

Influence of Artificial Intelligence on Academic and Work Productivity

J.C. Martínez-Perales

Instituto Politécnico Nacional. Escuela Superior de Cómputo.
Av. Juan de Dios Bátiz, esq. Miguel Othón de Mendizábal,
Mexico City 07738, Mexico.

B. Luna-Benoso

Instituto Politécnico Nacional. Escuela Superior de Cómputo
Av. Juan de Dios Bátiz, esq. Miguel Othón de Mendizábal,
Mexico City 07738, Mexico.

J. Cortés-Galicia

Instituto Politécnico Nacional. Escuela Superior de Cómputo.
Av. Juan de Dios Bátiz, esq. Miguel Othón de Mendizábal,
Mexico City 07738, Mexico.

U. S. Morales-Rodríguez

Instituto Politécnico Nacional. Escuela Superior de Cómputo.
Av. Juan de Dios Bátiz, esq. Miguel Othón de Mendizábal,
Mexico City 07738, Mexico.

M. Gómez Tress

Instituto Politécnico Nacional. Escuela Superior de Cómputo.
Av. Juan de Dios Bátiz, esq. Miguel Othón de Mendizábal,
Mexico City 07738, Mexico.

Abstract

This research project analyzes the impact of Artificial Intelligence (AI) on two fundamental areas: academic productivity and work productivity. In the educational field, the main applications of AI are examined, such as adaptive learning platforms, virtual assistants, and research and writing tools, identifying both their benefits time savings, personalization of learning, and immediate access to information and their risks, among which technological dependency, plagiarism, and the decline of critical thinking stand out. In the workplace, the adoption of AI in Mexican companies and its impact on sectors such as manufacturing, logistics, energy, and services are studied, demonstrating that, although most organizations are at a basic level of implementation, the perception of its impact on competitiveness is broadly positive. The research concludes that AI acts as a complement to human capabilities, that continuous training is a socioeconomic imperative, and that it is urgent to establish ethical and regulatory frameworks that guarantee responsible and inclusive technological development.

Keywords: Artificial intelligence, productivity, automation, digital transformation, ethics

I. Introduction

Artificial Intelligence (AI) has evolved in recent years from a mainly theoretical concept into a tool used in everyday, educational, and professional environments. The ability to analyze information and automate processes makes it a key element of economic and social change [\[1\]](#).

In the educational field, AI has opened new alternatives for personalizing learning, optimizing research, and improving students' time management. However, indiscriminate use raises questions regarding intellectual autonomy, academic integrity, and the development of critical thinking skills in new generations. In the work and corporate field, process automation is reconfiguring entire industries, generating both growth opportunities and challenges related to job displacement and the need for continuous training due to the rise of AI [\[2\]](#).

This research aims to comprehensively analyze the impact of AI on academic and work productivity, paying special attention to the national context. Through the analysis and review of specialized sources, statistical data, and case studies by industrial sector, it seeks to offer a balanced perspective that promotes the transformative potential of using this technology alongside the ethical and social challenges that its adoption entails [3].

II. Applications for Artificial Intelligence in Education

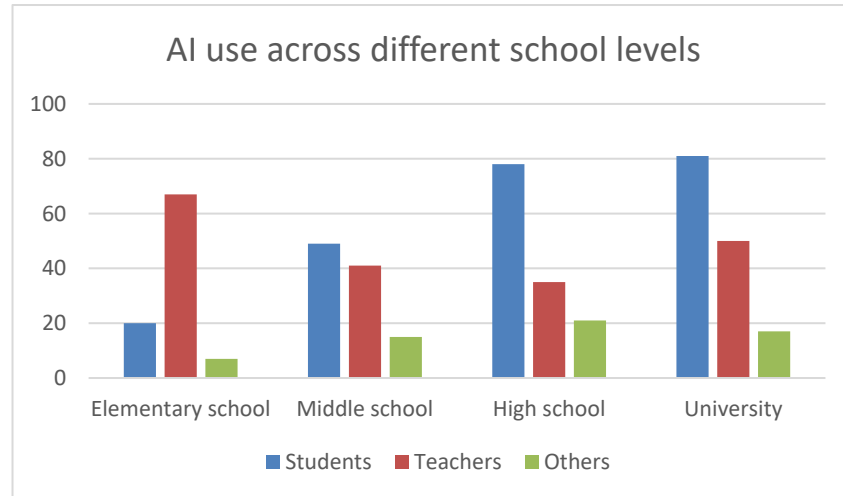
AI uses algorithms to adapt learning within intelligent educational platforms according to each student's needs, analyzing their academic performance and providing personalized tasks that allow them to advance at their own pace [4].

II.1 Benefits of AI in Education

AI in education encourages students to develop and promote critical thinking, creativity, and skills for designing and formulating precise instructions, in addition to fostering personalized learning and problem-solving capabilities. For educators, it facilitates tasks such as grading, designing educational materials, and analyzing academic performance, among others [5].

AI is driving transformative effects in education by personalizing learning, automating academic and administrative tasks, and providing constant support through virtual tutors and multimedia resources. However, its implementation poses challenges related to ethics, privacy, and responsible use; future success will be defined by combining technological innovation with critical thinking training and human supervision [6].

[Graph No. 1](#) shows the average levels of AI use among students, teachers, and others across different school levels.

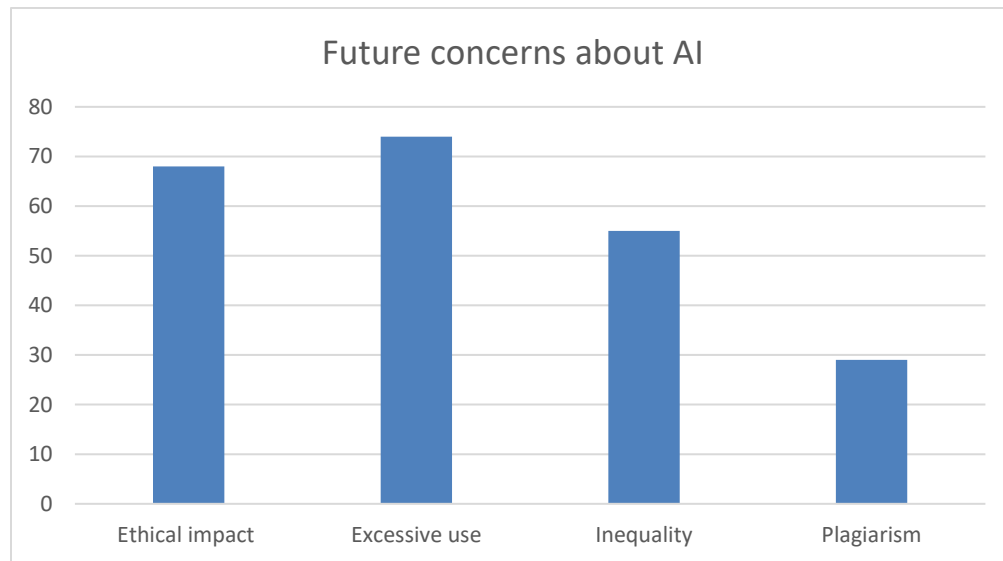


Graph No. 1. Average statistics of AI usage across school levels. Self-creation. Source: <https://www.gostudent.org/es-es/blog/estadisticas-sorprendentes-sobre-la-ia-en-la-educacion>

II.2 Challenges and Future Perspectives of AI in Education

Artificial intelligence offers educational benefits, but it also presents significant risks such as loss of privacy, algorithmic biases, inequality in technology access, and the potential reduction of human interaction in learning [7].

[Graph No. 2](#) shows statistics on teachers' and parents' concerns about AI across different areas of education.



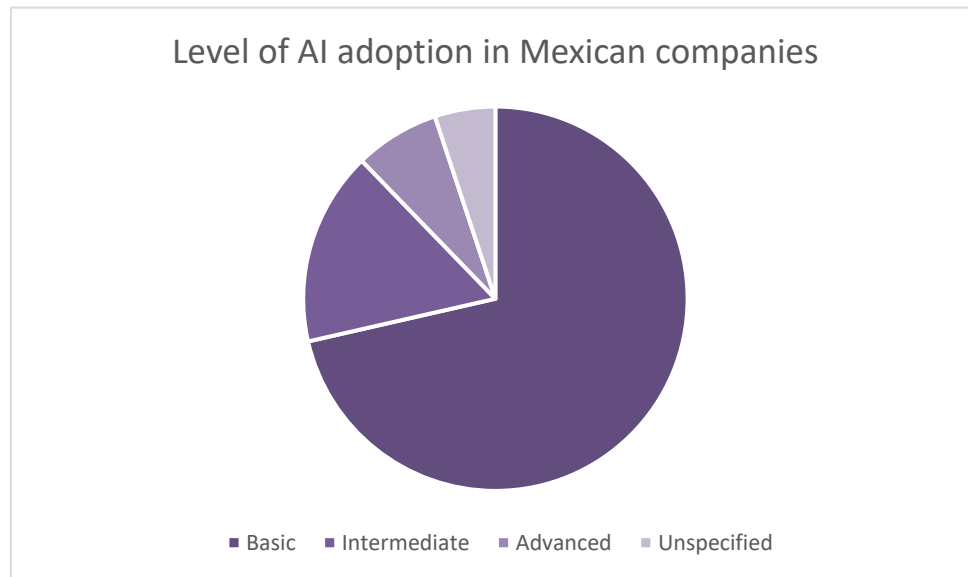
Graph No. 2. Statistics on AI concerns expressed by teachers and parents across different educational fields. Self-creation. Source: [https:// www.gostudent.org/es-es/blog/estadisticas-sorprendentes-sobre-la-ia-en-la-educacion](https://www.gostudent.org/es-es/blog/estadisticas-sorprendentes-sobre-la-ia-en-la-educacion)

Day by day, the use of AI will play an increasingly relevant role in classrooms, although it can never replace teachers, as empathy, guidance, and social (human) bonds will remain essential. Their responsibility will be the ethical, inclusive, and responsible integration of these tools, without losing sight of their purpose as supportive aids to enrich teaching rather than replacing the fundamental role of the educator [8].

Above all, AI in education must focus primarily on human, ethical, and inclusive utilization, as previously mentioned. Reducing technological gaps is among the main recommendations, applied toward improving infrastructure, digital access, security, transparency, and the absence of bias in AI systems, without replacing teachers, but rather further strengthening their training through the adaptation of tools to different cultures and regional languages, promoting global cooperation, and establishing standards for knowledge sharing [9].

III. Applications of Artificial Intelligence in the Workplace

Thanks to AI, productivity and efficiency have improved through process automation in national industry. However, its adoption remains low: only 3% of companies operate at an advanced level of AI, while 72% are at a basic level, 16% at an intermediate level, and 7% at an advanced stage, leaving broad potential for growth in the workplace. [Graph No. 3](#) illustrates the adoption levels of AI in Mexican companies.



Graph No. 3. Level of AI adoption in Mexican companies. Source: Self-creation with data from source [\[10\]](#).

In a study published by SAP, 64% of companies use AI to automate responses, streamline communication, and enhance user experience. Furthermore, 40% of national companies perceive the use of this technology positively, and 72% of decision-makers consider it to have a significant impact that improves competitiveness and business performance [\[10\]](#).

Artificial intelligence has revolutionized data analysis by automating tasks such as data collection, processing, and interpretation. Consequently, organizations can

identify patterns, make predictions, and detect anomalies faster and more accurately [11].

As shown in [Table No. 1](#), the industries that have implemented AI and its corresponding impact are outlined below.

Industry	AI use	Impact
Automotive and Auto Parts	Computer vision for quality control, predictive maintenance, and assembly robotics.	- Increased productivity. - Reduction of assembly line failures. - Higher operational safety.
Electronics and Advanced Manufacturing	Detects defects in components, automatic calibration, and real-time IoT monitoring.	- Cycle time optimization - Reduced waste. - Improved precision.
Chemical and Pharmaceutical	Process modeling, critical variable control, and quality deviation prediction.	- Greater production consistency. - Reduction of losses due to human error.
Logistics and Supply Chain	Route optimization, smart inventory management, and picking robotics.	- Decreased logistics costs, faster deliveries, and more flexible operations.
Food, Beverages, and Consumer Goods	Visual packaging control, packaging line automation, and demand analysis.	- Greater traceability and production efficiency, and adaptability to market shifts.
Infrastructure and Construction	Material modeling, real-time site monitoring, and risk analysis.	- Less raw material waste. - Improved safety and project planning.

Table No. 1. Source: <https://www.itmastersmag.com/inteligencia-artificial/automatizacion-industrial-con-ia-en-mexico-procesos-productivos-mas-inteligentes-y-seguros/>

III.1 Benefits of AI for Work Productivity

By analyzing large amounts of data, AI improves the workplace by increasing efficiency and optimizing processes, identifying new growth opportunities, and facilitating decision-making to offer faster, more personalized services to clients. Employees can focus on more creative and strategic activities by automating repetitive tasks, strengthening competitiveness and driving innovation in companies through AI [12].

Decision-making has improved through the use of AI by analyzing vast amounts of real-time data to generate more accurate predictions. Supported by machine learning, trend identification, process optimization, and risk reduction are facilitated. Additionally, it helps make recommendations based on objective data, reducing human errors and biases that support well-founded decisions.

AI will never replace human agency but rather complement it. While humans contribute experience, judgment, and emotional intelligence, AI brings speed, precision, and predictive analysis (Fig. No. 1) [13].



Fig. No. 1. AI will never replace human beings. Source:
<https://www.aicad.es/inteligencia-artificial-y-toma-de-decisiones>

III.2 Challenges and Future Perspectives of AI at Work

AI offers benefits such as increased productivity and greater efficiency across different sectors, while also presenting risks related to data privacy, algorithmic biases, and the potential impact on individual rights, which has led to the creation of laws regulating its responsible use.

To address these challenges, UNESCO approved a global recommendation in 2021 regarding the inclusion of ethics in AI, based on principles such as transparency, fairness, and data protection. Promoting responsible innovation for the benefit of society while respecting human dignity is its main objective [14].

AI is transforming the job market by automating various tasks, which in turn leads to the reduction of certain jobs while simultaneously creating new opportunities related to the development and supervision of these new technologies. Certain professions demanding empathy, care, and social interaction remain less susceptible to replacement by AI [15].

Accelerated AI growth implies that an increasing number of individuals seek training and development to acquire competencies related to handling and applying this technology. A key factor for improving employability adapted to new job market demands has created high demand for AI knowledge requiring continuous training tailored to each focus area (Fig. No. 2).



Fig. No. 2. AI requires continuous training and acquisition of new skills. Source: <https://www.infobae.com/tecno/2025/09/04/el-impacto-de-la-inteligencia-artificial-en-el-empleo-desafios-y-adaptaciones-para-las-nuevas-generaciones/>

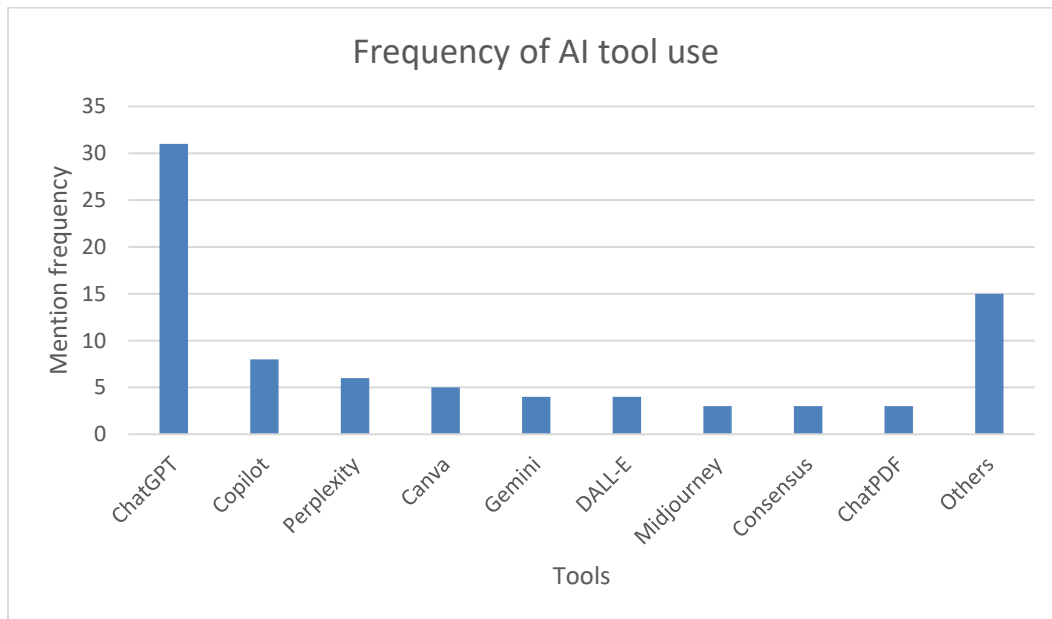
IV. Research Results

This research identified that AI is significantly transforming both education and the workplace. In both domains, AI has contributed significantly to increasing productivity, optimizing processes, and facilitating access to information, while creating challenges related to ethics, privacy, and technological dependency.

IV.1 Impact of Artificial Intelligence on the Academic Field

According to the results obtained, it is clearly demonstrated that AI has become a highly useful tool applied to education. Its use facilitates personalized learning once student needs are identified, simplifying access to educational resources, resolving doubts, and organizing academic activities. Additionally, managing intelligent platforms and assistants' helps improve comprehension across various academic subjects [16].

Graph No. 4 shows the frequency of use of AI tools in the workplace.



Graph No. 4. Frequency of AI tool usage in the labor sector. Self-creation. Source: <https://edutec.es/wp-content/uploads/2024/11/Edutec-INFORME-IA-MAQUETADO-FINALv2.pdf>

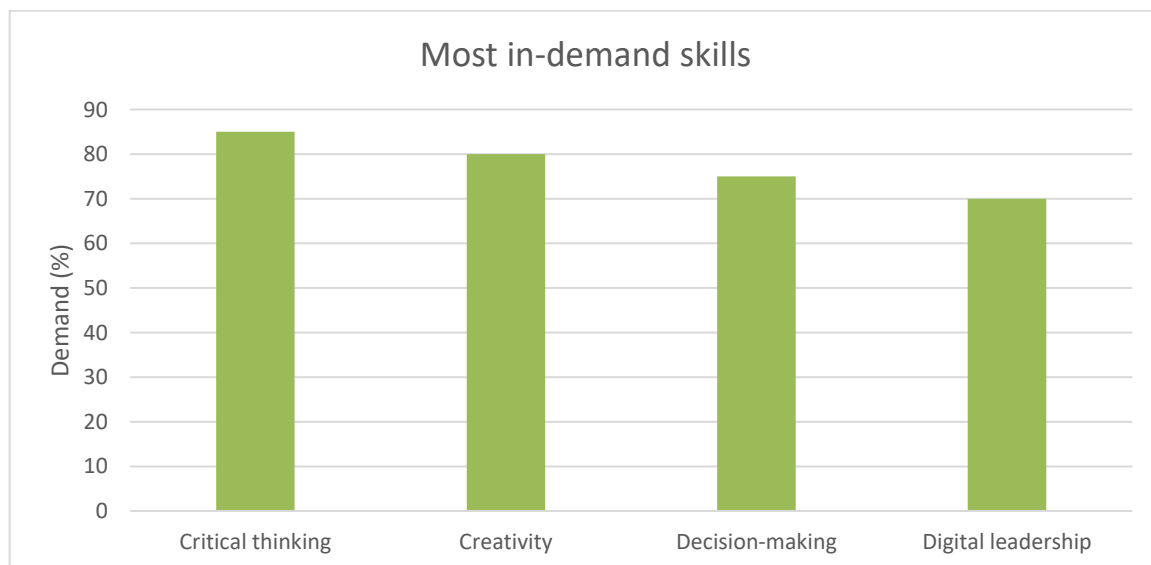
It was also observed that AI helps simplify tasks such as student evaluation, benefiting teachers by saving time spent grading assignments and projects, designing teaching materials, and monitoring student performance. Thanks to these tools, educators can invest more time in teaching and mentoring activities [17].

IV.2 Impact of Artificial Intelligence on Work Productivity

Results show that AI in the workplace is driving significant improvements in corporate productivity and efficiency, allowing repetitive tasks to be automated, large amounts of information to be analyzed quickly, and process optimization across key sectors such as manufacturing, logistics, automotive, construction, and services [18].

Among the most critical challenges identified was potential job displacement caused by task automation. Furthermore, key concerns center on managing information privacy and the urgent need for stricter regulations to guarantee and promote ethical, responsible technology usage [19].

[Graph No. 5](#) shows the skills most in demand for jobs following the adoption of AI in the workplace.



Graph No. 5. Most demanded skills in companies following AI implementation. Self-creation.

Source: <https://www.iebschool.com/hub/wp-content/uploads/2025/02/Impacto-de-la-IA-y-la-Automatizacion-en-la-Empresa.pdf>

These results indicate that AI never seeks to completely replace workers, but rather to augment and complement their capabilities, where complex decision-making remains essential about the development of human skills related to creativity, empathy, and critical judgment.

v. Conclusion

This research identified that AI impacts society increasingly, primarily in educational and workplace environments, due to its capacity to automate tasks, analyze data, and optimize processes, generating significant benefits in productivity and efficiency. However, challenges regarding ethics, data privacy, and responsible tool usage remain, highlighting the necessity to establish and maintain a balance between technological innovation and human supervision.

In education, AI usage is becoming a valuable tool to support and reinforce learning, facilitating information access and customized teaching tailored to individual student needs. Additionally, it assists teachers in streamlining academic and administrative duties. Moving forward, AI applications also showed that unchecked usage could encourage technological dependency, plagiarism, and diminished critical thinking—elements that must be carefully preserved. Thus, AI must function strictly as a supportive learning tool and never as a substitute for student effort and comprehension.

In the workplace, AI increasingly contributes to enhancing corporate productivity and competitiveness by automating processes and analyzing data efficiently, reducing time, costs, and errors across diverse activities. Continuous training is crucial to capitalize on opportunities provided by this technology, along with the requirement for workers to acquire new competencies to adapt to constantly shifting technological changes, changes that must align with the transformation and demands of jobs, which are the primary challenges ahead.

In conclusion, AI is a tool with vast potential to advance education and work. Latent risks and challenges must be addressed; however, benefits can be substantial if utilized ethically, responsibly, and consciously. The fundamental elements that will help individuals adapt to this new reality and fully leverage the advantages AI offers are the development of technological skills, the strengthening of critical thinking, and continuous training [\[20\]](#).

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