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PEDAGOGY OF NATIONAL AND FOREIGN LANGUAGES

"ADVANTAGES AND DISADVANTAGES OF ARTIFICIAL INTELLIGENCE IN THE LEARNING PROCESS IN TEENAGERS"

RESEARCH PROJECT

As a prerequisite to obtain a:

BACHELOR´S DEGREE IN PEDAGOGY OF NATIONAL AND FOREIGN LANGUAGES

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ADVISOR'S APPROVAL

In my role as advisor of the research paper and title "Advantages and Disadvantages of Artificial Intelligence in the Learning Process in Teenagers", prepared by Roger Oswaldo González Tigrero, an undergraduate student of the Pedagogy of National and Foreign Languages Major at School of Educational Sciences and Languages at Universidad Estatal Península de Santa Elena, I declare that after oriented, studied, and reviewed the project, I approve it in its entirety, because it meets the requirements and is sufficient for its submission to the evaluation of the academic tribunal.
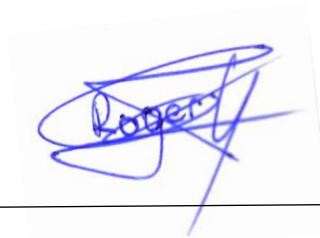
Sincerely,

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Statement of Authorship

I, Roger Oswaldo González Tigrero with ID # 2450236035, student from Universidad Estatal Peninsula de Santa Elena, at School of Educational Sciences and Languages, as a prerequisite to obtain a Bachelor's degree in Pedagogy of Nationals and Foreign Languages, in my role as author of the research paper "ADVANTAGES AND DISADVANTAGES OF ARTIFICIAL INTELLIGENCE IN THE LEARNING PROCESS IN TEENAGERS" certify that this work is of my authorship, except for the quotes and reflections used in this research paper.

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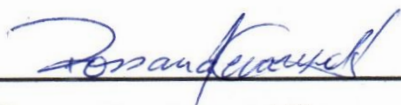Eliana León Abad, MSc.

**PEDAGOGY OF NATINONAL AND
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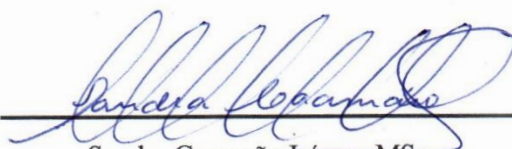Xavier Almeida Briones, MSc.

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Dedication

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This project is also dedicated to all the teachers, friends and other family members who cheered me up in the moments in which I needed it most.

 With love

Roger Oswaldo González Tigrero

Abstract

The relentless advancement of technology has an undeniable impact on every aspect of modern life. Among the latest technological advancements, the emergence of Artificial Intelligence (AI) has garnered considerable attention, especially in the field of education. Since early 2023, the younger generation, familiar with this type of software, has widely embraced AI-driven tools, thanks to the pervasive influence of social media.

Therefore, the objective of this research project is to explore the advantages and disadvantages of integrating AI into the learning process of teenagers. Using a qualitative research approach, the author aims to gather the opinions and perceptions of students aged 15 to 18 who have used these tools for academic activities. Notably, the research revealed that the most widely used AI software are ChatGPT, developed by OpenAI; and Smodin.IO. Participants praised its efficiency as a search engine, enabling quick access to accurate information compared to conventional web browsers. They stated that the responsible use of AIs provides a solid foundation for mathematics, research, analysis and writing tasks.

KEY WORDS: ARTIFICIAL INTELLIGENCE, LEARNING PROCESS, ADVANTAGES, DISADVANTAGES, TEENAGERS.

Resumen

El avance incesante de la tecnología tiene un impacto innegable en todos los aspectos de la vida moderna. Entre los últimos avances tecnológicos, la aparición de la Inteligencia Artificial (IA) ha captado una atención considerable, especialmente en el ámbito de la educación. Desde principios de 2023, la generación más joven, familiarizada con este tipo de software, ha adoptado ampliamente las herramientas impulsadas por la IA, gracias a la influencia omnipresente de las redes sociales.

Por tanto, el objetivo de este proyecto de investigación es explorar las ventajas y desventajas de integrar la IA en el proceso de aprendizaje de los adolescentes. Mediante un enfoque de investigación cualitativa, el autor busca recopilar las opiniones y percepciones de estudiantes de entre 15 y 18 años que han utilizado estas herramientas para tareas académicas. Destacablemente, la investigación reveló que el software de IA más utilizado es ChatGPT, desarrollado por OpenAI. Los participantes elogiaron su eficiencia como motor de búsqueda, permitiendo un acceso rápido a información precisa en comparación con los navegadores web convencionales. Afirmaron que el uso responsable de las IA proporciona una base sólida para tareas de matemáticas, investigación, análisis y redacción.

PALABRAS CLAVES: INTELIGENCIA ARTIFICIAL, PROCESO DE APRENDIZAJE, VENTAJAS, DESVENTAJAS, ADOLESCENTES.

Index

Figures

Introduction

In the current digital era, artificial intelligence has gained tremendous popularity among the young population worldwide. Social media and other communication channels have played a vital role in disseminating information about what artificial intelligence is and the various possibilities it offers in fields such as entertainment, productivity, work, and even education.

In this context, the use of AI-powered software has become an extremely useful tool for young people. These students, characterized by their innate curiosity and familiarity with new technologies, are particularly inclined to make the most of these tools for the benefit of their academic life.

Based on the aforementioned, the main objective of this research is to explore the advantages and disadvantages of using artificial intelligence in the learning process. To achieve this, specific objectives are set to analyze this topic. Firstly, the aim is to identify the most used artificial intelligence tools in the learning process.

Additionality, the goal is to explore the current capabilities that artificial intelligence offers in the learning process. This objective will allow us to understand the extent of artificial intelligence and how it can enhance student learning. Additionally, it will help us identify limitations in the development of certain tasks.

Lastly, the objective is to analyze teenagers' perception regarding the use of artificial intelligence in academic activities. This will provide a more comprehensive understanding of how students perceive these tools and how they influence their autonomy, problem-solving skills, and other important abilities for their academic development.

By combining these objectives and analyzing the responses obtained in the interviews conducted with the participants, the aim is to establish a relationship between the use of artificial

intelligence and the learning process of adolescent students, and thus, understand how these tools can be ethically used to enhance academic development in order to ensure a more enriching and tailored education that meets the needs of the 21st century.

This project is divided into 5 chapters.

Chapter 1, The Problem. In this section, the author highlights the importance of conducting this research and provides relevant information to contextualize the issue at hand.

Chapter 2, Theoretical Framework. In this section, the author presents information about previous research related to the thesis topic. Additionally, definitions of the key concepts addressed in this project are provided.

Chapter 3, Methodological Framework. In this section, the author explains the research method used to develop this document and defines the concepts related to the data collection process.

Chapter 4, Results Analysis. In this section, the author provides analysis and interpretations of the participants' responses in the interviews. For better reader comprehension, word clouds were used, and a connection between the results and the Theoretical Framework is established.

Chapter 5, Conclusions and Recommendations. In this section the author presents the conclusions of this research based on the objectives established at the beginning of it. Additionally, recommendations are proposed that will serve as a guide for future studies in the field of education and its relationship with technology.

Chapter I

The Problem

1.1. Research Topic

Educational Innovation

1.2. Research Title

Advantages and disadvantages of Artificial Intelligence in the learning process in teenagers.

1.3. Problem Statement

The way that students are taught and how instructors convey information has been changed by the application of artificial intelligence in education. Particularly among the younger generations, teenagers are accustomed to using cutting-edge technology in their daily lives. They thus consider the use of artificial intelligence in the educational process to be both appealing and useful as a tool for strategy.

Artificial intelligence (AI) could be defined as "a computer science discipline that aims to develop machines and systems that can perform tasks that require human intelligence" (Estupiñán et al., 2021). But a more detailed definition is taken from an interview by the newspaper El Universal with the Deputy Director General of Social and Human Sciences of UNESCO, who said that "Artificial intelligence systems are information processing technologies that integrate models and algorithms that produce an ability to learn and perform cognitive tasks, giving rise to results such as prediction and decision-making in material and virtual environments" (Ramos, 2021).

The application of AI in education is expanding quickly. Beginning with the most widely used ones, such as vocabulary definition, text translation, grammar check, and arithmetic problem solving, artificial intelligence has been used to enhance the learning environment in school assignments. Writing summaries, essays, and even software codes has become viable for students thanks to advancements in AI system construction. By using these technologies to perform

repetitive and time-consuming activities, students may save time and concentrate on other, more important assignments that need more complex skills.

Despite these advantages, there is also fear that young learners could misuse these tools, which might have a detrimental impact on their ability to learn. Abusing AI can result in technological dependence and a decline in interest and commitment to education, which can have a negative impact on the learning process and students' capacity for time management, decision-making, and responsibility acquisition as they grow accustomed to going with the quickest and simplest solution.

Given the existing history of technology applied to education, it can be seen how the use of AI can be used as a tool to improve the learning process, which would be very advantageous for all involved due to its enormous profit margin. However, ignoring the potential consequences of abusing this essentially automated way of performing tasks would be reckless. Maintaining balance is essential to achieve proper use of AI both inside and outside the classroom. To do this, it is first necessary to outline the advantages and disadvantages of AI in relation to the education of teenagers.

In order to achieve this, the project's goals are as follows: first, to identify the most popular AI tools for creating academic tasks; second, to explore which types of homework an AI can complete more effectively than others; and third, to analyze how adolescents feel about the use of AI in their own education. By performing a review of the relevant literature and speaking with students who satisfy the criteria for participation in the study, all of these issues will be addressed.

1.4.   Problem Formulation

1.4.1. Main Question

- How do students use artificial intelligence tools and what are their pros and cons?

1.4.2. Specific questions

- Which artificial intelligence tools are predominantly utilized by adolescents during the learning process?

- What is the usefulness that AI has about its use in The Learning Process?

- What are teenagers' opinions about using artificial intelligence to do homework?

1.4.3. General Objective

- To explore the advantages and disadvantages of the use of artificial intelligence in the learning process.

1.4.4. Specific objectives

- To identify the most used artificial intelligence tools in the learning process.

- To explore the capabilities that artificial intelligence currently has in The Learning Process.

- To analyze the teenagers' perception associated with the use of artificial intelligence in academic activities.

1.5.   Justification

People see changes in their performance at work, in health, in the economy and, obviously, in education as a consequence of recent technological advances, which have influenced societies around the world. (Alonso-de-Castro & García-Peñalvo, 2022). The widespread use of technology, it has become an important ally in the Teaching Learning Process in the new generations. These have evolved in a way in which they have adapted to each other for the benefit of all the characters involved in the educational environment.

One of the latest innovations of our era is Artificial Intelligence which has promising use in various aspects of human life. Just as the Internet, at the time, revolutionized the way we teach and learn, today AIs have great expectations about their ability to transform education. In this way, UNESCO (2023) states that thanks to the ability to innovate teaching and learning methods, artificial intelligence has the potential to address some of the greatest difficulties in education today. However, the rapid advancement of technology brings dangers and difficulties. Therefore, it is relevant to know the use of AI related to academic activities and its implications for student development.

Although the idea of artificial intelligence (AI) and computing were both developed at the same time, its usage in the general public is relatively new. However, when it comes to its use in academia, it has only just started to gain popularity among students and professors who are more familiar with it. the technical. Due to its enormous value in creating many tasks, its use is expanding exponentially, making it vital to increase our understanding of how these tools are utilized and what effects they have. Additionally, as AI becomes more widely available and simple to use, worries about its potential detrimental impacts on kids' learning are mounting.

Finally, AI is always changing, much like other technologies, thus it's important to stay up to date with any potential future applications and tools. In order to comprehend how the usage of AI might affect skill development and how its advantages can be maximized, research like this can assist foresee the difficulties and possibilities that may appear in the near future.

Chapter II

Theoretical Framework

2.1. Background

There are several studies and research papers related to this same topic, done both nationally and internationally. The ones that have been considered most relevant are shown below.

2.1.1. International background

Moreno (2019), in his article named "The arrival of artificial intelligence to education" discusses the integration of artificial intelligence (AI) in education and how this can benefit students and educators. Various applications of AI in education were explored, such as personalized learning, intelligent tutoring systems, and chatbots. The author emphasizes the importance of ethical considerations in the implementation of AI and the need for technological skills and digital literacy among educators. The article also presents cases of countries that have integrated AI into education, such as Finland and the United Kingdom. Finland has adopted a cross-integration of AI in all subjects, while the UK has developed a compendium on the ethics of AI use and contextualized its use in each subject. However, regarding this, Moreno says "the integration of AI to educational environments in certain environments may take time due to the policies and administrative processes of each nation" (p. 263). The author concludes by calling for a comprehensive approach to integrating AI in education that prioritizes human-centered design and ethical considerations and also highlights the importance of digital literacy and the development of technological and scientific skills for educators and students.

García-Peñalvo (2023) discusses the launch of ChatGPT, a tool based on Generative Pre-trained Transformer 3 (GPT-3) technology that has sparked a debate on the implications of artificial intelligence in education. Since its release, the tool has been extremely popular, with over a million users in the first five days. According to the report, opinions to ChatGPT have ranged from hailing it as a revolutionary invention to worrying its negative consequences, such as the automatic production of articles or school tasks. The argument has concentrated on the fields of

education and scientific production, leading some educational institutions to prohibit its usage for concern that students may use it to produce school assignments automatically. The article also highlights the need to understand AI technologies and their benefits and weaknesses in order to prevent or detect their potential negative effects. Although there are risks associated with using ChatGPT, it can be a valuable tool for teaching critical thinking and other skills, provided it is used ethically and with proper supervision. The work also mentions that ChatGPT's reasoning capacity is restricted because it is not developed for that purpose. The most contentious problem surrounding ChatGPT is whether it will become the instrument of choice for individuals who need to create text without exerting the necessary human effort and, as a result, without developing the abilities for which the intellectual work was developed. According to the paper, the problem is not with the technology itself, but with the substance of some educational objectives that may have become obsolete in the majority of cases when they are employed.

Dignum (2021) states the importance of education for responsible artificial intelligence and the challenges that this implies. In her article "The role and challenges of education for responsible AI", she highlights the need for a responsible and trustworthy vision for AI and how this relates to and affects education. However, current AI and robotics curricula around the world provide engineers with narrow vision of the task, and most guidelines and principles lack concrete proposals for education. To ensure the knowledge and skills necessary for responsible AI, education curricula should focus on collaboration, critical thinking, problem solving, creativity, and transdisciplinary skills. The article also references various studies and reports on AI ethics and guidelines, as well as the potential benefits and risks of AI in education.

2.1.2. *National background*

In an article from Universidad de Bolivar and Universidad de Guayaquil about the role of artificial intelligence in higher education, they concluded that "although it is recognized that it is

an important factor, it is not known for sure to what extent will it transform higher education" (Zavala et. al, 2023, p. 7). The article underlines its importance of AI in higher education while also highlighting the lack of understanding and precision in this area. The work also discusses the problems and opportunities posed by AI integration in higher education, such as democratizing access to education and the need to assure inclusion and equity. Concerns concerning privacy and security are also raised in the acquisition and use of data for analysis and AI decision-making.

Overall, the research emphasizes the significance of establishing clear policies and critically reflecting on the role of technology in higher education in order to maximize the opportunities provided by AI. Furthermore, the importance of developing AI technologies and systems in accordance with the various needs of public or private universities is emphasized, particularly in developing countries whose critical needs for improvement would be impacted by the so-called digital-technological divide.

Jalón et al. (2022) in their article "Artificial Intelligence as an Accelerator for the Creation of Teaching Resources in Higher Education" aimed to analyze the educational effect of using AI based on science, technology, engineering, and mathematics (STEM) in AI literacy and ethical awareness of non-engineering university students. The research team consisted of 12 academics, 5 AI professionals, and 38 fourth-year university students. For the selection and creation of AI teaching resources, a workflow comprising six processes is recommended. The study discovered that AI-based teaching materials might identify non-engineering students' interest in AI and its significance. In addition, 15 difficulties for developing AI teaching materials in higher education were highlighted, which will be the focus of future study. According to the study findings, the use of AI-based teaching tools for non-engineering occupations implies a positive attitude and enthusiasm to learn about AI. However, various barriers to introducing AI into teaching have been highlighted, including a shortage of instructional resources, teacher training, and research. In

conclusion, the article highlights the importance of AI in higher education and its potential to improve AI literacy and ethical awareness of non-engineering university students. However, the challenges and obstacles that need to be overcome to effectively incorporate AI into teaching are also noted.

Nivela et al. (2020) professors from the University of Guayaquil, in their article "Learning Styles and Artificial Intelligence," discuss the importance of understanding different learning styles and how they impact the learning process in higher education. The authors suggest that a pedagogical approach based on the principles of connectivism can help educators incorporate technology into their teaching methods. Different models of learning styles are described, emphasizing the importance of recognizing the diversity of skills and information processing methods in students for more effective education.

The article presents a pedagogical approach that uses artificial intelligence and adjusts to various learning styles. The need of teaching instructors to utilize technology effectively is emphasized, as is the availability of cutting-edge technical equipment and continuing training programs by institutions. The AI-powered application will suggest additional activities from the database to each learner depending on their learning style. As a result, this AI software will modify the methods of those that it deems significant.

2.2. Pedagogical basis

2.2.1. Cognitive Development Theory.

According to cognitive approaches to learning, which Jean Piaget put forward in 1950, students actively contribute to the development of their knowledge rather than simply have a secondary role on it. According to Piaget, learners actively engage with their surroundings to develop their understanding through assimilation and accommodation processes rather than being

passive recipients of information. This viewpoint emphasizes the significance of reflection, problem solving, and critical thinking as important elements of the learning process.

2.2.2. *Socio-constructivist Theory.*

The Socio-constructivist theory of Vygotsky (1978), highlights the value of social interaction and language in the learning process. According to Vygotsky, learning involves a social process in which learners work together on assignments and get assistance from both teachers and classmates. Use of language and social contact enable shared meaning formation and the internalization of ideas and abilities. This viewpoint emphasizes the relevance of relationships and the social environment in the growth of knowledge and the learning of skills.

2.2.3. *Machine Learning*

The term "machine learning" refers to a group of computational techniques or strategies that allow a computer to learn from experience how to solve problems without the need for explicit programming (Cubo et al., 2021).

These ideas offer a strong framework for comprehending how Artificial Intelligence may influence teenage learners' learning processes. By easing communication and idea exchange among students, AI may promote cooperation and teamwork. In order to encourage social engagement and the co-construction of information, AI learning platforms can provide virtual environments where students can work together to solve challenges and exchange knowledge.

2.3. Theoretical basis

2.3.1. *Artificial Intelligence Definition*

The concept of Artificial Intelligence varies depending on the author or institution, however, one of the definitions that should always be considered is the one established by one of the founding fathers of the meaning of AI, John McCarthy (1955), who says that AI involves the

creation and study of computer programs that can perform tasks that require human intelligence when performed by people.

A more recent definition of the concept of AI is that "Artificial Intelligence is all that knowledge that machines learn through experience, adjust to new inputs and perform tasks like people." (Macias, 2021).

2.3.2. *Characteristics Of Artificial Intelligence*

According to Londoño (2023), artificial intelligences are characterized by the following points:

- Automatic Learning: It has algorithms and models that allow machines to learn and perform tasks without being explicitly programmed.

- Automation: It is the capacity of machines to complete activities without human intervention.

- Data ingestion: It is the accumulation of information from numerous sources, whether tangible or virtual.

- Data Analysis: Examine, transform, and model data to uncover patterns and trends that may be used to make decisions.

- Natural language processing: Human language is processed using trends and keywords to offer automated answers depending on the user's conversation or request.

2.3.3. *Types Of Artificial Intelligence*

According to Revista de Robots (2023), artificial intelligences are classified into four types:

- Systems that act like humans, which are artificial systems capable of repeating tasks emulating humans, just as robots currently do;

- Systems that think like humans, which are artificial systems capable of making decisions, learning, and solving problems;

- Systems that think like humans, which are artificial systems capable of making decisions, learning, and solving problems. They do this by using Artificial Neural Networks that replicate the behavior of the human nervous system;

- Systems that think logically, known as Expert Systems;

- Systems that act rationally, which incorporate Intelligent Agents. This software enables the observation of clinical findings as well as virtual agents that analyze trends on the Internet.

Argüello (2023) offers three other concepts about the types of artificial intelligence that exist.

- Artificial Narrow Intelligence (ANI), which refers to a computer system's capacity to outperform the human mind at a certain activity. It is humanity's greatest degree of Artificial Intelligence development to date. Autonomous cars and personal digital assistants such as Alexa, Cortana, Google Assistant, or Siri are examples of this form of intelligence.

- Artificial General Intelligence (AGI), which refers to a computer system's potential to surpass humans in any intellectual job. It is the sort of artificial intelligence featured in works of fiction such as movies, books, television programs, and other forms of entertainment in which machines have conscious ideas and behave based on their own motivations.

- Artificial Superintelligence (ASI) is a computer system that has developed artificial superintelligence and is capable of exceeding humans in practically all disciplines, including general knowledge, education, scientific innovation, and social abilities.

2.3.4. *Digital Divide*

According to Pita, Cevallos, and Maldonado (2021) any unequal distribution of access, use, or influence of Information and Communication Technologies between social groups is referred to as the digital divide. These groupings might be identified by gender, geographic or geopolitical location, culture, or other factors.

2.3.5. *Digital Literacy*

The Digital Literacy definition according to Limia (2022) is that it refers to the skill of humans to do various jobs using a digital media. But it is more than just learning how to use a digital gadget; it is about understanding and applying how that usage might enhance our lives or make us more productive and efficient.

2.3.6. *Emerging Technologies*

According to Hernandez (2022) Emerging technologies are those that aim to create changes that may impact society and the way people interact with technology.

2.4. Legal basis

2.4.1. *Articles Focus on Education*

Article 3, Section 1 of the Constitution of Ecuador establishes that the primary tasks of the State are to "Garantizar sin discriminación alguna el ejercicio efectivo de los derechos consagrados en la Constitución y en los instrumentos internacionales, especialmente los derechos a la educación, la salud, la alimentación, la seguridad social y el agua de sus habitantes".

Article 26, Section 5 of the Constitution of the Republic of Ecuador states: Education is a person's right throughout their lives, as well as the state's inevitable and required obligation. It is an essential topic for public policies and governmental investment, as well as a guarantee of equity and social inclusion, and an essential prerequisite for a good way of life. Individuals, families, and society all have the right and obligation to engage in education.

Article 29, Section 5 of the Constitution of the Republic of Ecuador states the freedom for teaching, academic freedom in higher education, and the right of individuals to study in their own language and cultural surroundings are all guaranteed by the state. (Ecuador, 2008).

According to article 2, section H of the Organic Law of Intercultural Education, Inter-learning and multi-learning are viewed as tools for improving human capacities through culture, sports, access to information and its technology, communication, and knowledge, in order to achieve personal and communal growth levels. (Ecuador, 2015).

2.4.2. *Articles Focus on Technology*

Numeral 2 of article 16 of the Constitution of the Republic of Ecuador provides: "Todas las personas, individual o colectivamente, tienen derecho al acceso universal a las tecnologías de la información y las comunicaciones".

Article 347, numeral 8 of the Constitution of the Republic, establishes that it will be the responsibility of the State to Integrate information and communication technology into the educational process and strengthen the connection between instruction and productive or social activities. (Ecuador, 2008).

According to Article 6, Section J of the Organic Law of Intercultural Education, the state has an additional obligation to ensure digital literacy, the use of information technologies, and communication in the educational process, as well as to promote the link between teaching and productive or social activities. (Ecuador, 2015).

According to Article 39 of the Organic Law on Telecommunications, the State would encourage programs to eliminate the digital gap and enhance connection, particularly in marginal rural and border regions, through the Telecommunications controlling body. (Ecuador, 2015).

Chapter III

Methodological Framework

3.1.   Methods

The qualitative research route is a techno-methodological strategy for addressing complicated research problems in social science fields that envisions the integration of techniques, instruments, and sequential analysis to examine and comprehend a phenomenon in society. (González-Díaz et. al, 2021).

The qualitative method is also known as phenomenological research, ethnographic research, or interpretative research. This approach gathers the whole utterances of the subjects and then interprets them, evaluating the meaning linkages that occur within a certain culture. This usually includes technical storytelling like open interviews, focus groups, or observation methodologies. (Mora, 2022).

The qualitative approach is a research strategy that enables in-depth examination of social and cultural phenomena utilizing non-objective and subjective data. It has shown effective in subjects such as sociology, psychology, and, of course, education. The qualitative technique is predicated on the notion that reality is socially created and that it is vital to comprehend the meaning and interpretations that individuals place on their experiences.

This study focused on using a qualitative approach to investigate in depth the perceptions and experiences of students regarding the use of artificial intelligence in their learning process. It sought to understand how AI integrated into their educational environment, how it affected their way of learning, and how it influenced their motivation and academic engagement. The study aimed to obtain valuable information that contributed to the understanding of the positive and negative aspects of the use of AI in the learning process.

3.2.   Types of Research

3.2.1. Phenomenological Research

The type of research that will be carried out is a phenomenological study of the proposed theme, which, according to Castillo (2020) It focuses on the how rather than the what of things, that is, how things are experienced in the first person. In this situation, it will concentrate on understanding the participants' subjective interpretations and experiences by detecting patterns and emergent themes.

In the context of this study, the phenomenological approach allowed us to delve into the subjective meanings and experiences of the participants who had used artificial intelligence in their learning process.

3.3.   Data collection techniques

The interviews with the students who participated in this research were carried out by a focus group. According to Abarca et al., (2013): "A focus group is designated as an interview that is carried out, through the intermediation of a moderator, with a small group of people around a previously established topic" (p. 160).

This focus group format was selected as it allows for interaction and exchange of ideas among participants. By bringing together a small group of students who have experienced the use of artificial intelligence in their learning process, the researcher can create an environment conducive to open discussion. This group dynamic can facilitate the exchange of different perspectives, ideas and experiences related to the topic, which allows a more enriching exploration of the research area.

In addition, this method offers the possibility of obtaining additional information that may not emerge in individual interviews. As participants interact and react to each other's comments,

new ideas, perspectives, and connections can emerge. Group dynamics can generate more discussion and provide a deeper understanding of the topic being explored. This supplementary information can be valuable in achieving research objectives and capturing a wide range of perspectives.

3.4. Data collection Instrument

The instrument selected to collect information it is an interview designed by 7 carefully designed open-ended questions. They will be used to encourage students to express their opinions fully and in their own words. These questions allowed students to share their opinions without feeling constrained by pre-defined answer options or imposed restrictions. Participants were able to more correctly and truly describe their views and feelings about the employment of artificial intelligence in their learning process by unleashing their expressiveness.

In addition, it has been decided to conduct the interviews in person to take advantage of the benefits of non-verbal communication. By being physically present, the researcher will be able to observe the facial expressions, gestures, and other nonverbal signs that accompany the participants' responses. These non-verbal aspects can offer valuable information about the emotions and the intensity of the experiences lived by the students. Likewise, the interaction in person will facilitate the interpretation of the responses, since clarifications can be made or participants can be asked to expand their ideas when necessary.

3.5. Data Collection Processing and Resources

The interviews with the students who participated in this research took place in person in a carefully selected extra-academic setting to ensure a safe environment conducive to effective conversation. Priority will be given to choosing a venue where participants feel comfortable and free to express their opinions openly and candidly. This will contribute to creating a climate of

trust and confidentiality, which in turn will encourage the active participation of the students during the interview.

To ensure that the interviews do not interfere with the academic, work or personal activities of the participants, they have been scheduled to take place in the afternoon. In this way, it seeks to minimize possible interruptions and distractions that could arise during the day, allowing students to fully focus on the interview without additional worries.

The method chosen to collect the information was through a focus group, as previously established. In this dynamic, the interviewer asked the questions, and each student had to answer individually, thus allowing all participants the opportunity to express their opinions and experiences in an equitable manner. In addition, interaction between students was encouraged, which fostered the exchange of ideas and perspectives, thus enriching the discussion and generating new reflections on the subject.

In order to have solid evidence of the interviews and to allow careful analysis of the participants' responses, the entire session was recorded. This recording served as a backup to ensure the accuracy and fidelity of the data collected, as well as to facilitate later analysis of the details and nuances of the responses. It is important to highlight that the confidentiality and privacy of the participants were guaranteed, and the recording was only used for research purposes.

3.6. Population and sample

The population that was used to collect the information was not limited to a particular educational institution. In consideration of the research topic's inherent characteristics, a convenience sampling technique was employed for expediency in participant selection. The participation of students who are willing to collaborate in the study and meet the following inclusion criteria will be sought:

- Be between 15 and 18 years old.

- Be enrolled in an educational institution.

- Have at some point used an artificial intelligence tool to complete school assignments

The choice of a convenience sampling technique is based on the accessibility and availability of the participants. As the study centered on students with prior exposure to artificial intelligence in the educational domain, efforts were made to identify individuals meeting the aforementioned inclusion criteria. Contacts were established through academic networks, student communities, and other pertinent channels to facilitate the recruitment of participants.

The sample is expected to consist of a total of 16 students. Although this may seem like a small sample size, it is important to note that the qualitative approach to research seeks depth and richness in the data collected, rather than statistical generalizations. By carefully selecting a group of students who meet the inclusion criteria, it was possible to gain a rich understanding of the participant's perceptions and experiences regarding the use of artificial intelligence in learning. This allowed us to obtaining more precise and contextualized results, providing valuable information to address the objectives set out in this research.

Chapter IV

Analysis of Findings

The following conclusions are the result of anonymous interviews conducted with high school students from different educational institutions, whose ages ranged from 15 to 18 years. The responses they provided were based on the participants' experiences when using Artificial Intelligence to carry out academic activities. The resulting interpretations were analyzed by presenting word clouds, which display the most repeated words in each response; in this case, the larger the size of the word, the more frequently it was used among the participants. With the help of this resource, the results could be interpreted to derive a final conclusion from the interviewees' responses. Additionally, a correlation between theories and concepts was developed using the information collected from the interviews.

The results obtained from the interviews were valuable for the development of this research project, as they provided a diversity of relevant information that contributed to the fulfillment of the main objective. Collectively, these conclusions offered a wide range of data that enriched and supported the progress of this project.

Overall, the analysis of the responses provided by the participants revealed several key points. On one hand, there was a positive evaluation of artificial intelligence tools, such as ChatGPT, in the academic field, attributed to their ease of use, ability to provide relevant answers, and time-saving in research and learning activities. However, some limitations were also identified, such as the lack of information updating in certain cases, the potential deterioration of critical thinking, and excessive dependence on these tools. Furthermore, the importance of maintaining a responsible and complementary use of artificial intelligence was emphasized, without replacing one's own knowledge and reasoning. Regarding long-term effects, the possible decrease in autonomy, problem-solving capacity, and creativity was pointed out if the use of these tools was abused.

4.1.   Interpretation of data from the interviews

Question 1: Could you describe some of the artificial intelligence tools that you have used to complete academic activities and how you use them in your learning process?

Figure 1

AI as a tool.

Note: The word cloud shows that the most common answer provided by the interviewees based on the question was "ChatGPT". Figure created by Roger González Tigrero

Key words: Artificial Intelligence tools, ChatGPT, Research, Analysis, Academic activities.

When participants responded to this question, they all agreed that, in one way or another, they use the chatbot called ChatGPT. Although they mentioned being aware of other artificial intelligence-based programs, such as Google Bard, Smodin, among others, the software developed by OpenAI is the one they use the most to carry out their academic tasks. The overall analysis of the responses to this first question shows that ChatGPT is valued as a useful tool in the academic field. Participants appreciate its ease of use, the ability to obtain relevant and specific answers, as well as the time savings it provides when conducting research, positively impacting their learning.

Participants particularly emphasize the ability of ChatGPT and Smodin to provide relevant and coherent answers to the questions or problems presented to them. This ability to interpret and respond accurately to their requests is valued by them, as it allows them to obtain detailed information for their research, analysis, or numerical problems. It is interesting to note that some participants mention the use of AI in specific academic areas, such as history, literature, mathematics, philosophy, physics, chemistry, among others.

Finally, participants also refer to the time savings that these artificial intelligences provide by obtaining precise and specific information without having to search multiple sources on the Internet. This efficiency can be beneficial for individuals who want to optimize their time and obtain faster results.

Question 2: Do you use these tools in all subjects or is there one in particular in which you use them the most? Why do you think they are more relevant in those subjects?

Figure 2

Subjects in which AI is used.
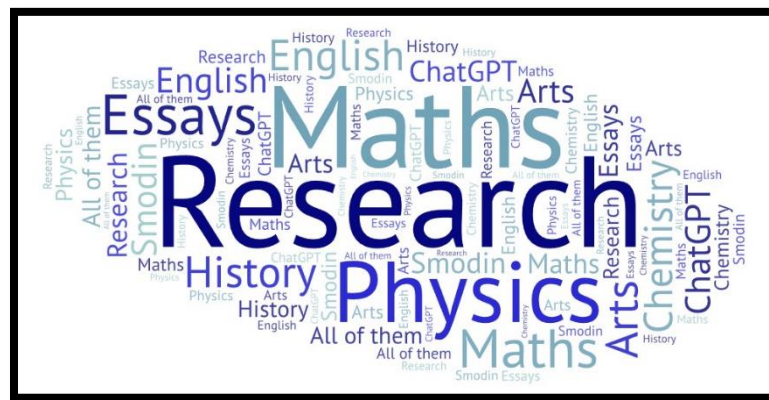
Note: The word cloud shows that the most common answer provided by the interviewees based on the question was "Research". Figure created by Roger González Tigrero

Key words: research projects, essays, analyze concepts, essays, historical and scientific information.

By analyzing the participants' responses regarding the use of artificial intelligence tools in different subjects, some trends and reasons for why these tools are considered more relevant in certain fields of their education could be identified. The responses suggested that artificial intelligence tools, such as ChatGPT, are highly valued in the academic realm due to their utility in various subjects.

Participants highlighted their application in research projects, their relevance in humanities subjects, such as art education, history, and literature, for analysis and essay writing. Additionally, in tools like Smodin, certain limitations were mentioned in numerical subjects, such as mathematics, physics, or chemistry. This is because, at times, students face difficulties in understanding the process by which AI arrived at the answer.

Question 3: From your perspective, what do you consider to be the advantages of using artificial intelligence in your academic activities? How have these tools benefited you in terms of efficiency, accuracy, or learning?

Figure 3

Advantages of using AI

Note: The word cloud shows that the most common answer provided by the interviewees based on the question was "Accurate information". Figure created by Roger González Tigrero

Key words: accurate information, time saving, information search, self-education, optimization

Analyzing the participants' responses to this question, it can be stated that, from their perspective, the application of artificial intelligence in academic activities has undeniable benefits. Among the advantages that were expressed are: obtaining accurate and concise information, saving time by providing concrete results, the possibility of accessing different perspectives on a topic, optimizing time, and improving writing and research; as well as facilitating the resolution of problems related to exact sciences such as mathematics or physics.

Additionally, the use of these tools allows students to make the most of their time in more meaningful and relevant activities, avoiding investing too much time in activities they consider unnecessary or tedious.

It is also emphasized that the proper use of these tools can contribute to the improvement of their learning, as long as they are used ethically and responsibly, avoiding academic dishonesty as much as possible.

Question 4: What do you think are the disadvantages of using artificial intelligence in your academic activities? Have you experienced any limitations or negative effects when using these tools?

Figure 4

Disadvantages of using AI
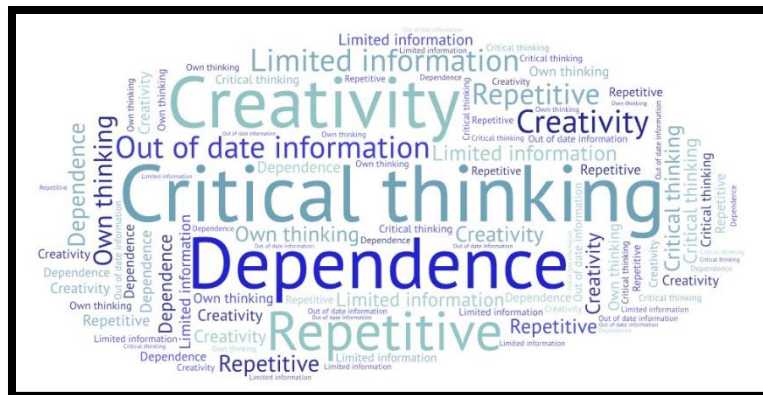
Note: The word cloud shows that the most common answer provided by the interviewees based on the question was "Critical thinking". Figure created by Roger González Tigrero

Key words: Limited information, Dependency, Creativity, Analysis, Own thinking

According to the participants' responses, despite the previously mentioned advantages, the use of artificial intelligence in academic activities has certain drawbacks. The limitation of updated sources in ChatGPT is highlighted, requiring users to turn to other AIs if they need current and precise information. Additionally, they mentioned that when seeking help with mathematical problems, they tend to have difficulty understanding the process that the AI went through to arrive at a particular answer.

Moreover, there is concern that the excessive use of artificial intelligence tools may impact the development of critical thinking and students' autonomy, leading to a loss of the ability to think for themselves. This was expressed by several participants, indicating awareness of the risks associated with abusing this technology.

It was also pointed out the possibility of developing dependence on the use of artificial intelligence tools, as well as limiting creativity and the formation of one's own judgment. Other negative aspects include technical limitations, such as incomplete loading of information or errors in the answers, as well as repetitiveness and a lack of depth in the provided responses.

Overall, the responses emphasize the importance of using artificial intelligence tools in a balanced and complementary manner, without losing sight of the development of one's own thinking and reasoning skills.

Question 5: Given the ease and speed with which school assignments can be completed using artificial intelligence, do you think its use could be considered a form of cheating? Why or why not?

Figure 5

Is using AI cheating?

Note: The word cloud shows that the most common answer provided by the interviewees based on the question was "Information". Figure created by Roger González Tigrero

Key words: Cheating, Appropriate use, Efficiency, Methods, Starting point

From the responses provided by the participants, it was observed that there are divided opinions on whether the use of artificial intelligence in school tasks can be considered a form of cheating.

Some participants argued that it is not cheating, as they consider it only provides a guide or assistance to complete tasks more efficiently, and still requires the process of analysis and writing on their own.

Other participants did express that they see it as cheating, as they perceive an unfair advantage in obtaining quick and complete answers without doing the research and reflective work themselves.

Some others also mentioned the aspect of plagiarism, as the information comes from an automated source and could be stealing someone's work and violating copyright.

In general, the perception of whether the use of artificial intelligence constitutes cheating varies depending on how the principles of originality and source attribution are used and valued.

Question 6: In your opinion, what could be the long-term effects of using these artificial intelligence tools too much in the learning process? Do you think it could affect your autonomy, problem-solving ability or other important skills?

Figure 6

Long-term effects of using AI

Note: The word cloud shows that the most common answer provided by the interviewees based on the question was "Dependence". Figure created by Roger González Tigrero

Key words: Autonomy, Dependence, Independent thought, Perception, Memory

Considering the participants' responses, it is possible to analyze the potential long-term effects of the excessive use of artificial intelligence tools in the learning process.

Some participants pointed out that it could generate dependence and affect the ability to perform tasks on their own, as well as to solve problems independently.

Additionally, it was mentioned that the prolonged use of these tools could impact autonomy, analytical capacity, and memory. However, there are also those who expressed that its use does not negatively affect them, as they primarily use it as a source of information.

These comments highlight the importance of using these tools responsibly and consciously, leveraging their benefits without neglecting the development of one's own skills.

Question 7: Do you think that the use of artificial intelligence has helped you improve your learning skills, such as understanding concepts? Why?

Figure 7

AI to improve learning skills

Note: The word cloud shows that the most common answer provided by the interviewees based on the question was "Clear Explanation". Figure created by Roger González Tigrero

Key words: Learning skills, understanding of concepts, Explanation, Clear up doubts, Precise information

Analyzing the participants' responses, it could be observed that the use of artificial intelligence has been perceived as an aid to improve learning skills, especially in understanding

concepts. Participants highlighted the ability to obtain detailed and accurate explanations from artificial intelligence tools, enabling them to clarify doubts and better understand topics that might seem complicated. Additionally, the option to request examples and simplifications facilitates the understanding of complex concepts. Overall, the use of artificial intelligence is perceived as a complementary tool that contributes to the learning process by providing additional and clear explanations.

4.2. Interpretation of bibliographic review

Question 1:

The participants' responses mention the use of ChatGPT as an artificial intelligence tool in the learning process. This relates to the article by García-Peñalvo (2023), which analyzes the launch of ChatGPT and the implications of artificial intelligence in education. Participants highlight that they use ChatGPT and other tools such as Smodin to conduct research, solve analytical and numerical questions, as well as obtain quick, summarized and precise information.

Additionally, there is notable alignment with the emphasis on the importance of digital literacy and technological skills among educators and students, as mentioned in the article by Moreno (2019). Participants demonstrate understanding and utilization of AI to efficiently obtain information and complete academic tasks.

Question 2:

The responses of the participants are related to the article by Moreno (2019), which mentions various applications of artificial intelligence in education, such as personalized learning and intelligent tutoring systems. The participants highlight that they use artificial intelligence tools especially in subjects that require some type of writing or research, such as literature, history, essay writing, etc. Although they mentioned that AI responses are not always one hundred percent

reliable in terms of sources, participants highlight that it saves them time by not having to read several web pages with the same topic.

On the other hand, some students highlight its relevance in numerical subjects, such as mathematics, physics or chemistry; However, certain limitations are mentioned when understanding the processes by which the AI arrived at that answer. This observation aligns with the theoretical framework, which emphasizes the importance of understanding the capabilities and limitations of artificial intelligence in the educational context. While AI tools can be useful in certain areas, it is important to recognize their limitations and use them appropriately.

Question 3:

The use of artificial intelligence (AI) in education has been highlighted by Moreno (2019) for its numerous advantages, such as personalized learning, intelligent tutoring systems and chatbots. These advantages are supported by responses from several participants, who mention that AI provides accurate and concise information, saves time retrieving information, and allows participation in other activities.

Additionally, García-Peñalvo (2023) points out the popularity of ChatGPT and its potential to teach skills such as critical thinking, which relates to the responses of others, who mention that AI can improve writing, research, and time spent to academic tasks, thus benefiting learning and efficiency.

Finally, Dignum (2021) emphasizes the importance of developing technological and scientific skills for both educators and students, which aligns with the responses of another group who mention that the use of AI tools can improve academic performance by allowing better writing and research.

Question 4:

García-Peñalvo (2023) mentions the debate surrounding the use of ChatGPT in education and highlights concerns about the automatic generation of articles or school assignments. This aligns with the responses of the majority of participants, who mention the potential impact on critical thinking and the loss of skills for independently solving challenges due to dependence on artificial intelligence tools like ChatGPT.

Dignum (2021) emphasizes the importance of education for responsible AI use and highlights the need to develop skills such as collaboration, critical thinking, and problem-solving in educational curricula. This aligns with the responses obtained, as they mention the need to understand artificial intelligence technologies and their strengths and weaknesses to avoid negative effects and promote ethical use.

The article by Zavala et al. (2023) mentions the importance of understanding and critically reflecting on the role of technology in higher education, including the integration of artificial intelligence. This relates to the response of one participant, who highlights the need to test one's own knowledge and recognizes the limitation of repetitive answers provided by ChatGPT.

In general, these concerns and recommendations underscore the importance of understanding and critically reflecting on the use of technology in education, promoting skills such as critical thinking and collaboration.

Question 5:

The use of artificial intelligence in education raises important ethical considerations, according to Moreno (2019). This relates to the responses of just over half of the participants, who

argue that the use of artificial intelligence is not considered cheating, as it only provides a guide to complete tasks and is used to draw conclusions in one's own words.

García-Peñalvo (2023) emphasizes the need to understand artificial intelligence technologies and their benefits and weaknesses, as well as to use them ethically and with proper supervision. This aligns with the responses of another group of participants, who argue that in the digital era, it is inevitable to leverage artificial intelligence resources for academic advancement. They suggest that using artificial intelligence as a tool should not be considered cheating as long as it is used responsibly and ethically.

Dignum (2021) highlights the importance of developing skills such as critical thinking, collaboration, and problem-solving in education. This relates to the responses of another group of participants, who mention that the use of artificial intelligence in school assignments can be considered cheating if it is used to copy all the information without making any personal effort. However, they add that if artificial intelligence is used as a tool to obtain explanations or specific information, it could be similar to using a search engine, saving time but still requiring a process of thinking and analysis.

Question 6:

Dignum (2021) emphasizes the importance of developing skills such as critical thinking, collaboration, and problem-solving in education. This relates to the responses of the majority of participants, who mention that the misuse of artificial intelligence tools in the learning process could impact students' ability to perform tasks on their own and solve problems independently. They argue that an excessive reliance on these tools could lead to a decline in analytical and problem-solving skills.

The participants' responses regarding the long-term effects of excessive use of artificial intelligence tools in the learning process reflect concerns about dependency, loss of autonomy, and potential impact on important skills such as critical thinking and problem-solving.

Question 7:

Moreno (2019) mentions in his article that one application of artificial intelligence in education is the use of intelligent tutoring systems, which can assist students in understanding concepts and resolving doubts. This aligns with the responses of all the participants, who mentioned that the use of artificial intelligence, especially the ChatGPT tool, has helped them enhance their learning skills and understanding of concepts.

Participants mention that they can ask ChatGPT or Smodin to explain concepts or exercises they didn't initially understand, and the precise and summarized information provided by artificial intelligence allows them to better grasp their subjects. This supports the idea of using artificial intelligence as a supportive tool in the learning process. The ability of artificial intelligence to provide detailed explanations, clarify doubts, and simplify complex concepts is reflected in the participants' responses, suggesting that the use of artificial intelligence can be beneficial in improving understanding and learning.

In summary, the use of artificial intelligence in education presents significant potential to enhance learning and academic efficiency. However, it is crucial to address ethical concerns, foster the development of critical skills, and promote the responsible use of artificial intelligence as a complementary tool in the learning process. Understanding and critically reflecting on the use of technology in education are essential to make the most of its benefits and minimize possible negative effects.

Chapter V

Conclusions and Recommendations

5.1.   Conclusions

In this research project, the perception regarding the advantages and disadvantages of using artificial intelligence in the learning process was analyzed among students aged 15 to 18. After extensive information gathering from various sources and in relation to the project's objectives, the following key findings emerged:

It was identified that one of the artificial intelligence tools most used by adolescents is ChatGPT, the second is Smodin. These tools have been used in various academic activities, such as solving questions based on research and analysis. Their popularity in the educational environment demonstrates the relevance that artificial intelligence has gained in the learning process. One could even argue that they have supplanted previously predominant sources of information, such as Wikipedia.

The current capabilities of artificial intelligence have proven beneficial in the learning process. Participants highlighted advantages such as obtaining accurate and concise information, saving time in information search, gaining different perspectives on a subject, and optimizing task completion time. These capabilities showcase the potential of artificial intelligence in enhancing efficiency and the quality of learning.

However, teenagers' perception of using artificial intelligence in academic activities varies. Some view its use not as a form of cheating but as an aid to task completion, while others express concerns about potential negative effects. These concerns include dependence on these tools, decreased autonomy, problem-solving abilities, and other essential skills. These opinions underscore the need for a balanced and ethical approach to integrating artificial intelligence in the learning process.

In general, these deductions emphasize the need for further exploration and analysis of the long-term effects of artificial intelligence usage in the learning process, as well as the importance of promoting responsible education within the context of artificial intelligence.

5.2.   Recommendations

Due to the qualitative nature of this research, primarily focused on descriptions and opinions rather than numerical data, it posed a challenge to accurately measure the impact associated with the advantages and disadvantages of using artificial intelligence. Given this limitation, it is suggested that in future studies related to technology and education, researchers adopt strategies and methodologies that facilitate a quantitative assessment. The inclusion of statistical analysis will allow for a more rigorous and quantifiable evaluation of the outcomes, providing a clearer and more precise understanding regarding the comparison between students who utilize artificial intelligence tools and those who do not.

By delving deeper into this approach, future research can shed light on the impact of these technologies in the educational sphere and how we can maximize their potential to enhance student learning, minimizing their negative aspects as much as possible. All of this, grounded in evidence, will provide a robust foundation for decision-making in the design of educational policies and pedagogical practices.

Additionally, taking into account that in the future more research will probably be carried out on the use of AI in the learning process, the author of this project highlights the alternative of focusing on more mature students. The research presented focused only on adolescents, so it would be interesting to explore how university students, for example, use this type of tool in their academic activities, since they represent a group of individuals who are in an advanced stage of their education, focused on specific areas of study. By having a deeper and more specialized

understanding of their respective fields, their experience with AI may be different from that of high school students. So, expanding research on the use of AI in learning towards university students would open up a vast field of possibilities.

Finally, due to the growing relevance of AI in the educational field, the incorporation of these technologies has generated a notable change in the dynamics of teaching and learning, therefore it could be interesting to explore how these tools are transforming the work of educators. Following this idea, one could analyze the way in which artificial intelligence can support teachers, improving pedagogical effectiveness and facilitating classroom management. This approach will provide a better understanding of the integration of artificial intelligence in teaching and provide practical recommendations for the training and professional development of teachers in a constantly evolving technological environment.

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Annexes

QUESTIONNAIRE

Este instrumento forma parte del proyecto de investigación "VENTAJAS Y DESVENTAJAS DE LAS INTELIGENCIAS ARTIFICIALES EN EL PROCESO DE APRENDIZAJE EN ADOLESCENTES".

Esta entrevista tiene como objetivo explorar las experiencias y perspectivas de estudiantes de secundaria de entre 15 y 18 años que, en su proceso de aprendizaje, han utilizado herramientas de inteligencia artificial para completar actividades académicas. Gracias por participar en esta entrevista y compartir sus conocimientos y experiencias con nosotros.

Pregunta 1: ¿Podrías describir algunas de las herramientas de inteligencia artificial que has utilizado para completar actividades académicas y cómo las utilizas en tu proceso de aprendizaje?

Pregunta 2: ¿Utilizas estas herramientas en todas las asignaturas o hay alguna en particular en la que las utilices más? ¿Por qué crees que son más relevantes en esas materias?

Pregunta 3: Desde tu perspectiva, ¿cuáles consideras que son las ventajas de utilizar inteligencia artificial en tus actividades académicas? ¿Cómo te han beneficiado estas herramientas en términos de eficiencia, precisión o aprendizaje?

Pregunta 4: ¿Cuáles crees que son las desventajas de utilizar inteligencia artificial en tus actividades académicas? ¿Has experimentado alguna limitación o efecto negativo al usar estas herramientas?

Pregunta 5: Dada la facilidad y rapidez con la que se pueden completar las tareas escolares utilizando inteligencia artificial, ¿crees que su uso podría considerarse una forma de hacer trampa? ¿Por qué o por qué no?

Pregunta 6: En tu opinión, ¿cuáles podrían ser los efectos a largo plazo de usar demasiado estas herramientas de inteligencia artificial en el proceso de aprendizaje? ¿Crees que podría afectar tu autonomía, capacidad de resolución de problemas u otras habilidades importantes?

Pregunta 7: ¿Consideras que el uso de inteligencia artificial te ha ayudado a mejorar tus habilidades de aprendizaje, como la comprensión de conceptos? ¿Por qué?

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Ing. Julio Guamantica Suárez

Director de:

Unidad Educativa "Salinas Innova School"

En su despacho. –

De mi consideración:

Yo, ROGER OSWALDO GONZÁLEZ TIGRERO, con cedula de identidad N° 245023603-5, estudiante de la UNIVERSIDAD ESTATAL PENINSULA DE SANTA ELENA, por medio de la presente solicito a usted autorización para realizar una entrevista grupal a sus estudiantes sobre el tema "Ventajas y desventajas de las inteligencias artificiales en el proceso de aprendizaje en adolescentes". La información proporcionada será utilizada únicamente para fines investigativos en un proyecto de tesis.

Atentamente,

_____

Roger Oswaldo González Tigrero

C.I. 245023603-5

Salinas, 27 de junio de 2023

Lcda. Ketty Reyes Perero, MSc.

Directora de:

Unidad Educativa "7 De Noviembre"

En su despacho. –

De mi consideración:

Yo, ROGER OSWALDO GONZÁLEZ TIGRERO, con cedula de identidad N° 245023603-5, estudiante de la UNIVERSIDAD ESTATAL PENINSULA DE SANTA ELENA, por medio de la presente solicito a usted autorización para realizar una entrevista grupal a sus estudiantes sobre el tema "Ventajas y desventajas de las inteligencias artificiales en el proceso de aprendizaje en adolescentes". La información proporcionada será utilizada únicamente para fines investigativos en un proyecto de tesis.

Atentamente,

Roger Oswaldo González Tigrero

C.I. 245023603-5

Salinas, 27 de junio de 2023

CARTA DE CONSENTIMIENTO INFORMADO

Yo Betsie Silvestre Rodriguez , con CI: 09145768 3-0 representante de Erick Soriano Silvestre , con CI: 0928016500 declaro que se me ha explicado que mi participación en el estudio sobre "Ventajas y desventajas de las inteligencias artificiales en el proceso de aprendizaje en adolescentes" consistirá en responder una entrevista grupal que pretende aportar al conocimiento, comprendiendo que mi participación es una valiosa contribución.

Acepto la solicitud de que la entrevista sea grabada en formato de audio para su posterior transcripción y análisis, a los cuales tendrá acceso el equipo que conforma la carrera de Pedagogía de Idiomas Nacionales y Extranjeros de la Universidad Estatal Península de Santa Elena, y que se me ha asegurado que la información que entregue estará protegida por el anonimato y la confidencialidad.

El Investigador responsable del estudio, Roger González Tigrero, con CI: 245023603-5 se han comprometido a responder cualquier pregunta y aclarar cualquier duda que se le plantee acerca de los procedimientos que se llevaran a cabo, riesgos, beneficios o cualquier otro asunto relacionado con la investigación.

Por lo tanto, como participante, acepto la invitación en forma libre y voluntaria, y declaro estar informado de que los resultados de esta investigación tendrán como producto un informe. He leído esta hoja de Consentimiento y acepto participar en este estudio según las condiciones establecidas.

Betsie Silvestre R
Firma de Participante