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EXPLORING THE KNOWLEDGE AND APPLICATION OF AI AMONG STUDENTS AT PREPARATORIA NO. 18 AND PREPARATORIA TLAQUEPAQUE

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Introduction

This research project arose from concerns about the importance and demands that society places on teachers to improve their teaching skills in conjunction with their subject area. Given that we currently live in a globalized world, it is necessary to understand and use artificial intelligence (AI) in teaching practice, as the education system requires an evolution in the way classes are taught so that they are attractive and motivate students to achieve meaningful learning.

Rapid technological progress has placed AI at the center of numerous debates, both in academic and social spheres. These innovations unconsciously affect how teachers should interact with their students, especially those in adolescence. In the particular case of High School No. 18, the aim is to find out, through a sample survey, whether students are familiar with and use AI, as well as how often they use it both academically and in their daily lives, in order to raise awareness of some AI applications and the advantages and disadvantages of using them.

Adolescents are in a stage of discovery and evolution, where social relationships and emotional experiences play a fundamental role in their development. In this context, the existence of AI invites new dynamics and challenges that deserve to be analyzed in detail. In this sense, the proposal below is to continue motivating students to learn about and manipulate different types of AI, as it is necessary for them to be competitive in the workplace, given that today's world of technology is constantly changing.

Objective

To find out if second-, fourth-, and fifth-semester students at High School No. 18 are familiar with and use artificial intelligence.

Specific objective

To introduce second-, fourth-, and fifth-semester students to the different applications of this technology through the Artificial Intelligence course, so that they can identify and choose the one that best suits their interests, skills, and academic needs.

Origins of Artificial Intelligence in education

Artificial intelligence, as we perceive it today, is part of a growth in innovation. Throughout history, technology has undergone transformations from the steam era to digitalization. This growth has brought about significant changes and paved the way for the next, accelerating the pace of technological adoption and saturation in society. (Nasser, 2024) .

Each new technology builds on the progress of the previous one, leading to faster integration and growth. Given the surprising speed of acceptance, artificial intelligence is expected to go from being a novelty to gaining mass approval in just 25 years, which will not only introduce new technologies but also displace old ones, reshaping economic and social structures. (Shumpeter, 1942) .

Artificial intelligence is not only capable of imitating human intelligence, but also the capacity of the human mind to function and respond as such, which implies evolving and achieving a higher level

of understanding than that for which it was created. This transformation promotes the development of skills to adapt to change effectively, as well as openness to what is to come.

The advent of the internet and the proliferation of mobile devices also provided new ground for AI, driving the development of more sophisticated search engines and personal assistants that leveraged intelligent algorithms to deliver more efficient and personalized services. (Nasser, 2024)

With regard to the web, what is needed is for information through algorithms or texts to be more understandable by machines or devices in order to access a richer, more effective connection between users and the large amount of data available on the internet. This progress has been essential for the evolution of technologies to facilitate the search and management of information in a more intuitive and automated way, generating great interest for two main reasons: one economic and the other technological. The economic reason is based on the recognition that, due to market globalization and the competitive business environment with regard to technology, it is necessary to monitor the efficiency of new methods and learn from experience in order to increase it. (Allen, 2000)

One of the clear examples currently being experienced is the use of artificial intelligence in companies, as it is gaining ground over other methods, procedures, and work strategies. It is a competitive tool whose use brings great economic and structural advantages, being applied in sectors such as banking, insurance, pharmacy, tourism, leisure, energy, education, transportation, telecommunications, and industry, among others. For this reason, one of my concerns

as a teacher is to find out whether students at Preparatory School No. 18 of the University of Guadalajara use artificial intelligence.

Artificial intelligence (AI) tools are rapidly becoming established in educational systems and subsystems around the world. However, while they provide great opportunities to improve and expand learning, their expansion also poses certain risks: they are often used without the necessary regulatory frameworks to protect learners and teachers, and thus ensure a human-centered approach to the use of technology in education. Stefania Giannini, UNESCO Assistant Director-General for Education, shares her thoughts on the various implications of AI in education. (Unesco, 2024)

Artificial intelligence has changed education, offering advances in learning, while also posing ethical challenges such as overuse and difficulty in regulating it. The emergence of artificial intelligence has been a great help in organizing content for classroom sessions, such as teaching materials, among other things. These tools have increased productivity, as teachers have more time to implement new techniques and support resources in their classes thanks to AI. However, there are certain limitations, such as misuse by both teachers and students, which is why it is necessary to raise awareness about the consequences of misusing artificial intelligence.

Knowledge of AI during adolescence

The World Health Organization defines adolescence as the period of growth that occurs after childhood and before adulthood, between the ages of 10 and 19. Regardless of the difficulty in establishing an

exact age range, the adaptive, functional, and decisive value of this stage is important. (UNICEF, 2011) . Based on the above, the students enrolled in upper secondary education at the University of Guadalajara are mostly adolescents.

Part of the great need is “The importance of upper secondary education (EMS) is that it represents a bridge between basic and higher education, as well as preparing young people for their entry into the labor market and their personal and social development.” (CEMEJ, 2024) . It is essential that educational institutions constantly train their teachers, as each generation is different, and it is essential to ground the content in real-world themes so that adolescents in upper secondary education can find connections between theory and practice and thus apply it in their daily lives.

It is important to understand the unique characteristics of students, who are “active drivers of their own knowledge and reconstructors of the different academic content they encounter” (Hernández, 1998, p. 193). For this reason, teachers must be knowledgeable about the environment in which they teach, as it is essential to take into account the characteristics of today’s students’ personalities and adapt to their needs. One of the supports currently available is the great progress being made in the use of AI.

Teachers need to implement these new processes in their teaching to guide their students in the development of digital communication, that is, to familiarize them with the common language of AI and obtain a better response from artificial intelligence, making students aware of which application is most appropriate for a specific task. As the author mentions (Changoluisa, 2024)

, many teenagers use artificial intelligence (AI) on a daily basis. In particular, they show great interest in generative AI, which helps them write essays and reports, as well as create images and videos to share on social media, among a wide variety of other possible uses. This phenomenon reflects how AI has become integrated into the daily lives of teenagers, becoming an invaluable tool for various activities and creative expressions.

These statements say a lot about how technologies have evolved and how students of these new generations interact with their peers, family, and environment. Whereas before, interaction was personal, today there are many options for how they interact with each other, and in many cases, teachers themselves are unaware of how to use these applications. so it is necessary for both teachers and students to be on the same page in order to achieve meaningful learning for students and prevent it from being just a simple research project.

Concept and purpose of Artificial Intelligence

It is currently difficult to define exactly what artificial intelligence is. On the one hand, Bourcier (2003, p. 56) says that artificial intelligence is a branch of computer science that attempts to reproduce human cognitive functions such as reasoning, memory, judgment, and decision-making, and then entrusts some of these faculties, which we consider signs of intelligence, to computers. On the other hand, according to (Gutiérrez, 2006, p.11), artificial intelligence is one of the most fascinating and challenging areas of computer science, as it has taken intelligence as the universally accepted characteristic that differentiates humans from other creatures, whether living or inanimate, in order to build intelligent programs or computers.

We can therefore say that AI is not really “intelligence,” at least not in the sense of what human intelligence is. In general terms, AI is more of a simulation of human intelligence. The functioning of this intelligence is based on complex algorithms and mathematical models, which enable machines to process the data you give them in a short time and make decisions with a low probability of error (Gómez & Pérez, 2022).

APPLICATIONS OF AI IN EDUCATION

AI has great potential to change the way teachers teach and students learn, so it is essential to be aware of some of its applications in the educational environment.

- Information search: for up-to-date and relevant content for the design of study programs, methodological strategies, rubrics, among other things.

- Personalized teaching: Use of virtual tools to detect students’ mistakes or measure learning, which can be applied to the design of personalized tutorials and content.

- Teacher training: Access to new teaching methodologies and innovative educational processes, which will improve the quality of education.

- Prediction of school dropouts: AI allows the problem to be detected and solutions to be provided in advance to prevent students from dropping out of school.

- Collection and analysis of data from schools: In this area, student data can be collected on a massive scale and analyzed in seconds to make better and faster decisions based on real information.

- Applications used in education: These are all functional, adaptable, and useful tools in education, both for teachers and students. (Observatory of Educational Quality, Rafael Landívar University, 2024).

At Preparatory School No. 18, the test given to students focused on four applications. These tools are listed from easiest to most difficult to use from the students’ point of view.

1. Canva (<https://www.canva.com/es-es/about/>): This is a graphic design and image composition website for communication that offers online tools to create your own designs, whether for leisure or professional use. It offers a freemium service, which you can use for free, but with the option to pay for advanced features (Fernández, 2023).

2. ChatGPT (<https://chatgpt.com/>): This is a generative AI chatbot developed by OpenAI and powered by its patented GPT family of generative artificial intelligence (gen AI) models. (Belcic & Stryker, 2025).

3. Meta AI (<https://ai.meta.com/meta-ai/>): This is an artificial intelligence system created by Meta, the parent company of popular social media platforms such as Facebook, Instagram, WhatsApp, and Messenger. This AI seeks to improve the user experience across all Meta platforms (Branch, 2024).

4. Zotero (<https://www.zotero.org/>): This is a free, open-source, multi-platform bibliographic reference manager developed by the Corporation for Digital Scholarship. Its main objective is to help us collect and manage the resources necessary for our research (Guías BibUPO, 2025).

Methodology

This research was carried out in person in September from 1:00 p.m. to 2:00 p.m. at Preparatory School No. 18. A 30-question test was administered via Google Forms to obtain information.

The objective of this work is to find out what percentage of the students at Preparatory School No. 18 know and use Artificial Intelligence, and what percentage of these students implement which applications in their education.

According to Rincón Gómez (2014), the purpose of coding is to present the results in a simple way by reducing the variety of responses to a code or category that can be tabulated later. Following his proposal, this work was carried out in two stages: the first stage is to identify and separate the number of students who use Artificial Intelligence in their subjects. For this activity, we chose to implement a quantitative approach, which helped us make an initial distinction between those students who do not know and do not use any intelligent applications, whom we will call “AI Non-Natives,” and those students who do know and use some intelligent applications, whom we will call “AI Natives.” The second stage is to find out what tools and applications they use in their subjects to do their homework and/or classroom activities. It was necessary to implement a third stage, in which a course on Artificial Intelligence was given to the students, where they were taught how to use and implement the applications Canva, ChatGPT, Meta AI, and Zotelo.

For the qualitative approach, it was related to the emotional side of the students surveyed in a section called “ethics and honesty” (Table 4).

Likewise, this work aims to contribute to students’ acquisition of technological skills through Artificial Intelligence.

Participants

The sample consisted of 81 second-semester students, 55 fourth-semester students, and 45 fifth-semester students from the General Competency Baccalaureate program at the University of Guadalajara, with 53.9% women and 46.1% men. The participants were between 15 and 17 years old and attended Preparatory School No. 18.

Results

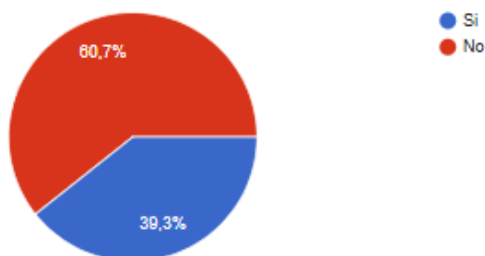
Based on the information collected in the first stage of this study, we observed that 72.7% of the students had heard of Chat GPT (an artificial intelligence tool) (Table 1). With this, we can say that 27.3% of our sample is “non-native to AI” and 72.7% is “native to AI.”

Of the percentage of “non-AI native” students, we can see in Table 2 that most of them use Google to do their homework and resolve their doubts. And that the students’ lack of knowledge about the use and applications of AI is based on three categories: 1st (29.1%) did not know that AI tools existed, 2nd (37.8%) do not know how to use AI tools, and 3rd (41.9%) prefer other tools other than Chat GPT.

Of the students who make up the “AI natives” group, 33.1% rarely use Chat GPT, see Table 3. Although this segment of the sample is placed within this category, their lack of knowledge of ChatGPT or other tools does not hinder the development of this research.

1. ¿Estás familiarizado con Chat GPT?

178 respuestas



2. ¿Has oído hablar de Chat GPT alguna vez?

154 respuestas

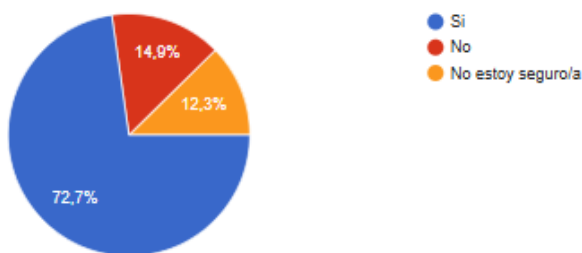
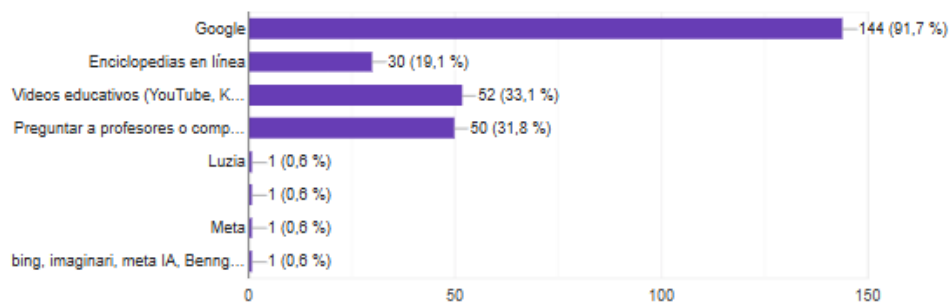


Table 1. Summary of the sample considered “AI Native” and “Non-AI Native.”

4. ¿Qué herramientas o recursos usas actualmente para hacer tus tareas y resolver dudas?

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157 respuestas



6. ¿Por qué no has utilizado Chat GPT hasta ahora? (Selecciona todas las que apliquen)

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148 respuestas

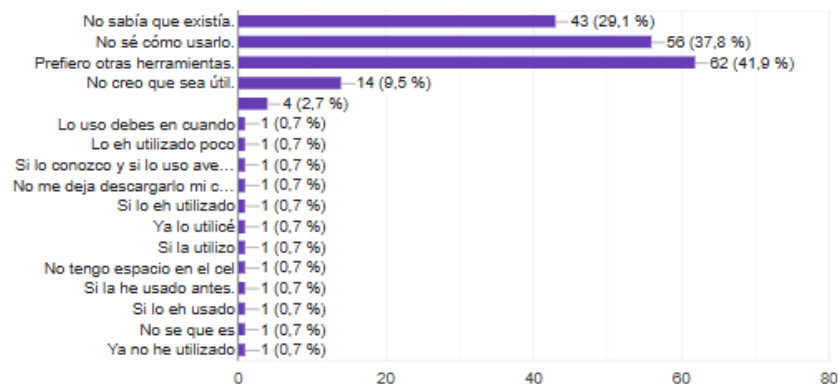


Table 2.

11. ¿Con qué frecuencias utilizas Chat GPT?

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178 respuestas

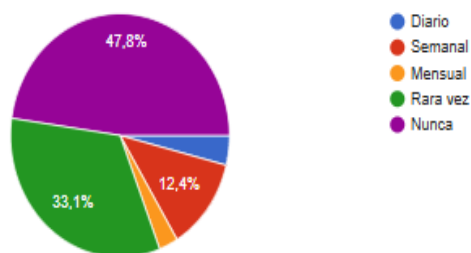


Table 3. Use of the Chat GPT application

Género

30 respuestas

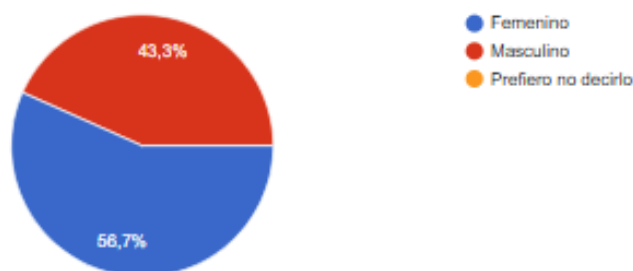


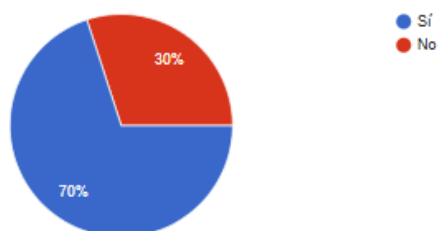
Table 4. Gender of the sample population of Preparatory School

Ética y Honestidad

8. ¿Actualmente consideras que el uso de Chat GPT en tareas escolares es ético?

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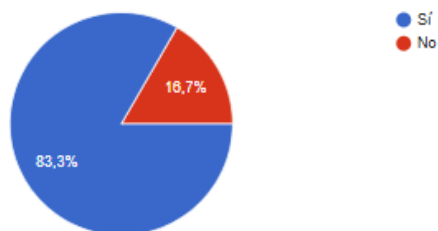
30 respuestas



9. ¿Crees que el uso de Chat GPT puede llevar a la deshonestidad académica? Por ejemplo, hacer trampa en tareas o exámenes.

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30 respuestas



10. ¿Hoy en día has copiado respuesta de Chat GPT sin hacer modificaciones?

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30 respuestas

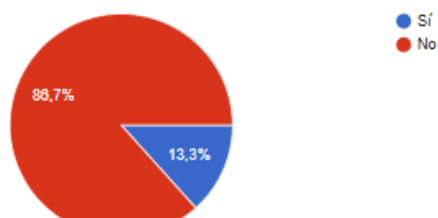


Table 5. Section on “Ethics and honesty” in the use of AI.

In the second stage of this study, we observe Table 4, which shows that 56.7% of the sample are women and 43.3% are men. This means that women are more interested in the use and knowledge of new tools.

In the qualitative section of this study in the area of “Ethics and honesty,” 70% consider the use of this Chat GPT tool to be ethical, but at the same time they consider it dishonest (83.3%), and 13.3% who have used this tool when doing research for their classwork have had to modify the information provided by the results. In other words, they do not copy and paste the information provided by the AI into their assignments, but rather supplement it with other information.

Conclusions

Chat GPT (Chat Generative Pre-trained Transformer) can be used in a variety of natural language processing tasks, such as chatbots, virtual assistants, text generation, machine translation, sentiment analysis, graphing, graphical representations, among many other applications that are still unexplored (García-Peñalvo, 2023) that are changing the ways of teaching and learning (Ayuso-del Puerto & Gutiérrez-Esteban, 2022).

The aim is to expand the sample to include students in their first to sixth semesters in order to help high school students acquire technological skills through artificial intelligence. As technology advances and with it the world, Preparatory School 18 students must have tools that help them perform better and stay up to date with these technologies. This will open up opportunities for them to access jobs in line with the skills they have acquired during their time at school.

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