,as cited in Yang,2022,p.46).

Google assistant , which is one of the pioneers in the field of voice chat programs, Google Assistant is present in smart speakers and other devices , and enables interactive one-on –on conversations. Using simple voice commands, Google Assistant enables users to accomplish everyday tasks like browsing the internet , organizing appointments, , and adjusting phone settings. It also features the ability to conduct more natural conversations using language closer to human speech rather than automated voice .In addition to the ability to perform practical tasks(Kim, Shin,Yang & Lee, 2019,as cited in Yang, 2022, p.46)

Kuki, formerly known as Mitsuko, is a virtual assistant created by Steve Worswick using advanced artificial intelligence technology it can understand and respond to text and voice commands ,although initially text based , Kuki has evolved to handle voice conversations through speech recognition and synthesis technology . Unlike preprogrammed chatbots , Kuki learns and analyzes real –life conversations to understand keywords and context . This allows Kuki to make logical decision and answer questions thoughtfully(Kim,Shin,Lee, Kim&Yang,2019; Sepešiová,2021,as cited in Yang, 2022, p.46).

2.1.3 Mostly Used Chatbots within Universities

The digital information revolution is changing every aspect of life, and the educational system is struggling to keep up with this rapid development. To prepare the next generation for the digital age, universities and colleges are redesigning their curricula. This includes the inclusion of high-level technical subjects across all academic disciplines, including journalism, engineering and medicine. Leading educational institutions in the USA, Canada and the UK are at the forefront of this trend. Not only are artificial intelligence (AI) courses available, but some argue that all students should study AI, regardless of their college major (Kamouche 2022,p.112).

Another technology that is bringing about radical changes is quantum computing, which is greatly impacting governments, institutions, and industries. Therefore, it has become increasingly necessary to include them in educational programmes (Kamouche, 2022, p.112).

Georgia State University is tackling the —summer melt phenomenon, in which students accept college offers and then never actually enroll, with the help of artificial intelligence. The university found that many students were stuck with simple obstacles such as completing immunization records or needing assistance with course registration (Alexander et al., 2019, as cited in Akinwalere &Ivanov, 2023,p.05) . To overcome this challenge, especially with 2,000 phone calls received daily during the beginning of the semester, the university developed —Pounce, an intelligent robot (chatbot) that answers students‘ frequently asked

questions around the clock. —Pounce is available via text messages, which is a convenient method for students, and during its launch it answered more than 200,000 questions, thus contributing to the tremendous success of reducing the —summer thaw rate by 20% (Alexander et al., 2019, as cited in Akinwalere & Ivanov, 2023, p.05) .

It is also noticed that many educational institutions in Malaysia have turned to using chatbots to help answer the visitors' inquiries on their official websites. Sunway University is one of those universities that welcomed the idea of AI chatbots in the education field. Sunway University uses a rule based chatbot called —consellor to handle queries on their website. That is to say, this AI conversational chatbot relies on menu driven options. So users can select an option or a topic from the provided list. However, if their question is not available they will be automatically directed to a live agent, because the consellor chatbot is not supported by natural language processing (Tan, 2023, p.09).

The Malaysian universities websites rely heavily on rule based chatbots, which act more as menu-based systems than as conversation partner. These robots can only respond to users inputs that exactly match their pre-programmed choices, which are often presented in a form of buttons or a list of options. The frustration stems from the robots' inability to understand the natural flow of the human language (NLP). These limitations coupled with the lack of situational awareness in these chatbots, result in an unsmooth and often unhelpful user experience (Tan, 2023, p.13).

ST. John university chatbot named johny that was made in order to provide support for users inquiries on the university website. It is equipped with both rule based and NLP capacities. This allows it to effectively address the users needs. Furthermore, johny boasts multilingual support allowing the users to select their preferred language within the chat section (Tan, 2023, pp.10-11).

The university of Chicago Loyola joined them too with a chatbot called Luie. It is a conversational AI tool developed by Loyola university Chicago to deal and manage the university's website inquirers. It can also understand NLP, however, its scope is limited to the campus visit information (Tan, 2023, p.12).

Washington State University partners with Cialfo to promote international recruitment. A new partnership between Washington State University and Cialvo, an educational technology startup, has been announced, aiming to expand the university's international recruiting efforts. Cialvo's AI-powered Explore platform will be used to reach

more than a quarter of a million students in international high schools. The platform provides an interactive network that connects universities, high school counselors, parents and students, facilitating the recruitment process and making it more efficient (Akinwalere & Ivanov, 2023, p.05).

Rensselaer Polytechnic Institute provided a unique language learning experience. This experience turns any classroom into an environment simulating any city in the world through panoramic display technologies that cover all the walls. Within this virtual environment, students interact with AI-powered characters, allowing them to practice conversational skills, improve their vocabulary, correct their exits, and deepen their knowledge of the target culture. But beyond the educational benefits, another technology is generating controversy. Facial recognition systems are used to monitor student interaction and expressions within classrooms (Smart Classroom Behavior Management System, Smart Campus). This information is presented on a dashboard in front of the teacher, raising questions about the limits of educational monitoring (Janalta Interactive, 2021, as cited in Akinwalere & Ivanov, 2023, p.6) .

AI (Artificial Intelligence) is currently being leveraged to improve foreign language teaching. In January 2018, Microsoft Research Asia and Pearson Group concluded a strategic cooperation agreement to strengthen the partnership between artificial intelligence and English language education. Earlier, the two sides cooperated to produce "Long Wen Xiaoying", an interactive English language learning program powered by artificial intelligence technology. Acquiring foreign language skills is crucial because it applies to all ages and educational levels, from Key Stage 1 and 2 through to higher education and lifelong learning (Pearson, 2021, as cited in Akinwalere & Ivanov, 2023, p.05).

To ease the burden of exams on teachers, artificial intelligence companies such as GameLearn, a Microsoft partner, are stepping up. GameLearn's AI automates exam creation, moderation, and marking, resulting in automated efficiency and individualized student learning. This intelligent software also protects large-scale exams by identifying suspicious activity and providing forensic evidence to ensure exam integrity (Pearson, 2021, as cited in Akinwalere & Ivanov, 2023, p.05).

Professor Kellerman from the University of New South Wales (UNSW) in Sydney designed an engaging learning environment for an engineering class. Use Microsoft Teams as a base and Microsoft Stream for video recording. To efficiently handle student queries, Professor Kellerman used a question bot (QBot) that assigned relevant queries to teaching assistants. Question and answer pairs were leveraged to create a knowledge base, allowing the

bot to search for previous answers that may be hidden in older conversations, as well as respond to new student queries. Students can still request a response from the teaching assistant if necessary. Furthermore, the robot can send time-stamped video samples to students and search transcripts of video lectures (UNSW school of Computer Science and Engineering,2021, as cited in Akinwalere &Ivanov,2023,p.04).

Thanks to the use of these technologies, Professor Kellerman has succeeded in creating an AI-powered learning community. Students welcomed this modern teaching method, which led to the student satisfaction rate with the course rising to 99 percent (UNSW school of Computer Science and Engeneering,2021,as cited in Akinwalere&Ivanov,2023,p.p.04-05).

In a partnership with Microsoft, MIP Politecnico di Milano is creating Flexa, a new digital platform based on artificial intelligence and Microsoft Azure to help students assess their professional skills and obtain personalized information that will help them. To bridge any gaps between their current education and their future career goals. Taking into account the assessment process and the time available to students, the Flexa platform helps design individual learning paths. In addition, Flexa seeks to meet lifelong learning needs (Alexander et al., 2019, as cited in in Akinwalere & Ivanov, 2023,p.04) .

In addition, khan academy a non-profit organization in the USA has launched its AI chatbot, coincided with the wider release of GPT-4. khanmingo is an AI powered teaching assistant that appeared in March 2023. Khan Sal the founder of the academy is convinced that when properly supervised khanmingo can be a very powerful tool. Today thousands of people including teachers and learners at khan academy’s lab are logging in and it is expected that approximately 11,000 people will be using it in a formal class setting in the USA. Khanmingo is working on enhancing the learning by making it more personalized and making the students more engaged as well as freeing up the teachers for more complex jobs and duties (The UNESCO, 2023, p.12).

2.1.4 Ethical Considerations for Using AI Chatbots

Artificial Intelligence ethics emerged at the beginning of the twenty-first century as the capabilities of artificial intelligence systems increased, prompting scientists and policy makers to develop the Asilomar Principles for Artificial Intelligence as a set of recommendations to ensure that these technologies are developed and implemented in an ethical manner, focusing on the safety and security of artificial intelligence systems, and promoting transparency and

accountability. Respecting privacy and human rights, with the aim of using artificial intelligence technologies for the benefit of humanity (Huang et al, 2022 as cited in, Tawfeeq, Awqati&Jasim,2023p.51).

Interest in the ethics of AI has increased recently, prompting many organizations and governments to develop their own rules and guidelines, such as the —European Guidelines for Trustworthy AI and the —IEEE Global Initiative on the Ethics of Autonomous and Intelligent Systems. These principles seek to ensure that AI technologies are developed and implemented in a responsible and ethical manner, focusing on key issues such as fairness and equality, accountability and transparency, privacy and security and the safety of AI systems. These principles demonstrate the growing diversity of thinking about the ethics of artificial intelligence, and the growing commitment to developing these technologies in a responsible manner (Taddeo et al,2019,as cited in,Tawfeeq,Awqati&Jasim,2023p.51).

The use of AI technologies, such as ChatGPT, raises ethical concerns about their impact on society. It is possible that the data used to train these algorithms reflects real-world biases, which may reinforce stereotypes and discrimination. Therefore, it is necessary to take steps to ensure the fairness and transparency of these technologies, . Addressing these ethical concerns is essential to ensure that AI technologies are used to benefit everyone (Buolamwini &Gebru,2018; Doshi-Velez&Kim,2017,as cited in,Tawfeeq, Awqati & Jasim, 2023, p.50).

Conversational intelligence chatbots with their ability to mimic human conversations raise significant ethical concerns because users can be misled into believing they are communicating with real humans, potentially compromising the principle of informed consent. Other concerns include the spread of misinformation, invasion of privacy and bias. Therefore, ethical guidelines must be established to ensure that conversational intelligence tools are transparent, informed consent is obtained, and responsibilities are defined. Addressing these concerns is essential to use these technologies responsibly and ethically (Rapp et al,2023,as cited in, Tawfeeq, Awqati & Jasim, 2023, p.51).

The ethical concerns surrounding chats go beyond simply misleading users. AI systems can become biased mirrors that reflect stereotypes and discrimination that already exist in society. This happens because the data used to train it may be biased, or the algorithms themselves may contain hidden biases (Caliskan et al., 2017, as cited in Tawfeeq,Awqati&Jasim,2023p.51)

As artificial intelligence advances and becomes integrated into various aspects of human lives, it becomes increasingly necessary to establish strict ethical codes and guidelines to ensure its responsible and fair use. These principles aim to ensure that artificial intelligence is not used for harmful or discriminatory purposes, and that it contributes to enhancing the well-being of society and achieving the common good (Jami et al.,2023,as cited in ,Tawfeeq, Awqati&Jasim,2023p.51).

2.2. AI Chatbots in the Algerian Universities

2.2.1 AI implementation into all Sectors: Start off

To achieve sustainable development and enhance capabilities in all sectors, significant national investments in AI and collaboration between government, academia, industry and civil society are crucial. AI has the potential to drive economic growth, social progress and environmental sustainability, but only if all stakeholders work together to define common goals, share knowledge and build public trust for responsible AI development (Izidi, 2023).

Algeria must stop its digitalization ambitions and move to firm and effective measures. The era of contemplating whether digitization is necessary or not has passed, as countries made great strides in this field a decade ago. It is time for the government to unveil a specific strategy on how to implement digitalization on the ground. This transformation is essential to enhance economic growth, provide advanced government services, and participate more effectively in the global economy (Izidi,2023).

To accelerate progress and achieve a prominent global position, Algeria must benefit from the expertise of its specialized community, especially in the field of artificial intelligence and technology. Similar to the success of China and Turkey, the financial investment in engaging these reputable experts will undoubtedly be offset by the benefits in the long term. Their skills and determination can overcome challenges, and unlike some inside Algeria, they are not burdened by the past. By creating a dedicated platform and strengthening cooperation, Algeria can leverage this tremendous strength in the community to achieve innovation and a brighter future (Izidi, 2023).

2.2.2 Algerian Intellectual Capital for Glocal Leadership

To achieve the aspirations of the people and join the ranks of leading countries in the world, Algeria must adopt a bold and proactive policy towards comprehensive development and modernization. If membership in the BRICS group is the desired goal, redoubled efforts

must be made and thoughtful plans must be developed to achieve this as quickly as possible. This requires the government to take advantage of all available human and material resources, whether inside or outside the country. This includes maximizing the benefit of the expertise and knowledge of the Algerian community abroad, which enjoy a high level of competence and professionalism in various fields. Effective implementation of this recommendation will push Algeria towards unprecedented levels of progress, including economic and social growth, enhanced security, and self-sufficiency (Izidi,2023).

To realize Algeria's aspirations to achieve a prominent global position and enhance the well-being of its citizens, a comprehensive and proactive approach towards development and modernization in all sectors is required. Achieving these goals requires quick action and strategic focus. To maximize its potential, Algeria must utilize its full human and material resources, both domestically and internationally (Iziri,2023).

This necessitates the active involvement of the Algerian community abroad, which is a group of highly qualified professionals in different fields. Their experience and financial resources can contribute significantly to Algeria's development process by: stimulating new investments and job creation through their international networks; improving the quality of life of all Algerians by contributing to progress in health care, education and infrastructure; (And strengthen Algeria's global profile by leveraging the influence of international diaspora networks(Iziri,2023).

To fully exploit this potential, the government should create dedicated programs to attract and retain Algerian talent abroad, and foster a collaborative environment that facilitates knowledge exchange and fosters innovation . Furthermore, recognizing the contributions of the diaspora Rewarding them will enhance their sense of pride and national belonging, strengthening a mutually beneficial partnership for the future of Algeria (Iziri,2023).

2.2.3 AI Promotion in Algerian Higher Education and Scientific Research

On Tuesday, January 10, 2023, Mr. Kamal Baddari, Minister of Higher Education and Scientific Research, chaired the launch ceremony of 2023, —the Year of Artificial Intelligence,| at the Higher School of Artificial Intelligence at the Sidi Abdellah University Campus, with the aim of advancing training in various scientific institutions affiliated with the sector and including this subject within the offers of higher training and scientific research (MESRS,2023).

Mr. Baddari was accompanied by Mr. Yassin Walid Mahdi, Minister of Knowledge Economy, Emerging Enterprises and Micro-Enterprises. During his participation, the Minister stressed that the higher education and scientific research sectors will continue artificial intelligence activities in three areas: education, learning artificial intelligence, and preparing for artificial intelligence (MESRS,2023).

This is being achieved by establishing a Scientific Council on Artificial Intelligence under the Ministry of Higher Education and Scientific Research, which includes experts in the fields of AI ethics and education. In addition, he stressed the importance of strengthening cooperation with the Ministry of Knowledge Economy, micro enterprises and emerging enterprises. The latter will help the university train students on how to develop their institutions for the benefit of the national economy. For his part, Mr. Yassin Walid Mahdi stressed the importance of supporting young entrepreneurs to launch their small and emerging projects by giving them the opportunity to contribute to achieving economic prosperity at the local, national and global levels (MESRS,2023)

2.2.4 AI Promotion by the University of Skikda

Artificial intelligence (AI) is changing the world, serving as the foundation for a robust information-based economy. It is the driving force behind digital development and paves the way for profound social and economic changes. Algeria, with its wealth of human resources, is well placed to embrace these new trends and keep pace with rapid technological developments (Simoud& Dahmani,2022,p.88)

The impact of AI will be widespread, affecting everything from government administration and healthcare to education, social mindset, and all aspects of daily life. It is worth noting that Sekikda University played a pioneering role by establishing the first artificial intelligence facility in Algeria. This pioneering spirit continued when a team of dedicated academics and students embarked on a daring scientific adventure. After studying the basics of artificial intelligence through software applications in environmental monitoring, healthcare and even early cancer detection, they were keen to push the boundaries (Simoud& Dahmani,2022,p.88).

The guidance of Algerian scientists residing abroad, who have already contributed to the technological progress of developed countries such as the USA and France, has proven invaluable. The team's efforts led to the creation of the core unit of the university's Artificial Intelligence Center, which focuses on high-performance computing. The ultimate goal is to

leverage artificial intelligence to address a wide range of economic, health and social challenges. This requires moving from traditional approaches to technology-enabled solutions, even if these solutions are not always perfect. To achieve this, science camps were established, preparing the ground for future developments. Further development is expected to be approved. The center aims to grow a skilled workforce by training more software research students. They plan to use a database processed by algorithms to identify proactive solutions that can be implemented in a timely manner. This, in turn, will allow the creation of a dense network of thriving new enterprises (Simoud& Dahmani,2022,p.88).

2.2.5 AI Promotion by the University of Mohamed Boudiaf

Mohamed Boudiaf University of Science and Technology in Oran announced the establishment of a center for artificial intelligence. This new project aims to be a center of excellence, bringing together researchers, students and faculty to collaborate and expand the scope of AI knowledge .This initiative from Mohamed Boudiaf University of Science and Technology confirms Algeria's commitment to embracing technological developments and consolidating its position at the forefront of artificial intelligence innovations. The AI Center is set to become a driving force for progress, contributing to Algeria's scientific and technological advancement while addressing societal needs and shaping the country's future (Ultraalgeria,2024).

Higher education institutions in Algeria are characterized by a diversity that combines ambitions, obstacles and hopes. On the one hand, it strives to keep pace with global scientific and technological developments, which pose quantitative and qualitative problems (internal and external) that require treatment. In order to overcome these obstacles, it becomes necessary to reconsider education systems and educational institutions and search for effective alternatives. Institutions must also bear responsibility for raising the efficiency of all their members, including employees, students, and administrative procedures. One of the most important possible solutions is adopting an e-learning platform and benefiting from artificial intelligence applications to enhance productivity and raise the level of education (Kebdani& badene,2021,p.158).

2.2.6 Algeria's National AI Enhancement Strategy

Monday, June 26, 2023, the members of the Scientific Council for Artificial Intelligence were installed at the National Higher School of Artificial Intelligence in Sidi Abdallah, in the presence of Mr. Yassine Mehdi Walid, Minister of Knowledge Economy,

Emerging Enterprises and Micro-enterprises, and Mr. Kamal Baddari, Minister of Higher Education and Scientific Research. Mr. Baddari, Minister of Higher Education and Scientific Research, stressed in his speech that —the development of artificial intelligence applications, especially in the fields of education, industry and economy, has become a necessity to raise the level of use of this intelligence and keep pace with the latest developments, especially in light of the dynamism that Algeria is currently witnessing (MESRS,2023). He supported his claim by pointing to the establishment of several educational institutions studying artificial intelligence, including the higher education of artificial intelligence and the higher education of Mathematics. He also pointed out that there are more than 50 universities that offer courses in artificial intelligence, in addition to 20 research laboratories for artificial intelligence and 30 other mathematics laboratories (MESRS,2023).

Algeria has unveiled its first national policy for research and innovation in the field of artificial intelligence, setting an important step towards a future that relies more on advanced technology (artificial intelligence). With this comprehensive strategy, we hope to build a society that values innovation and equips its members with the digital skills they need to succeed in this changing environment (Sawahel, 2021). The main goal is to enhance the competence of Algerians in the field of artificial intelligence through a multifaceted strategy that includes training, education and research initiatives. According to Abdelbaki Benziane, Minister of Higher Education and Scientific Research, the focus on capacity building will enable Algerians to better benefit from artificial intelligence as a powerful tool for development (Sawahel, 2021). The plan is not limited to higher education, but also aims to empower social and economic groups. It seeks to address the current obstacles hindering the country's ongoing digital transformation by encouraging the development of artificial intelligence applications. Thanks to the support of this comprehensive plan, which will also contribute to advancing Algerian development initiatives and nurturing a new generation of technology-literate individuals, Algeria is well positioned to play an important role on the global AI stage (Sawahel, 2021).

2.2.7 AI in Algerian Universities: Challenges and Ambitions

Mohieddine Djoudi, an Algerian computer scientist, believes that including AI education in both undergraduate and graduate programs should be a top priority for national AI policy. He believes that strong partnerships with the social and economic sector are necessary for artificial intelligence to contribute to supporting human learning through data analytics and other benefits.

The Algerian scientist Mohieddine Djoudi warns that implementing the national strategy for artificial intelligence will not be without difficulties. It identifies several major obstacles that hinder smooth implementation, including: Obsolescence of computers currently in use. Algerian society is late in adopting and using digital technology in general. Complete lack of awareness of artificial intelligence, especially within academic institutions (Sawahel, 2021).

To overcome these obstacles, djoudi suggests accelerating the process of integrating information technology into all aspects of societal life, including various economic and industrial sectors. It also emphasizes the pivotal role of the media in spreading awareness of artificial intelligence technology and simplifying its concept to make it easy to understand in secondary schools and the public and private sectors. Djoudi also stresses the necessity of creating an advanced technological infrastructure for the success of the strategy, which includes: Modern workstations high performance computing centers, reliable internet networks, cloud computing infrastructure (Sawahel, 2021).

According to Algerian computer science expert Mohieddine Joudi and university professor Bouraoui Seif Allah, universities play a pivotal role in disseminating knowledge of artificial intelligence and encouraging its applications in different areas of life. Judy believes that reviewing educational programs and content, as well as launching interdisciplinary research projects, is essential to making AI a core component of university education (Sawahel, 2021).

On the other hand, Seif Allah stresses the importance of setting short, medium and long-term goals for integrating artificial intelligence into Algerian universities . This includes introducing advanced technologies and covering all sectors, including the social and economic sectors(Sawahel, 2021).

Saifullah adds that universities should play a role in connecting the AI research community with those in industry or other research areas. Both experts stress the need to support applied research and promote innovation in the field of artificial intelligence. Seif Allah's role as lead author of a conference paper entitled —Artificial Intelligence in the Face of the Covid-19 Pandemic to Support Decision-Making in Algeriall indicates the commitment of Algerian universities to applying artificial intelligence in practical field (Sawahel, 2021).

Professor Bouraoui Seif Allah does not limit himself to advocating the teaching of artificial intelligence in Algerian universities, but also stresses the additional responsibility of universities, which is to enhance students' skills in the field of artificial intelligence (Sawahel,

2021). Saifullah outlines a multi-pronged approach to enhancing the position of AI within these organizations: Support applied research: Universities should effectively allocate resources and funding to research projects that develop practical AI solutions in different fields. Promoting innovation: An environment should be created that encourages new ideas and knowledge exchange in the field of artificial intelligence, and facilitate collaboration between students, faculty, and researchers. Keeping pace with modern trends: Curricula should include the latest developments, industrial concerns, and practical challenges in the field of artificial intelligence, with an emphasis on successful solutions. Bridging the research gap: Universities should play the role of a bridge between AI researchers, professionals in the industrial sector and related research areas such as smart cities, big data, cloud computing, social networks and energy (Sawahel, 2021).

Seif Allah believes that by implementing these measures, universities can empower students with the skills necessary to succeed in the artificial intelligence job market. This comprehensive approach will also strengthen Algeria's position as a leader in artificial intelligence innovation and research (Sawahel, 2021).

Saifullah sees that applying these steps will enable universities to provide their students with the necessary skills to excel in the artificial intelligence job market. This comprehensive strategy will further strengthen Algeria's position as a leader in artificial intelligence innovation and research (Sawahel, 2021).

Information and communications technology, or (ICT), is currently being effectively integrated into Algerian universities. The Ministry of National Education and the Ministry of Information Technology are leading this collaborative effort to modernize the educational environment (Kamouche,2022,p.119) .

Recognizing the important role that technology plays in education, Algeria has made it a top priority to create a national ICT plan. The Ministry of National Education is leading the implementation of this plan in cooperation with partners such as UNESCO, the European Union and other United Nations organizations(Kemouche,2022,p120).

Conclusion

In the field of higher education, chatbots are a revolutionary tool that provides rich opportunities to provide cutting-edge educational services that meet the needs of both teachers and students alike. Automated chats help improve the quality of education and raise the efficiency of the educational process by providing immediate access to information and

support, enhancing communication and interaction, and providing a personalized learning experience. Chatbots represent an exciting new technology that has the potential to dramatically improve the effectiveness and growth of higher education. Working together, educational institutions and experts can achieve great educational achievements through the ethical and responsible use of modern technology. One way universities are embracing these capabilities is by developing their own chatbots to meet the specific needs of teachers and students. It is necessary to emphasize the need to take into account the ethical and legal aspects of the use of chatbots in higher education. Steps to integrate chatbots into higher education are also relatively recent in Algeria. Some Algerian universities have begun experimenting with using automated chats to provide administrative services and educational assistance to students and professor

Chapter Three:
Research Methodology, Results and
Discussion

Chapter Three: Research Methodology, Results and Discussion

Introduction

This chapter is dedicated for the practical side of this research (research methodology, results and discussion). The purpose of this study is to explore the perception of master one students using the AI chatbots dependently or autonomously. This chapter describes the mixed method approach that we opted for, including the description of our sample. It also tackles the methods and the procedures that we followed in order to collect and analyze our data. After that, it talks about the ethical consideration and the limitations of the research. Then, it reveals the obtained data with some recommendations and suggestions, and ends with the general conclusion.

To achieve the goals of this research, this thesis delves into the relationship between AI-powered chatbots and student learning autonomy. It explores how students use these chatbots within the educational environment. The primary goal of this research is to determine whether AI-powered chatbots empower students to become more independent learners or promote dependence on these technological tools.

3.1 Research Design and Methodology

The exploratory research is the suitable choice when a topic has not been thoroughly investigated, it is obvious in our case that our research topic is new in the scientific area. Exploratory research offers a flexible framework, allowing researchers to explore a range of basic questions and hypothesis.

3.1.1 Mixed Method Approach

This dissertation has adopted for the exploratory research in order to build a base knowledge toward the use of AI chatbots among master one students majors in linguistics and didactics. Mainly to know whether it is being used in an autonomous way to support their learning process or they are fully depending on the AI tools. This study has employed the mixed method approach to take advantages of both qualitative and quantitative research approaches and provide a more thorough grasp of a topic than any approach could on its own. The authors opted for the questionnaire using the quantitative method in order to find out to what extent the M1 English language students are using the AI tools. Moreover, the authors have interviewed some teachers of the English language department for quantitative purposes.

3.1.2 Participants' context and Sampling Techniques

The study included a convenience sample of 42 master one students from the English department at Ibn Khaldoun University of Tiaret, majoring in didactics and linguistics, as well as 03 English teachers from the same department. The purpose of this study was to have a broader understanding of how these technologies can foster either a total reliance and dependency or autonomy learning. The selection of participants was based on their desire to participate and accessibility. The results varied between males and females, while the target age group ranged from under 25 to over 45. Data collection consisted of interviews for the teachers and questionnaires for the students, guaranteeing a full comprehension and strengthens the findings in order to explore the perceptions and the attitudes of both towards using AI chatbots as an educational tool. The participants were told that their responses will contribute to a broader understanding of how do they perceive and use these AI tools.

3.1.3 Data Collection Methods and Procedures

The aim of this section is to talk about the students' questionnaire and the teachers' interview describing the way the researchers managed to collect their data.

3.1.3.1 Master One Students' Questionnaire

The students' questionnaire consists of four components. The first portion includes three types of questions: age, gender and major, in order to know more about the sample. The second section is about the most frequently used AI chatbots. This section uses multiple choice questions and the participant is supposed to tick one answer or more, in order to know which type of AI tool is being utilized among them. The third section represents three open ended questions to ascertain the challenges that the students are facing and if there are any improvements they can suggest according to their own experiences. The fourth section represents a Likert scale, where the participants are supposed to rate their level of agreement according to their attitude toward presented twenty items. The ranking start from strongly agree all the way to strongly disagree. The Likert scale' questions were indirect designed to determine whether the students are gaining self-directed learning through their interactions with the AI chatbots, or fully depending on it.

The questionnaire was printed on Tuesday, May 14, 2024, and the following day it was distributed to the selected sample, which consisted of first-year master's student's majors in

didactics and linguistics. The didactics students were having their second-semester exams, at the same time the linguistics students were revising for the next exam all together at the department door. This made us split the work, one of us went to the didactics students and asked for their permission and contribution after they finish with the exam. Thankfully, they have all showed acceptance and agreed on giving it back to the professor after they finish with it. The second one dealt with the linguistics students, where they really liked the topic and even showed some curiosity by asking different questions, all of which we answered. Then, we have met all set together.

3.1.3.2 The Teachers' Interview

The teachers' interview consists of direct and open-ended questions. A sample of three EFL teachers was selected from the English department at Ibn-Khaldun University at Tiaret. The selection was aimless and varied by gender, age, and expertise. For reasons of confidentiality, this dissertation avoids mentioning the teachers' names. The aim of this interview is to explore the university teachers' perceptions and attitudes towards the use of AI chatbots in education, particularly focusing on how these tools might foster autonomy or dependence among learners. Because we wanted a flexible approach to the interview that balanced effective data collection with in-depth exploration, we sent emails to the selected teachers asking them if they would like to participate in our interview. However, after finding out about teachers' busy schedules supervising students during their secondsemester exam period, we gave them two options to participate: an in-person interview or just have the interview questions delivered via email. The unanimous preference for conducting interviews via email facilitated streamlined data collection within a short period of time.

3.1.4 Data Analysis Methods and Procedures

This section discusses the specific methods and procedures used to analyze the data we collected through questionnaires and interviews. We will delve into how we analyzed quantitative data from closed-ended survey questions, open-ended questions all the way to the Likert scale, followed by techniques used to analyze qualitative data from open-ended questions.

3.1.4.1 Quantitative Data Analysis Techniques

Our data analysis required a mixed methods approach, reflecting the diverse question formats in the participant survey. As for the closed questions, we used the descriptive statistical approach. Paper-based responses were carefully entered into a Google Form, which automatically calculated the frequency of answers, generating relative frequencies. We further constructed frequencies and percentage tables to summarize response distributions, providing a clear picture of participants' preferences or answers.

The analysis of Likert scale data followed a preliminary thematic structure. After creating thematic categories that reflected the content of the questions, we used Excel to organize the data and present it for visualization. This process facilitated the creation of graphs that effectively represented the distribution of participants' responses on the Likert scale, providing insight into participants' attitudes or perceptions.

3.1.4.2 Qualitative Data Analysis Techniques

For the teachers' interview we opted for a thematic analysis approach. Open-ended questions required exploratory qualitative analysis. After a comprehensive review process to ensure familiarity with the data, we used thematic analysis. This iterative process involved identifying recurring themes and concepts within responses, allowing us to categorize and understand underlying patterns in participants' experiences or perspectives.

We dove into the teacher interview responses, reading them repeatedly. Then, we transcribed the interviews verbatim, preserving the teachers' original voices. However, we started by a concise comment before the three answers, allowing for careful analysis. After we finished presenting the given data we discussed them thematically with the help of the previous brief comments.

3.1.5 Ethical Considerations

In conducting our research, we ensured strict compliance with ethical guidelines. Thus, the authority was obtained from all participants, both professors and students. We explained to them the purpose, procedures and benefits of the study, with ensuring their right to withdraw at any time. We maintained confidentiality and privacy by storing information securely and sharing data only with authorized people. We avoided personal and embarrassing questions,

and participants were informed that their answers would be used for purely academic purposes. Risk mitigation strategies were implemented, by informing the interviewees that their names and emails would never be published or shared with anyone, while for students, their names and other information were not requested.

The study was designed to maximize benefits, achieve fair results, and ensure that the results are real and transparent. We maintained integrity through honest reporting of participants' data without tampering with or changing them for any personal gain. Institutional laws and guidelines were strictly adhered to, and consents were obtained before distributing the questionnaire and the interview. We also maintained transparency in our research objectives, methodology and findings, ensuring that data management protocols were strictly followed.

3.1.6 Limitations of the Research

At the beginning of our research study, we faced many challenges. We faced a lack of sources due to the novelty of our topic, which had not been addressed before. The dilemma was when we started looking for sources within the Algerian universities because the AI chatbots were not integrated from the first place. In addition, during data collection, we found that our sample was not available because students were taking their exams and teachers were busy supervising them. As a result, we conducted online interviews, which took a long time to receive answers.

3.2 Results/ Findings

3.2.1 The Students' Questionnaire Results

The following questionnaire was designed to answer the research questions. This questionnaire was divided into four different yet complementary sections.

3.2.1.1 Section01: Biographical Information

According to **Table 3.1** below, the participants were from different ages: Under 25 represents 88,1%; the participants between the age of 25 and 34 represents 11, 9% of the sample; while the ages between 35 to over 45 symbolize 00 %.

Table 3.1

Students' Age Category

Age	Number	Percentage
Under 25	37	88,1%
25-34	05	11,9%
35-45	00	00%
Over 45	00	00%
Total	42	100%

Figure 3.1

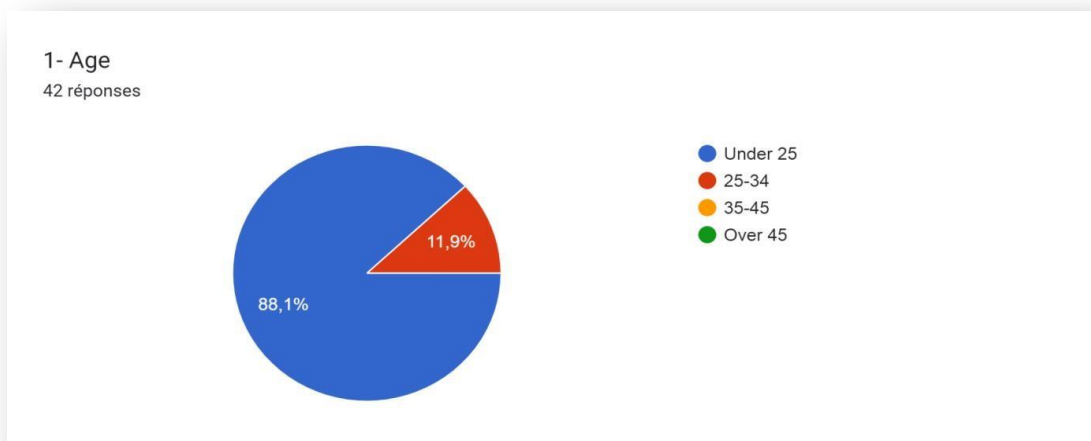
Students' Age Category

Table 3.2 shows that males were 14 representing 33,3% where the females were 28 representing 66,7%.

Table 3.2

Students' Gender

Gender	Number	Percentage
Male	14	33,3%
Female	28	66 ,7%
Total	42	100%

Figure3.2

Students'gender

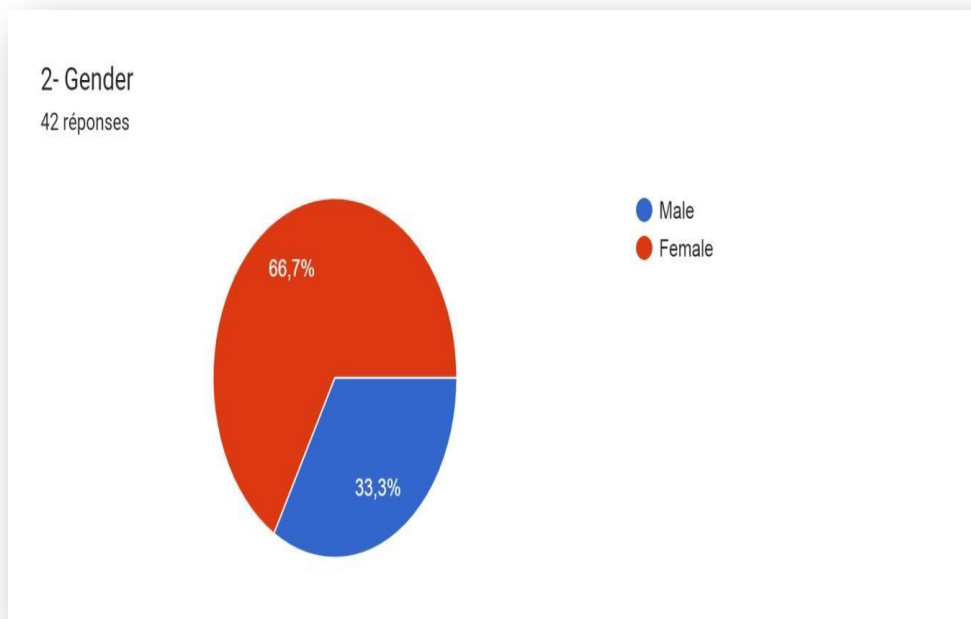
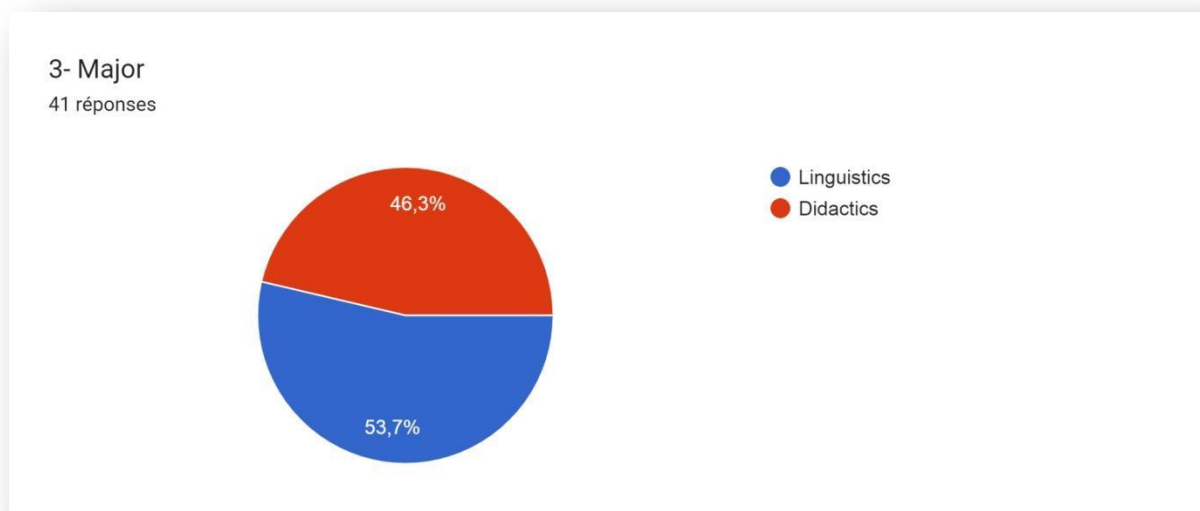


Table 3.3 shows that the participants were from both specialities where the linguistics students symbolize 53,7% which gives 22 students and the didactics students symbolize 46,3% which represents 19 students.

Table3.3*Students 'major*

Major	Number	Percentage
Didactics	19	46,3%
Linguistics	22	53,7%
Total	41	100%

Figure3.3*Students 'major*

3.2.1.2 Section02: AI chatbots Use.

Question 01: Which types of AI / chatbots have you utilized in your studies? (You can tick one or more options according to your case)

- 1- Language Learning Apps: These provide automated language quizzes and interactive exercises (e.g. Duolingo, Babbel).
- 2- Chat bots for Language Practice: These let students engage in real-time dialogues in English (e.g. HelloTalk, ChatGPT)
- 3- Language Generation AI: These generate language content, such as essays, stories or creative writing prompts (e.g. Chat GPT).
- 4- Speech Recognition Software: These transcribe and assess spoken language, helping students improve pronunciation and fluency (e.g. Google Speech-to-Text).
- 5- Text-to-Speech Tools : These convert written text to spoken language (e.g. Amazon polly).
- 6- Virtual Reality (VR) and Augmented Reality (AR): These create immersive language learning experiences for learners (e.g. Wonderscope, Oculus Rift).
- 7- Automated Assessment and Grading: These grade assignments, essays and quizzes (e.g. Turnitin, Gradescope).
- 8- Data Analytics and Learning Analytics: These collect and analyse student performance data (e.g. Canvas Analytics, Brightspace Analytics)
- 9- Other (please specify)
.....
- 10- None of the above.

Table3.4

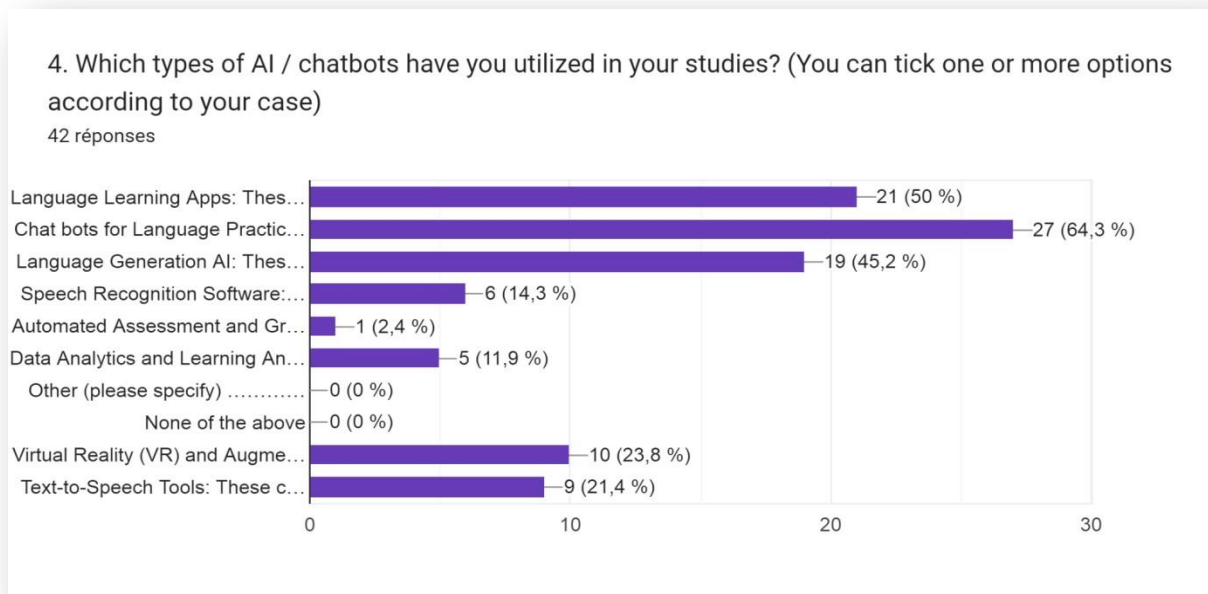
Most frequently used AI chatbots.

	Frequency	Percentage
Lge learning apps	21	50%
Chatbots for lge practice	27	64,3%
Lge generation AI	19	45,2%
Speech recognition software	06	14,3%
Text-to-speech	09	21,4%

VR and AR	10	23,8%
Automated assessment	01	02,4%
Data analytics	05	11,9%
Others	00	00%
None of the above	00	00%

Figure3.4

Most frequently used AI chatbots



The aim of this question is to know which types of AI chatbots are the most commonly used among the learners. The figure number 04 clearly shows that the majority of the participants opted for the chatbots that help them to practice their language. We can see that 27 (64,3%) participants find that chatbots for language practice such as: chatGPT and hello Talk help them overcome conversation fear, and provide them with instant feedbacks which make them more engaging. While 21 (50%) participants went for the language learning applications like: duolingo and babbel, for the reasons that these tools provide them with more personalized learning with their ability of developing enormous activities and feedbacks. For the language

generation AI; it is obvious that 19 (45,2%) participants said that they use these kind of bots. As this educational tools help them manage to do their essays in more creative way in addition to enhancing their writing skills. For the virtual reality and augmented reality the diagram shows that 10 (23,8%) participants opted for it. These bots can create an immersive language experiences for the learners. Moreover, a considerable population chose text-to-speech tools. 6 (14,3%) students said that they use speech recognition software, for many reasons such as: analyzing the spoken language, which help students identify areas for improvement in pronunciation and fluency. 5 (11,9%) participants went for data analytics and learning analytics, these tools collect and analyze performance data to monitor students' progress. An almost non-existent percentage consists of 1 (2,4%) participant chose the automated and grading for grading their assignments, essays... and so on. At the end we gave our sample the opportunity to mention unlisted bots or tools or to choose none of the above.

Notably, no participants reported using tools beyond those listed.

Question 02: How frequently do you use AI chatbots for educational purposes (please tick one option only)

-Daily -Weekly -Monthly -Rarely

Table3.5

Frequency use of AI chatbots

	Frequency	Percentage
Daily	11	26,2%
Weekly	08	19%
Monthly	03	7,1%
Rarely	20	47,6%
Total	42	100%

Figure 3.5

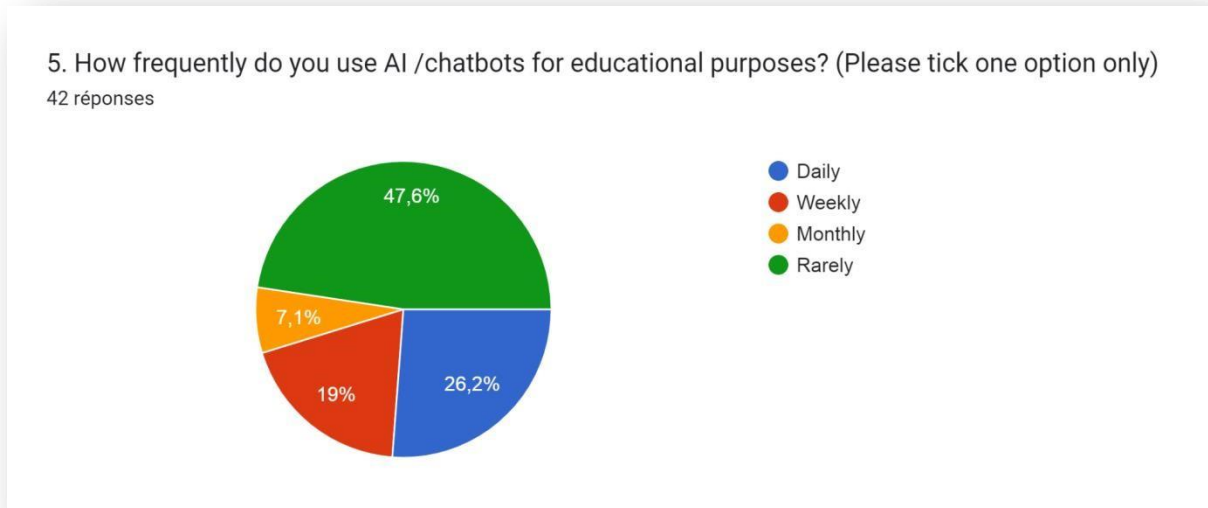
Frequency use of AI chatbots

Table 3.5 shows that 11 (26,2%) students said they daily use it. That is to say, their reliance on AI tools is so strong to the point they consult them frequently for even everyday tasks. However, the majority of our sample said that they rarely use the AI tools. That means, 20 (47,6%) of our participants find that AI chatbots do not hold much significance in their lives. 08(19%) participants had an alternative perspective, stating that they regularly utilize artificial intelligence, roughly once a week. The rest of the participants went for not using it continuously.

3.2.1.3 Section 03: Challenges and Improvements.

Question 03: What are the main challenges you have faced when using AI chatbots in your learning?

A significant percentage of our sample felt that AI bots are too easy to use, which may encourage over-reliance, and this may weaken research and critical thinking abilities. In addition, biases in the data on which AI algorithms are trained may be reinforced by the beliefs of its creator. This calls into question the objectivity and fairness of the information provided. While many see that the free versions often provide limited and perhaps unreliable information, and have difficulty performing complex tasks. They claimed that the premium features offer higher quality and functionality, but come at a monthly cost that can be restrictive, and this poses a real problem for them, particularly those with limited financial

resources. Other students believe that AI chatbots always face some kind of difficulties in understanding fine details and comprehending information, which may cause a serious matter specially when looking for in-depth research or original solutions. Most of our participants find AI bots inaccurate and often contain smaller datasets, which may negatively impact the desired results. This lack of transparency regarding sources can also make verifying the validity of information a hard task, especially for academic purposes. In addition, some users complain that AI systems misinterpret queries, fail at delivering messages clearly, and also have no sense of humor. whereas, the rest of them said they did not face any challenges because they do not use it to that extent.

Question 04: Do you have any suggestions for improving the use of AI chatbots in educational contexts, particularly in fostering autonomy?

The majority of our participants claimed that they have no suggestions or recommendations because they do not use it to the point they figure out what are the areas of improvements and weaknesses. A significant percentage of our participants said that they would like chatbots to be supported by reliable academic sources and guidance from experts, and cite the sources when providing the users with the desired information. The minority said that they would like the AI chatbots to adapt to individual learner needs through active learning from interactions and providing personalized support.

Question 05: How would you perceive an official and ethical integration of AI chatbots in the Algerian university?

Subsequent developments revealed that the vast majority of those enthusiastic about this idea were convinced that the introduction and implementation of this concept might represent significant progress in the field of education, thus supporting the proposal. This enthusiasm is due to the potential of this idea to bring about a radical change in the way education is provided. Others took a conservative stance. They acknowledge the promise of this idea while emphasizing the importance of ethics and law. They recognize the potential for positive change through this proposal, and want to ensure it is implemented in a responsible and ethical manner, so they are seeking to put safeguards in place to ensure it is implemented efficiently. A section of society strongly rejects the idea of using chatbots in education. Their argument is that chatbots, no matter how sophisticated they are, will never match the efficiency of human teachers. They fear that this approach will lead to raising a generation that lacks a work ethic and relies entirely on chatbots to complete their homework. Moreover,

they object to the idea of being taught by machines that do not have the ability to understand their individual feelings and circumstances.

3.2.1.4 Section 04: (the likert scale)Students' use of AI chatbots: Learning Autonomy/ Dependency.

- **Items focusing on the use of AI/chatbots for accessing and selecting learning resources.**

Item 01: Amongst all learning resources AI chatbots help me to access, I select the most valuable ones.

Item 02: AI chatbots help me to explore various resources, of which I select what best meet my learning needs.

Table3.6

Utilization and selection of AI chatbots

	ITEM01	ITEM02
SA	23	13
A	14	18
N	05	09
D	00	00
SD	00	02
Total	42	42

Figure3.6

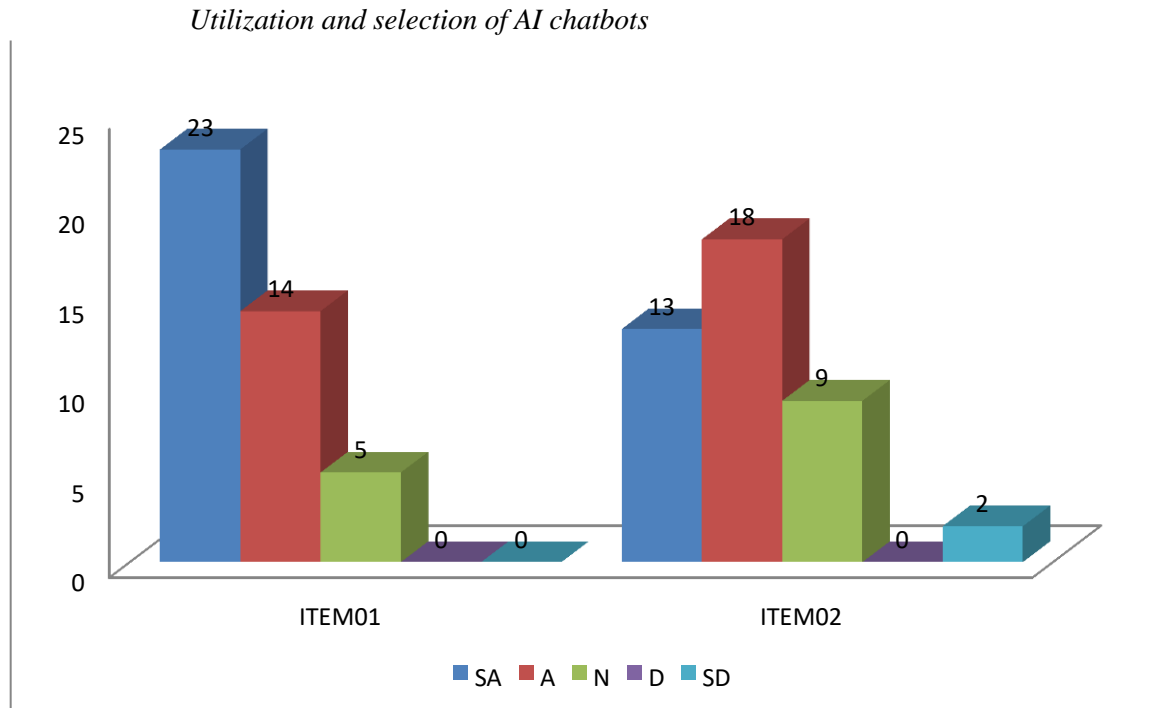


Table3.6 clearly shows that the majority of survey respondents expressed agreement or strong agreement with this sentiment, while a small percentage chose to remain neutral. Interestingly, almost no one in the survey disagreed or strongly disagreed with this statement.

- **Items related to the assistance provided by AI chatbots in completing assignments, gaining confidence, and empowering learning.**

Item 03: I always find it difficult to complete my assignments without relying on AI chatbots.

Item 04 : I feel confident in using AI chatbots to answer my burning questions without consulting my teachers every time.

Item 07 : AI chatbots provide me with the tools and resources to explore topics on my own.

Item 08 : I feel empowered to learn at my own pace (speed) with the help of AI chatbots.

Table 3.7

AI chatbots in education: A helping hand

	ITEM03	ITEM04	ITEM07	ITEM08
SA	04	06	11	06
A	08	12	15	15
N	09	08	07	15
D	09	12	08	04
SD	12	04	01	02
Total	42	42	42	42

Figure 3.7

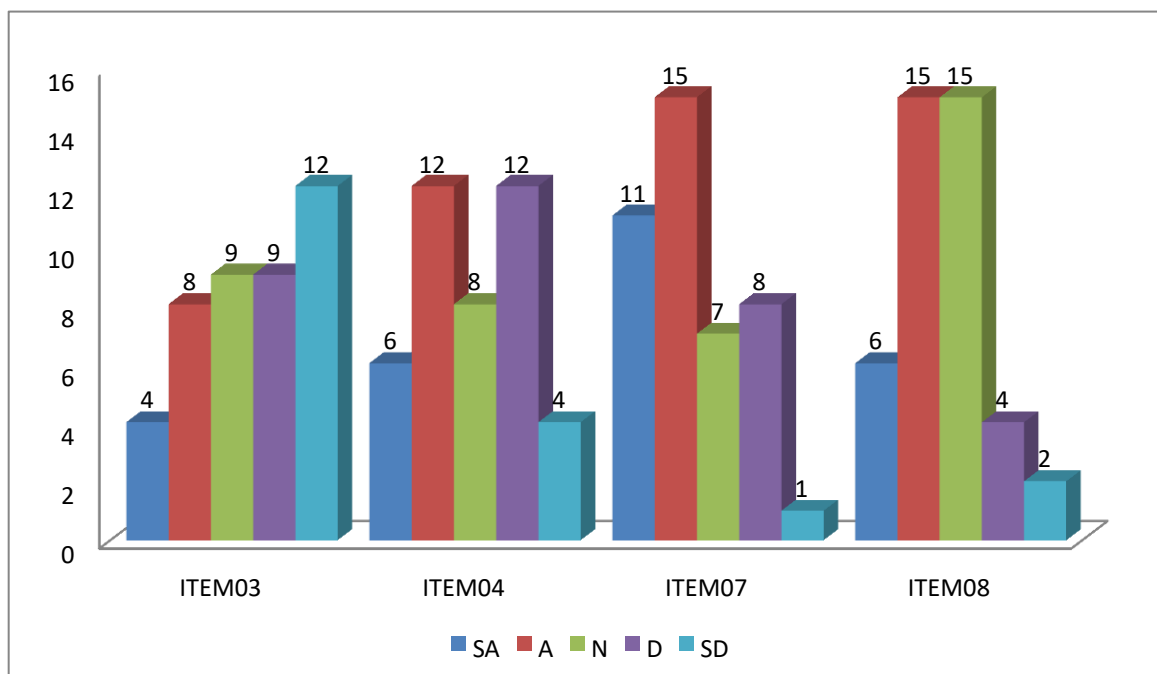
AI chatbots in education: A helping hand

Table 3.7 represents the participants' opinions about different items:

Their opinions on item 03 show their full reliance on AI chatbots to complete their school works were mixed. While a large portion of them felt comfortable processing it without the help of AI chatbots, a fair number of them agreed. However, nine students of them remained neutral and preferred to keep their opinions for themselves.

Item 04 shows an even division in opinions between supporters and opponents regarding the role of artificial intelligence-supported robots in the learning process. The supporters have argued that these robots are capable of providing advanced capabilities far beyond what human teachers can provide. It is distinguished by its great effectiveness in the field of specialization, as it provides partial explanations, in addition to its availability round the clock, enabling them to access information at any time and so forth, which is unachievable with their teachers. On the other hand, much similar percentage of the opponents see that the human teachers play a great role in guiding the students, not only academically but also in developing their social and personal skills. These opponents argue that these technologies, despite their technical competence, do not have to provide the same level of support that human teachers have, which is the basis for the student's personal development and self-confidence. While a very small percentage preferred to keep their opinions for themselves and chose to stay neutral.

Items 07 and 08 show that the majority of participants agree that AI-powered chatbots provide them with the necessary tools and resources to explore topics independently and make them feel more engaged and empowered to study at their own pace. These participants believe that when using those technologies they become able to access information quickly and more effectively. Which help them enhance their ability for more self-directed learning without the need to constantly ask for the guidance their teachers. Additionally, they also believe that AI-powered chatbots can guide them develop their research and problem-solving skills because of its capacity of directing them to relevant sources. On the other hand, a significant percentage of participants indicated their disagreement with this opinion. These opponents believe that chatbots, despite their ability of delivering the desired queries, they still lack the human guidance. These opponents see that the human guidance is that necessary for many reasons, mainly, for better understanding and application of the provided pieces of information. These participants see that the heavy dependence on the AI-powered chatbots might reduce the human interaction.

Moreover, they also argue that these bots might reduce motivation and discipline which effect the overall learning experience. The remaining percentage of participants chose to remain neutral, indicating that they have balanced attitudes towards the use of chatbots in education. Overall, the survey reflects that there is broad agreement on the benefits of AIpowered chatbots in providing educational tools and resources, with some differences of opinion on their impact on the quality of overall education and the essential role of human teachers.

-Items expressing concerns and impacts of AI/chatbots usage on personal confidence and adaptability .

Item 05: I feel anxious during exam preparation without access to AI chatbots.

Item 06: I am unsure how to do a given task without first consulting an AI chatbots.

Item 09: I feel addicted to and overwhelmed by the use of AI chatbots.

Item 10: I am losing confidence in my own abilities to solve problems because of frequent use of AI chatbots.

Item 14: I sometimes feel like AI chatbots are doing it all for me.

Item 16: I passively accept information from AI chatbots without critically evaluating its accuracy or relevance.

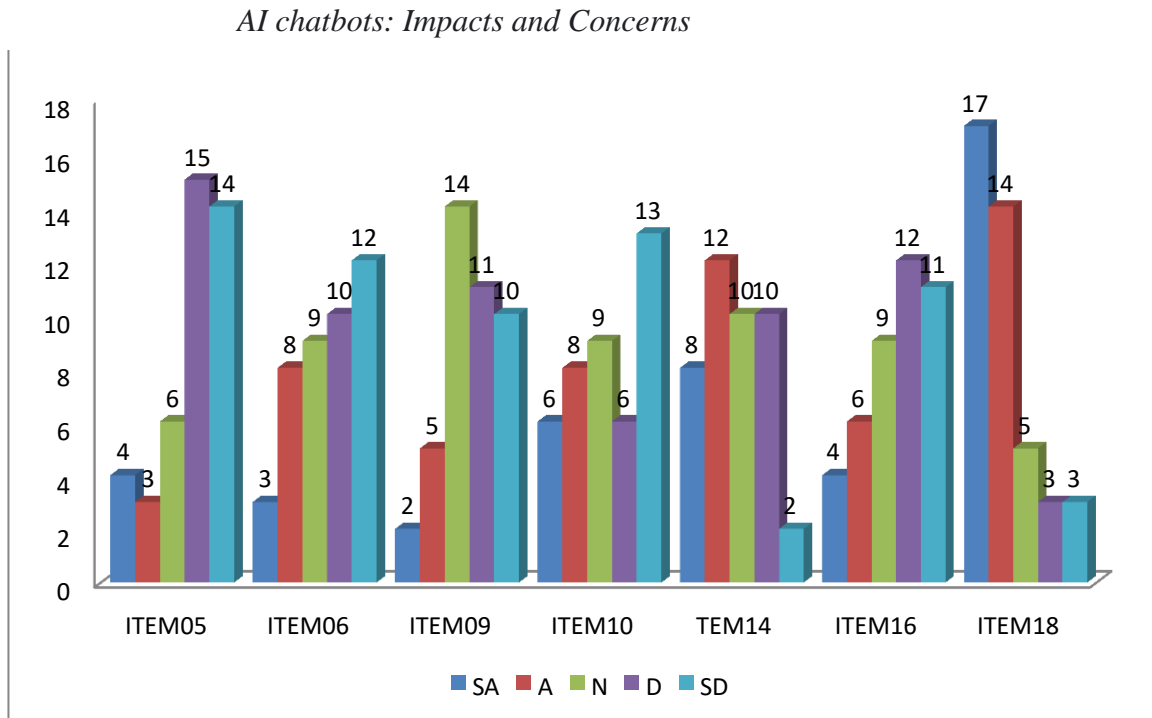
Item 18 : I am worried that my reliance on AI chatbots might make me less resourceful and adaptable learner.

Table3.8

AI chatbots: Impacts and Concerns

	ITEM05	ITEM06	ITEM09	ITEM10	ITEM14	ITEM16	ITEM18
SA	04	03	02	06	08	04	17
A	03	08	05	08	12	06	14
N	06	09	14	09	10	09	05
D	15	10	11	06	10	12	03
SD	04	12	10	13	02	11	03
Total	42	42	42	42	42	42	42

Figure 3.8



Tables 05,06,09,10 and 16: An analysis of students' performance on the use of chatbots supported by artificial intelligence in preparing for exams showed mixed opinions. The majority of students emphasize the importance of traditional education in the classroom and revision under the supervision of the teacher. They also insist on the idea that students should rely on these bots developed by humans and equipped with information to do their homework in doing their homework. Its source and the extent of its validity are not known. It is a dangerous matter, and it is clear that artificial intelligence bots do not provide them with sufficient and accurate information that they need for their exams. They also believe that the idea of feeling anxious and lacking in self-confidence if they do not seek the help of these bots is a ridiculous idea. The rest of the students showed a split in opinions, as there were some who were undecided about the role of these automated conversations. While others expressed their dependence on them to the point that makes them feel stressed and feel inferior in the event of their absence, because of their total dependence on them in their exams, as previously mentioned, and their homework. Many students who are looking for easy ways resort to excessive reliance on these tools, and this dependence can generate a kind of laziness, which leads to addiction to these bots.

Tables 14 and 18: A formal review of participants' responses to AI-powered chatbots revealed a worrying issue. A large majority expressed a feeling of over-reliance on these tools, potentially addictive. This dependence manifests itself in an inability to complete schoolwork or assignments independently, highlighting a potential obstacle of developing the self-directed learning skills that are essential. These participants expressed their fear and tension towards their over-reliance on these AI bots. This worry is a result of processing the notion of becoming so addicted to the point they cannot move a step forwards without the assistance of those automated bots. Which can create a real barrier between them and thinking critically or creatively. The minority showed a disagreement with the statement and this could be because they are indolent to the extent they do not mind the idea of letting AI chatbots do the heavy work for them. The remaining participants did not show any interaction with the statement.

- Items highlighting the positive impact of AI/chatbots on learning enhancement and self-reflection.

Item 11: AI chatbots provide me with personalized learning experience through content and activities relevant to my strengths and weaknesses .

Item 12: I use AI chatbots to practice my problem solving skills and receive feedback on my own attempts.

Item13: AI chatbots prompt me to critically analyze information and come to my own conclusions.

Item 15: My understanding of subject might be incomplete if I do not use AI chatbots

Item 17: I struggle to come up with my own research questions without AI chatbots' assistance.

Item19: I use AI chatbots as an initial step for further research, allowing me to dig deeper into topics on my own.

Item20: AI chatbots provide me with self-reflection opportunities to assess my understanding and identify areas for improvement.

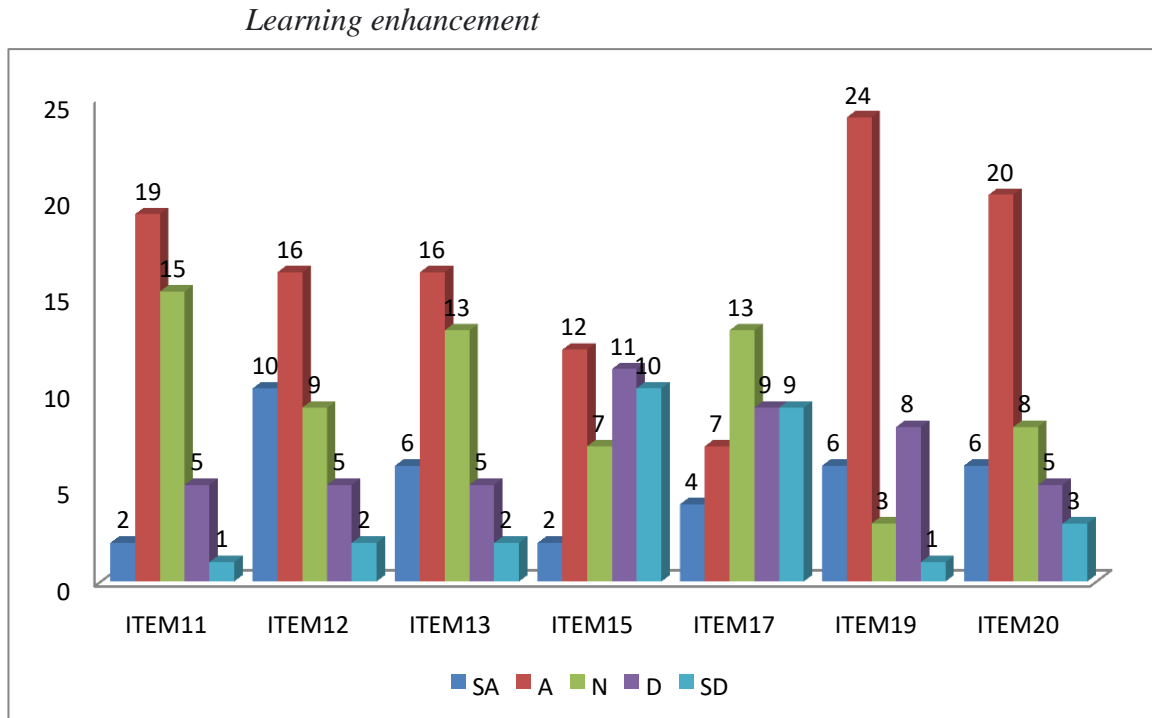
Table3.9

Learning enhancement

	ITEM11	ITEM12	ITEM13	ITEM15	ITEM17	ITEM19	ITEM20
SA	02	10	06	02	04	06	06
A	19	16	16	12	07	24	20
N	15	09	13	07	13	03	08

D	05	05	05	11	09	08	05
SD	01	02	02	10	09	01	03
Total	42	42	42	42	42	42	42

Figure3.9



Items 11,12,13,19 and 20: When analyzing participant responses regarding the effectiveness of AI chatbots in providing a personalized learning experience, the data reveals distinct trends. The majority of participants agreed that AI chatbots significantly improve the learning experience by providing personalized support, adaptable learning steps, and instant feedback. They emphasized on how these technologies can provide personalized learning experience and help them practice problem solving skills. In addition, these bots are available 24/7 and can help them work on their areas of strengths and weaknesses by providing them with instant feedbacks. However, a large portion of participants remained neutral, neither fully supporting nor rejecting the idea. On the other hand, a smaller group of participants disagreed, highlighting concerns about AI's limitations in understanding the nuances of individual needs, potential biases within AI algorithms, and lack of emotional intelligence and human interaction in learning. This diverse distribution of responses underscores the general

consensus about the potential benefits of AI chatbots, while also reflecting the presence of some doubts and differing viewpoints among participants.

Items 15 and 17: When analyzing participants' responses regarding their ability to understand their subjects and generate their own research questions without the assistance of AI chatbots, the data reveals distinct trends. The majority of participants did not agree with the statement, which suggests that they are proficient in their studies and that they are confident enough in their ability to explain, understand, and investigate their study materials, subject matters, and come up with their research questions independently, without consulting artificial intelligence chatbots, that do not enrich or benefit them. That is to say, they have a high ability to perform various academic tasks on their own, they also highlighted their strong research and critical thinking skills, which allow them to formulate questions without relying on chatbots supported by artificial intelligence. However, a large percentage of participants disagreed, and expressed their reliance on chatbots supported by artificial intelligence for inspiration, structure, and clarity in their research. They believe that these bots have high intelligence, which can perform all academic tasks excellently without errors. In addition, they may see that these bots have the ability to address topics and provide immediate, useful and different solutions that suit and fulfill their needs. The remaining participants were neutral. This diverse distribution of responses underscores the general confidence among participants in their own abilities, while also reflecting the marked reliance on AI chatbots among a significant minority, and ambivalence or hesitation among the rest.

3.2.2 The teachers Interview Results:

Question 01: Have you used AI and chatbots in your teaching experience? If so, could you describe how you've integrated them into your courses?

Comment 01: All participants said that they have used AI chatbots within their teaching.

P01 sees that they are just assistant tools, used solely to prepare lecture plans with their brainstorming sections(warm-up), objectives, and intended learning outcomes. They also aid in preparing reflective tasks and assignments, such as scenario-based questions.

P02 says that she has been using AI based chatbots for brainstorming and ideas generation with an attempt to differentiate instruction and personalized learning.

P03 claims that he has being using the AI chatbots for decades not only when it became that famous. He said that he uses DeepL for traduction purposes.

Question 02: What types of AI chatbots have you found most effective in facilitating teaching and learning, and why?

Comment 02: The participants' answers differed from one to another according to their areas of use.

P01 demonstrated using chatGPT for brainstorming to formulate research questions, SciteSpace for deconstructing research papers, PaperDigest for writing certain parts of the literature review that require humanized writing, and Consensus for facilitating discussions on research findings. She said that these tools have proven instrumental in navigating the complexities of academic research.

P02 said that from her limited experience in using AI chatbots, Perplexity is the most effective tool as it provides reliable and valid data collected from the existing body of research (it provides a direct link to the most prominent references).

P03 said that he have been using several AI chatbots for decades, without mentioning any specific AI bot's name in particular

Question 03: Have you encountered any ethical dilemmas or challenges in this context? If so, how did you handle them?

Comment 03: all our participants said that they have faced some challenges while using the AI chatbots. However, each one of them has faced a different problem from the other one.

P01 stated that challenges she faced are related to ethical problems, particularly in the area of plagiarism detection, due to unidentified issues and the lack of effective detectors. Despite this, she stressed that prohibiting students from using these tools is unnecessary as they are readily available. Instead, she emphasized the importance of educating students on responsible usage (to be good users that's all).

P02 said that besides lack of expertise, knowledge is decontextualized and sometimes does not align with our educational and cultural contexts.

P03 informed that he did not face technical challenges that much, however he has faced so many pedagogical problems

Question 04: In your opinion, do university students use AI and chatbots as resources to foster their learning autonomy, or as tools on which they are totally reliant and dependent?

Could you explain your viewpoint, with examples from your teaching context if possible?

Comment 04: the majority of the teachers said that their students use the AI chatbots to foster their learning autonomy. Where, the minority said that their students do over rely on the AI chatbots.

P01 believes university students do use AI and chatbots as resources to foster their learning autonomy. In terms of productive skills, students utilize AI tools to expand their vocabulary, improve their writing in particular, and even practice speaking through voice recognition technologies. For example, language learning apps like Duolingo or Rosetta Stone provide students with personalized learning experiences tailored to their individual needs, allowing them to progress at their own pace and take ownership of their learning journey.

P02 stated that a great majority of her students totally depend on them. She said that whenever she asks for any type of question the first thing she notices is that they all directly refer to their mobile phones, and whenever she assigns them a writing task, they directly consult GPT and even when they revise for tests/exams they ask AI generated tools to summarize for them. She claims that this over reliance is creating issues within students' critical thinking abilities and hinders autonomy.

P03 said that his students do use AI chatbots to help them with their learning. He said that they use it with different activities such as : summarizing, searching for articles.... And so on.

Question 05: How would you react if you detected a student's total reliance on chat bots to do a given assignment? Could you share your experience with this issue?

Comment 05: It is noticeable that our participants have caught their students using AI chatbots with their given assignments. Which made each one of them reacts accordingly.

P01 declared that according to her experience, she has noticed students who heavily rely on AI-powered writing assistants or translation apps may struggle to develop critical thinking and problem-solving skills. Without actively engaging in the writing process or practicing language skills, they risk compromising their ability to develop their own human style, and effective communication in real-world contexts.

P02 asserted that she already faced that problem with her students. So, to overcome this, she encourages for autonomous learning and the effective use of chatbots for assistance only. She said that the best strategy that helped her is the use of mind maps as they are not provided by chatbots and that cite them to use their thinking abilities.

P03 said it is true they are facing that problem and the only solution for it is applications that detect AI plagiarism.

Question 06: How would you perceive an official and ethical integration of AI chatbots as resources to facilitate university teachers' teaching and students' learning?

Comment 06: Everyone agreed on the idea of the integration of the AI chatbots into the universities, but only under certain restrictions.

P01 finds that an official and ethical integration of AI chatbots in university teaching and learning should prioritize awareness, education, and responsible usage. Instead of banning, institutions should raise awareness about ethical implications and proper utilization through workshops and training.

P02 thinks that it would be very effective. Since there is no escape from integrating technology, then ethical consideration and academic integrity are prerequisites.

P03 said that as a teacher I would support the integration of the AI chatbots in our universities. However, they should spread some ethical awareness towards its use among the teachers and the students.

Question 07 :Based on your experiences, do you have any suggestions for how AI chatbots could be improved to better support students' learning autonomy?

Comment 07: Everybody offered their own recommendations, each of which advances different aspects of the suggested question.

P01 said that perhaps to foster student learning autonomy, prioritize strategies such as promoting critical thinking, fostering metacognitive skills (such as adaptive /personalized learning that consider students' individual learning styles, preferences, and progress) and facilitating collaborative learning. These approaches encourage independent learning while leveraging chatbot assistance.

P02 suggested enhancing the accuracy of data, improving feedback mechanisms, making learning experiences more individualized and responsive to specific needs, integrating metacognition-based cues and prompts (instead of providing direct answers) to foster autonomy and self-regulation.

P03 said that in order to do so the AI chatbots must study the learners' styles for the sake of meeting their needs.

Question 08: Are there any tools or features you wish were available in AI chatbots technologies to boost teaching and learning?

Comment 08: The first teacher saw that people should go to certain website assistance, while the second teacher offered some suggestions for improving the AI chatbots. Meanwhile, the last teacher recommended that the teachers be trained.

P01 suggested visiting the site Tiny Wow, where you will access thousands of apps with diverse functions, mainly related to education.

P02 wished for adding context sensitivity, ethical considerations, synchronous collaborative learning features, and flexible and general recognition features (texts, audio, visual data etc)

P03 asserted that the teachers are the ones who need to be trained to well use the AI chatbots first. So, they will have the ability to use it in the real life context properly.

3.2.2.1 Discussion of Interview obtained Results

The obtained results can be divided into three main themes. First of all, in term of the integration and the effectiveness of AI chatbots in teaching-learning, all the given opinions or answers conclude that all the participants mentioned using AI-powered bots chatbots into their pedagogical methods for variety of reasons. This demonstrates the growing acceptance and the increased adoption of these technologies in the educational framework. Secondly, in term of the widespread use of these chatbots among the students and the possible difficulties, the data show that all the participants reported their concerns towards the misuse of the provided information. Teachers' opinions also differed about how these tools affect students' understanding. While some educators believe that chatbots encourage self-directed learning by offering constant help, others worry that they can make them fall into the trap of plagiarism or weaken their critical thinking abilities. Thirdly, in term of the promise of AI chatbots in education, there is an overwhelming agreement around the idea of forward-looking and integration of AI modules in active learning classrooms. Once again, the importance of responsible use by teachers implementing competency-based training programs and workshops for both teachers and students was emphasized. Moreover, they should focus on more advanced AI features and educational technologies that foster more independent learning and critical thinking. This suggests that it may be possible to use AI chatbots for teaching, but in order to do so that requires a careful assessment of any negative impacts, and a focus on promoting responsible, ethical and critical learning behaviours.

3.3 Discussion

Our study aims to explore master one students' perception of using the AI chatbots as learner autonomy or dependence promoting tools . The study indicates that AI chatbots significantly provide the students with personalized learning experiences. It also shows that this AI assistance represents powerful educational tools, meeting the individual styles and preferences. The findings highlight what was discussed in the existing literature review, which

is the ability of these AI-powered bots in personalizing the learning experience and providing instant feedback. This way of personalization aligns with the idea of learner autonomy where students get to study or to learn according to his pace, focus, preferences and work even more on their areas of strengths and weaknesses.

3.3.1 AI Chatbots as Learning Autonomy Promoting Tools

The findings show that master one students perceive the AI chatbots as educational tools that promote learner autonomy. These chatbots can build a knowledge base about their users by their interactions, so that they can act as on demand tutors. These AI powered chatbots can provide students with the ability to access various resources and provide them the necessary information in short period of time, without the need to consistently wait for the teachers' help. The findings present a clear acceptance among the students towards the idea of the integration of these technologies in the Algerian universities, because these bots have the potential to raise the level of teaching-learning context, especially in terms of enhancing academic achievements and helping with the academic research.

3.3.2 Students' Awareness of AI Chatbots Support

Nevertheless, it is very crucial to understand the way or how are these students utilizing these technologies, in order to get to know whether AI powered-chatbots foster selfdirected learning or over-reliance. The results support nuanced perspective: the participants declared that while AI chatbots significantly contribute improving the learner autonomy, the students still maintain confidence in their abilities over AI chatbots. The students clearly showed that they prefer to use these AI powered-chatbots as supplemental tools but not as a replacement for the traditional study practices. They **acknowledge the potential for AI chatbots to become a crutch. This** awareness suggests a healthy approach to utilizing the technology, prioritizing their own critical thinking and maintaining control over their educational journey.

3.3.3 AI Integration Acceptance among Teachers and Students

Both teachers and students emphasised the importance of the integration of these bots to help both of them in teaching-learning context, however they emphasised a supervised integration so that they can use it ethically. One of the teachers declared that *‘an official and ethical integration of AI chatbots in university teaching and learning should prioritize awareness, education, and responsible usage. Instead of banning, institutions should raise awareness about ethical implications and proper utilization through workshops and training’*. That is to say, the findings demonstrate that when used ethically and appropriately, AI

chatbots can effectively support and enhance learner autonomy, providing valuable assistance without fostering dependency.

3.4 Recommendations

According to our findings we recommend:

- ❖ A responsible and supervised integration of the AI chatbots in order to improve learning outcomes.
- ❖ Policymakers and educators must ensure that AI chatbots are being used as a supporting and supplementing educational tool.
- ❖ The AI developers need to design AI chatbots that encourage for autonomous learning and avoid any features that could foster dependency.
- ❖ Both teachers and students should be trained on how to use the AI chatbots effectively and be trained to neither rely on them nor use them in unethical way.

Conclusion

In conclusion, the perception of master one students towards the use AI chatbots hold immense potential for enriching learning. These AI tools can revolutionize the educational journey by offering a self-directed learning experience. However, it is crucial to create a balance between traditional study methods and using the AI chatbots responsibly in order to prevent over-reliance on technology. By adopting thoughtful integration strategies, educators can take advantage of the benefits of AI chatbots while promoting for independent learning and self-confidence among students. critical thought and exploratory learning process. When deployed responsibly and ethically, AI Chatbots can encourage learner autonomy. They effectively serve as intelligent tutors that help developing problem solving skills and creating self-reliance that support creativity and critical thinking. The growing interest on these AI technologies is relatively new, therefore, this study can shed the light on the importance of understanding how do students as well as teachers perceive these technologies, in order to help pedagogical developers and policymakers effectively and ethically integrate AI chatbots that promote learner autonomy.

General Conclusion

General Conclusion:

This thesis is divided into two distinct sections: a theoretical component and a practical component. The theoretical section comprises two chapters that delve into the foundational concepts and frameworks underpinning the research topic. These chapters provide a comprehensive overview of the existing literature; The first chapter delves into existing research on the subject, focusing on a comprehensive literature review of the concept of artificial intelligence (AI). It explores the definition of AI, its historical development, the significance of AI, its benefits and drawbacks, various AI algorithm types and functions, and the specific definition of AI chatbots within these categories, accompanied by illustrative examples.

The second chapter shifts attention to the utilization of AI chatbots in university settings, examining their usage among students and faculty members and the underlying reasons. It then proceeds to identify the most commonly employed AI chatbots within universities and addresses the ethical considerations associated with their implementation. Furthermore, the chapter concludes by exploring the integration of AI chatbots into Algerian universities.

The the chapter is dedicated for the practical side of this thesis. Master one students believe that the artificial intelligence chatbots can be a valuable educational tools. They see these AI-powered chatbots as beneficial for independent / autonomy learning because they provide personalized feedback and tailored assistance to individual needs. Both qualitative and quantitative methods'findings indicate that when used responsibly and ethically, these technologies can transform the educational landscape.

This study attempts to investigate perceive AI chatbots in terms of fostering self-directed learning or over-reliance, at Ibn Khaldoun university-Tiaret. Throughout this research paper we have examined the notion of artificial intelligence. Then, we have introduced the concept of the artificial intelligence chatobs as a whole and its integration in higher education institutions. We have ended the chapter by the AI chatbots in the Algerian universities. The literature review we have conducted, helped us establish a comprehensive foundation towards this new technology, whereas, the practical side of this research analyses the obtained data of both qualitative and quantitative approaches.

The results support our three hypotheses that suggest the ability of the AI chatbots in fostering a personalized educational journey. Therefore, ethical considerations must be integrated, so that the students maintain ownership over their learning and prevent them from

any kind of dependency on these chatbots. Future research can study the long-term impact of AI chatbots on the learners' behaviour and academic achievements.

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APPENDICES

Appendix A. Students' Questionnaire

Students' Questionnaire Dear Students This questionnaire is designed to gather insights from master's degree majors in linguistics and didactics on their perceptions and attitudes towards using AI chatbots as educational tools. Your responses will contribute to a broader understanding of how these technologies can foster either total reliance and dependency or autonomy in learners. Please bear in mind that data safeguarding, anonymity and confidentiality are highly considered. Please feel free to withdraw from the study at any time. We appreciate your participation and commitment.

Section 1: Biographical Information

1. Age
 - Under 25
 - 25-34
 - 35-45
 - Over 45
2. Gender Male
Female
3. Major Linguistics
Didactics

Section 2: AI Chat Bots Use 4. Which types of AI / chatbots have you utilized in your studies? (You can tick one or more options according to your case)

- Language Learning Apps: These provide automated language quizzes and interactive exercises (e.g. Duolingo, Babbel).
- Chat bots for Language Practice: These let students engage in real-time dialogues in English (e.g. HelloTalk, ChatGPT)
- Language Generation AI: These generate language content, such as essays, stories or creative writing prompts (e.g. Chat GPT).
- Speech Recognition Software: These transcribe and assess spoken language, helping students improve pronunciation and fluency (e.g. Google Speech-to-Text).
- Text-to-Speech Tools: These convert written text to spoken language (e.g. Amazon Polly).
- Virtual Reality (VR) and Augmented Reality (AR): These create immersive language learning experiences for learners (e.g. Wonderscope, Oculus Rift).

-Automated Assessment and Grading: These grade assignments, essays and quizzes (e.g. Turnitin, Gradescope).

-Data Analytics and Learning Analytics: These collect and analyse student performance data (e.g. Canvas Analytics, Brightspace Analytics).

-Other (please specify)
.....

-None of the above

- 4. How frequently do you use AI chatbots for educational purposes? (Please tick one option only) Daily
- Weekly
- Monthly Rarely

Section 3: Challenges and Improvements 6. What are the main challenges you have faced when using AI chatbots in your learning?

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7. Do you have any suggestions for improving the use of AI chatbots in educational contexts, particularly in fostering autonomy?

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8. How would you perceive an official and ethical integration of AI chatbots in the Algerian university?

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Section 4: Students' Use of AI Chatbots: Learning Autonomy / Dependency Please rate your level of agreement according to your attitude towards each of the following 20 items Strongly Agree (SA) Agree (A) Neutral (N) Disagree (D) Strongly Disagree (SD)

	SA	A	N	D	S D
1.Amongst all learning resources that AI chatbots help me to access, I select the most valuable ones					
2.AI chatbots help me to explore various resources, of which I select what best meet my learning needs					
3.I always find it difficult to complete my assignments without relying on AI chatbots.					
4.I feel confident in using AI chatbots to answer my burning questions without consulting my teachers every time					
5.I feel anxious during exam preparation without access to AI chatbots.					
6.I am unsure how to do a given task without first consulting an AI chatbots					
7.AI chatbots provide me with the tools and resources to explore topics on my own.					
8.I feel empowered to learn at my own pace (speed) with the help of AI chatbots					
9.I feel addicted to and overwhelmed by the use of AI chatbots					
10.I am losing confidence in my own abilities to solve problems because of a frequent use of AI chatbots					
11.AI chatbots provide me with personalized learning experience through content and activities relevant to my strengths and weaknesses.					
12.I use AI chatbots to practise my problem-solving skills and receive feedback on my own attempts					
13.AI chatbots prompt me to critically analyze information and come to my own conclusions					
14.I sometimes feel like AI chatbots are doing it all for me.					
15.My understanding of a subject might be incomplete if I don't use AI chatbots.					
16.I passively accept information from AI chatbots without critically evaluating its accuracy or relevance					
17.I struggle to come up with my own research questions without AI chatbots' assistance					
18.I am worried that my reliance on AI chatbots might make me a less resourceful and adaptable learner.					
19.I use AI chatbots as an initial step for further research, allowing me to dig deeper into topics on my own.					
20.AI chatbots provide me with self-reflection opportunities to assess my understanding and identify areas for improvement.					

Appendix B. Teachers' Interview

Dear Teachers Thank you for agreeing to participate in this interview. Today, we're exploring university English teachers' perceptions and attitudes towards the use of AI / chatbots in education, particularly focusing on how these tools might foster autonomy or dependency among learners. Your insights will contribute significantly to our understanding of the integration of technology in university teaching and learning.

The Interview

Q01. Have you used AI chatbots in your teaching experience? If so, could you describe how you've integrated them into your courses?

Q02. What types of AI chatbots have you found most effective in facilitating teaching and learning, and why?

Q03. Have you encountered any ethical dilemmas or challenges in this context? If so, how did you handle them?

Q04. In your opinion, do university students use AI chatbots as resources to foster their learning autonomy, or as tools on which they are totally reliant and dependent? Could you explain your viewpoint with examples from your teaching context if possible?

Q05. How would you react if you detected a student's total reliance on chatbots to do a given assignment? Could you share your experience with this issue?

Q06. How would you perceive an official and ethical integration of AI chatbots as resources to facilitate university teachers' teaching and students' learning?

Q07. Based on your experiences, do you have any suggestions for how AI chatbots could be improved to better support students' learning autonomy?

Q08. Are there any tools or features you wish were available in AI chatbot technologies to boost teaching and learning?

Thank you for sharing your valuable insights and experiences. Your contributions are essential for understanding the potential impacts of AI and chatbots on university language learning and teaching.

Summary

This study investigates the views of first-year Master's students majors in linguistics and didactics on the use of chatbots driven by artificial intelligence as a tool to support self-directed learning or as a tool that promot dependancy. A survey of students and an email interview with instructors served as the foundation for this study. The results show that students use chatbots driven by AI to support their self-directed learning, and they are aware of the possible consequences of relying too much on these technologies. In addition, they support the inclusion of these bots in academic settings and demand legislation to stop their indiscriminate and unethical use.

Key words: Artificial intelligence, autonomy, chatbots, dependancy

RESUME

Cette étude vise à explorer les opinions des étudiants de première année de master en didactique et en linguistique concernant l'utilisation des chatbots basés sur l'intelligence artificielle comme outil d'aide à l'auto-apprentissage. Cette étude s'est appuyée sur un questionnaire destiné aux étudiants et un entretien par courrier électronique avec des professeurs. Les résultats indiquent que les étudiants utilisent des chatbots basés sur l'intelligence artificielle comme aide à l'auto-apprentissage, et qu'ils sont conscients des dangers d'une dépendance excessive à leur égard. Ils soutiennent également l'idée d'inclure ces robots dans les universités tout en imposant des lois les empêchant. utilisation contraire à l'éthique et sans restriction. Les professeurs ont souligné l'importance d'une utilisation responsable de cette technologie.

Mots-clés: chatbots, intelligence artificielle, auto-apprentissage, dépendance excessive.

الملخص

تهدف هذه الدراسة إلى استكشاف آراء طلاب السنة أولى ماستر تخصص تعليمية ولسانيات فيما يتعلق باستخدام روبوتات الدردشة ذات الذكاء الاصطناعي كأداة داعمة في الدراسة الذاتية، اعتمدت هذه الدراسة على استبيان للطلاب ومقابلة عبر البريد الإلكتروني مع الأساتذة، وتشير النتائج إلى أن الطلاب يستخدمون روبوتات الدردشة المستندة على الذكاء الاصطناعي كأداة مساعدة في التعلم الذاتي، وهو يدركون مخاطر الاعتماد المفرط عليها، كما يؤيدون فكرة إدراج هذه البوتات في الجامعات مع فرض قوانين تمنع استخدامها غير الأخلاقي وغير المقيد، وشدد الأساتذة على أهمية الاستخدام المسؤول لهذه التكنولوجيا.

الكلمات المفتاحية: روبوتات الدردشة، الذكاء الاصطناعي، الدراسة الذاتية،

الاعتماد المفرط.