NEYART Journal
ISSN: 2992-7161

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Flores Zamorano Jesús Antonio
National Technological Institute of Mexico/ I.T. De Los Mochis
https://orcid.org/0009-0003-1725-7112
jesus.afz@mochis.tecnm.mx

Álvarez Machado Ernesto Alonso
National Technological Institute of Mexico/I.T. de Los Mochis
https://orcid.org/0009-0004-9014-3263
ernesto.am@mochis.tecnm.mx

Ayala Ruiz Jesús Arturo
National Technological Institute of Mexico/ I.T. of Culiacán
https://orcid.org/0009-0000-2047-018X
jesus.ar@culiacan.tecnm.mx

Erick Flores Zamorano
National Technological Institute of Mexico/ I.T. De La Paz
https://orcid.org/0009-0007-2577-2217
ercik.fz@lapaz.tecnm.mx

Flores Zamorano Damaris Nathanael
National Technological Institute of Mexico/ I.T. De La Paz
https://orcid.org/0009-0008-6223-0027
damaris.fz@lapaz.tecnm.mx

DOI: https://doi.org/10.61273/neyart.v4i1.189 **Received:** 12/23/2025 | **Accepted:** 03/03/2026 | **Published:** 04/02/2026

Abstract-- This study examines the perceptions of first-semester college students regarding the use of artificial intelligence in their academic education. This study employs a non-experimental, quantitative, cross-sectional research design involving 15 participants. The Artificial Intelligence Usage Questionnaire (AUIQ) was used to administer the measurement instrument to these participants. This detailed analysis was conducted based on six specific and essential dimensions: knowledge of and attitude toward the technology; perception of its usefulness; ease and comfort of use; privacy and security concerns; potential risks and associated drawbacks; and the teacher as a facilitator of this process. However, knowledge of the available tools is limited and not very diverse, primarily confined to ChatGPT and Gemini. Ninety-one percent of participants agree that the teacher is the key figure in determining how a school appropriately uses technology.

Keywords—digital literacy, higher education, artificial intelligence, generative AI, student perception.

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Keywords-- artificial intelligence, higher education, student perception, digital literacy, generative AI.

INTRODUCTION

Over the past decade, Artificial Intelligence (AI) has made significant strides, beginning to impact higher education and its various stages of teaching, learning, and assessment. The emergence of tools such as ChatGPT and Gemini has changed the landscape. Currently, university students already interact continuously with AI, whether in an academic setting or during leisure time. Consequently, universities must understand these realities and the effects of AI so that institutions are committed to making the necessary changes to their curricula.

Perception is a multidimensional construct that integrates attitudes, beliefs, prior experiences, and affective evaluations toward a specific object (Luckin et al., 2016). In the context of educational AI, students' perceptions directly influence their levels of technological acceptance, the frequency of use of available tools, and the academic outcomes derived from their application. Therefore, investigating the representations that university students construct around AI is not only an interesting exercise of theoretical academic relevance; it is also a practical imperative of the highest priority for any institution of higher education (IHE) seeking to innovate responsibly.

The objective of this paper is to understand university students' perceptions regarding an academic context in which artificial intelligence is a working tool, identifying potential factors that motivate or inhibit its use and determining whether these perceptions may be influenced by educational level or gender. This analysis was based on a review of relevant research from around the world and Latin America to contextualize the findings and validate them.

Background

International Background

Luckin et al. (2016) argue that artificial intelligence is not intended to replace humans, but rather to support personalized learning for each student. The key to university students effectively adopting AI lies in transparency and ethics in its implementation. The fundamental purpose is to enhance human talent, preventing technology from assuming excessive control—a premise that continues to guide the current debate in higher education.

The effects of artificial intelligence on higher education were analyzed (Popenici & Kerr, 2017), identifying that change occurs not only in the tools but also in the way students understand learning . The results remain consistent in both traditional and disruptive settings, indicating that students value personalized learning while expressing concerns about privacy, intellectual independence, or the risk of

becoming passive consumers of content at the expense of the teacher's role. Keep this analysis in mind: context is key.

Zawacki-Richter et al., in a systematic review of 146 articles published between 2007 and 2018 on artificial intelligence applications in higher education, and Mubaideen et al. (2019) found that most advances were observed in the areas of intelligent tutoring systems, automated assessment, and learning analytics. Students pointed out the lack of research from both the teacher's and the student's perspectives; therefore, incorporating studies based on how educational stakeholders perceived [U-ER] could fill this gap. This analysis has become one of the canonical references in this field.

For example, in their study on Perceptions of AI in the Classroom, Ouyang and Jiao (2021) outlined three approaches to this problem: replacing the teacher; working alongside the teacher; and assisting the student. The results indicated a trend favoring tools that support self-directed learning and autonomous self-regulation, rather than automated systems focused solely on continuous monitoring or assessment. In this sense, it is student agency that lies at the heart of educational AI implementations.

According to Chan and Hu (2023), college students view artificial intelligence as a positive development because it helps improve writing and speeds up academic work, much like having a personal tutor. However, they also express concern that students might unintentionally plagiarize and become overly dependent on such tools. A significant consequence is the emergence of critical reactions against artificial intelligence in universities.

Kasneci et al. (2023) view ChatGPT as a kind of private tutor that offers immediate feedback to students who struggle with writing, but they highlight issues of over-reliance and inequitable access that could exacerbate educational inequality. Research has shown that students' perceptions of artificial intelligence are shaped by their level of digital literacy and university policies.

Using data through October 2023, UNESCO IESALC (2021) identified gaps in infrastructure, teacher training, and policies that hinder the integration of AI into higher education in Latin America . It was observed that, while students value AI's ability to recognize information and simplify tasks, they lack sufficient critical awareness of the ethical and social implications.

Cobo Romaní (2019) offers a study of young Latin Americans' relationship with new technologies, including AI, within a context that has fostered, in relation to technologies, the integration of a supposed "technological optimism" alongside an indifferent critique of technological phenomena. In his analysis, this could translate into an instrumental, utilitarian, and/or superficial use, at best, that does not involve

the use of devices with truly transformative potential. This analytical perspective allows us to capture not only the use but also the degree of reflection that may exist in the experience students have had with technologies.

Fernández Batanero et al. Their study (2022) examined university students in Mexico, Spain, and Colombia, assessing whether students viewed artificial intelligence tools as a means of facilitating learning. The results showed a positive attitude among students in all three countries, as published in the Journal of Distance Education, RED. However, national approaches differ widely on key issues. On the one hand, Colombian respondents are somewhat more cautious regarding data privacy than their counterparts in the United States. In contrast, Mexican participants mention issues of inequality in access to artificial intelligence and technology.

A study by Morales et al. (2023) analyzed the opinions of Mexican senior college students regarding generative artificial intelligence and learning tools. In a study published in Apertura by the University of Guadalajara, they report that 78% said they had used at least one AI tool in the past six months, and that most respondents use AI tools for writing and/or synthesizing literature. However, less than 30% of respondents reported having received any kind of pedagogical training on the ethical and critical use of these tools, suggesting a gap in the curriculum.

Sunkel and Trucco (2012), in their report for the Economic Commission for Latin America and the Caribbean (ECLAC), laid the conceptual foundations for understanding the integration of digital technologies into Latin American education from a perspective of inclusion and equity. Their arguments regarding the digital divide, access conditions, and differing perceptions based on socioeconomic status remain relevant to the current analysis, given that unequal access t r AI tools in the region directly influences the perception and use of these technologies among low-income university students.

In Mexico, ChatGPT is the AI tool most widely used by students and professors (Chao-Rebolledo & Rivera-Navarro, 2024). Students use it for their assignments, and professors use it to plan lessons. The problem here is that, while every professor has access to generative AI, only 25% actually use it on a regular basis.

Research Objective

To analyze higher education students' perceptions of the inclusion of artificial intelligence in their academic training, as well as to identify the attitudes, evaluations, and factors associated with the integration of artificial intelligence in higher education.

Rationale

This research is justified by its theoretical, practical, social, and institutional relevance, as well as by the need to understand the phenomenon of artificial intelligence adoption in higher education from the student's perspective.

From a theoretical perspective, the study advances knowledge regarding the psychosocial and contextual factors that determine the acceptance of a technology in the educational setting. Despite the number of studies conducted on AI and education, the vast majority have prioritized technology-centric approaches or have been limited to assessing learning outcomes, overlooking students' subjective experiences (Zawacki-Richter et al., 2019). Therefore, this research aims to help bridge that gap.

From a practical perspective, the results of the research will enable higher education institutions to develop relevant, ethically responsible, and pedagogically grounded strategies for the incorporation of AI. The design of critical digital literacy programs, guidelines for responsible use, and the integration of policies on inclusion and technology use can be carried out in a more balanced and equitable manner, based on the results obtained regarding students' perceptions of these tools (Chan & Hu, 2023). Understanding differences in the perception of the digital divide based on socioeconomic status, gender, and location allows for the rapid identification of disadvantaged students and the development of initiatives aimed at promoting digital inclusion in higher education (UNESCO IESALC, 2021; Sunkel & Trucco, 2012).

From an institutional perspective, this research is grounded in the obligation of HEIs worldwide to structurally incorporate 21st-century information and communication technologies, while maintaining the humanistic ethos that characterizes the holistic education of students. In a context where AI raises questions about the nature of knowledge, authorship, and the role of the teacher, surveying students is unquestionably ethical.

Limitations

Methodological, contextual, and operational constraints are inherent in all research and determine the scope of the conclusions, as well as the possibility of transferring the results to other contexts. In this study, the limitations are summarized as follows:

The sample size constitutes a limitation; focusing on one or two HEIs, given that the context of different technological infrastructures in some HEIs varies from one region to another, does not allow for generalization to national or global scales.

The second limitation of this study is that it relies on self-reports, which carries a risk of socially desirable responding (for example, especially in contexts with high peer density, participants are more likely to report perceived beliefs as simply acceptable perceptions rather than as their subjective opinion).

Third, the rapid pace of technology can quickly render information irrelevant. New versions of language models and significant changes in institutional policy are likely to reshape students' perspectives within a matter of months.

Fourth, the operationalization of the perception construct has limitations. Since perception is a multifaceted construct that cannot be fully addressed through standardized surveys, the experiences and meanings that emerge from students' communities of practice are not readily available through traditional quantitative measurement techniques.

Finally, inequality in access to technologies still exists in Latin America, and this directly impacts students' perceptions of these tools.

METHODOLOGY

Type and Research Approach

The objectives of this study place it within the category of applied research, as it seeks to generate knowledge that can be put to immediate use and that contributes to addressing and understanding a specific issue in the educational context: university students' perceptions of the integration of artificial intelligence into their educational process. Unlike basic research, this type of research directs its findings toward practical decision-making in specific contexts (Hernández-Sampieri & Mendoza, 2018).

The research adopts a quantitative approach. This involves the systematic collection and processing of data expressed numerically and obtained from standardized instruments. This allows for the description of variables, the identification of patterns, and the comparison of groups using statistical techniques.

Based on this approach, the research is conducted through a structured organization and a deductive methodology. That is, starting from an appropriate theoretical framework, the variables of interest are identified and operationalized, the instrument is applied to the selected sample, and the objectivity, internal consistency, and replicability of the process are ensured (Creswell & Creswell, 2018).

Research Design

Since there was no experimental manipulation of the independent variables nor assignment of participants to treatment conditions, a non-experimental design was employed. Rather, the variables were observed in their natural form, as they occur in the real school environment (Kerlinger & Lee,

2002). Within the non-experimental typology, the design of this study was descriptive and cross-sectional, as data were collected at a single point in time, without longitudinal follow-up.

Participants

The sample consisted of 15 first-semester college students from a higher education institution. Of the total participants, 5 were women (62.5%) and 10 were men (37.5%), with ages predominantly ranging from 18 to 20 years, which corresponds to the typical profile of incoming college students.

The sample selection criterion was non-random (intentional) or, in other words, convenience sampling, because the study worked with a pre-formed class group that was, in itself, driven through the research process. This is a non-statistical sampling technique, and its results cannot be generalized to the general population (Hernández-Sampieri and Mendoza, 2018), but it is appropriate for this exploratory and descriptive study, which aims to understand the perceptions of a current subgroup.

Student enrollment for participation was restricted to those who had registered for the first semester (January–June 2025) and who committed to attending classes regularly. We excluded questionnaires that were incomplete or contradictory because they affect the reliability of the data.

Instrument

The Artificial Intelligence Use Questionnaire (AIUQ) was used for data collection; this instrument is specifically designed to measure university students' perceptions, attitudes, and practices regarding the use of AI tools in academic contexts. The CUIA consists of a total of 18 items distributed across thematic dimensions covering frequency of use, consideration of perceived benefits, identification of risks or limitations, and the level of ethical and critical training reported by participants.

A Likert-type scale was used for the items, in which respondents can choose from five responses ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), facilitating the measurement of students' degree of agreement or disagreement with the statements presented. This response format allows for the simple calculation of descriptive statistics—mean, standard deviations, and frequency distributions—for each item and each dimension of the instrument.

Procedure

The research process took place over 16 weeks, from January to June 2025, during the first semester of the academic year. The stages that structured this process are described below:

During the first four weeks (August), the planning and organizational activities for the study were carried out: review and update of the theoretical-conceptual framework, operational definition of the

variables, adaptation of the CUIA instrument to the specific institutional context, and processing of the necessary institutional permissions for access to the participants.

During weeks five through eight (September), a pilot implementation of the tool was conducted with a small group of students with characteristics similar to those of the final sample, in order to identify potential ambiguities in the wording of the items and/or adjust the tool prior to its formal application. Concurrently, the necessary administrative procedures were carried out to formalize the students' voluntary consent to participate in the study, and they were individually sent information regarding the study's objectives, which included assurances that their responses would be kept strictly confidential. Additionally, they were given the option to withdraw from the study at any time, in accordance with the ethical principles of research involving human participants.

The formal, group-based administration of the CUIA was conducted with 32 first-semester students, from the first to the fifth week of the October–November term. The instrument was administered in person, in the classroom, during a session specifically dedicated to this purpose. The average response time was estimated at approximately 20 minutes. The questionnaires were collected at the end of the session, and all booklets were verified as complete before being incorporated into the dataset.

Data entry, coding, and subsequent cleaning were carried out using SPSS version 25 during weeks 13 and 14. During this part of the process, the internal consistency of the responses was evaluated, outliers were identified and processed, and the database was restructured according to the dimensions of the instrument.

Finally, during the two-week period of December 15–16, time was devoted to conducting the statistical analysis of the data, interpreting the results, creating descriptive tables and figures, and drafting the final research report.

Data Analysis

Descriptive statistics were used to process the collected information, with the aim of organizing, summarizing, and characterizing students' perceptions based on the data obtained through the CUIA. Specifically, measures of central tendency (arithmetic mean and median), measures of dispersion (standard deviation and range), as well as absolute and relative frequency distributions were calculated for each of the 18 items in the instrument and for the set of dimensions evaluated.

SPSS version 25 (Statistical Package for the Social Sciences) is the SPSS software used for all data analysis, a fairly common and widely used statistical tool that measures the validity of social and

educational research. For visualization, all results were presented in tables and graphs to facilitate reading.

Due to the small sample size, a descriptive analysis was conducted without the intention of generalizing. Nevertheless, the findings help provide context for this situation and inform recommendations for action.

RESULTS

Figure 1 represents knowledge and willingness to adopt generative artificial intelligence.

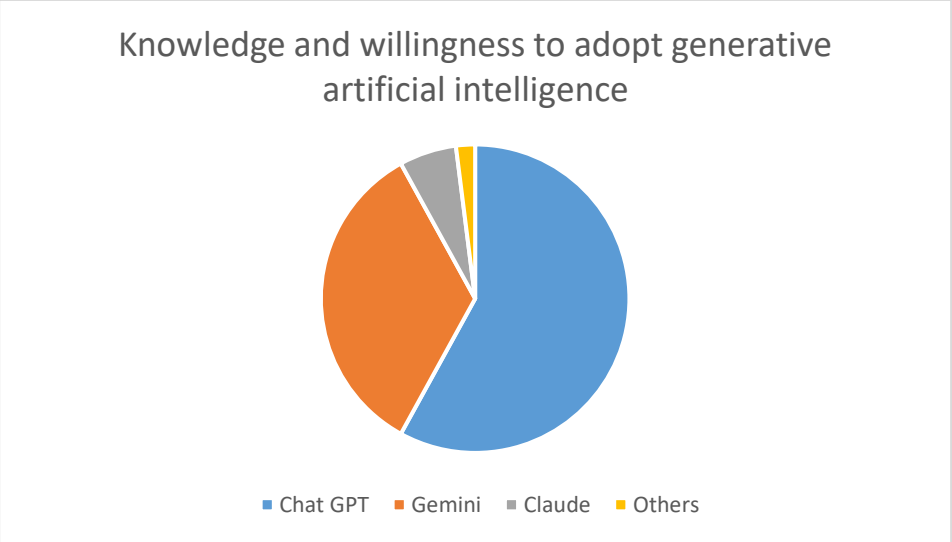

Figure 1. *Knowledge and willingness to adopt generative artificial intelligence*.

Source: Author's *own work.*

The results indicate a very limited depth of knowledge about AI among first-semester students. Most are familiar with ChatGPT and Gemini, with only limited knowledge of Claude. However, the rest are unaware of other generative AI platforms and models.

Figure 2 shows the results for the other dimensions.

Figure 2. *Results of the dimensions*.

Source: Author's *own work.*

The first dimension yielded one of the highest figures in the study, with 89% of respondents holding a positive view of the applicability of artificial intelligence in their studies. This figure indicates that very few first-semester students, compared to the total, dismiss AI as a tool for supporting learning, searching for information, writing papers, and solving academic problems.

A total of 81% of them perceived artificial intelligence tools as convenient and easy to use, provided that most students do not encounter serious technical issues when using these platforms. A note: All major generative AI services feature interfaces designed around usability principles for non-experts, meaning that first-year college students find them equally accessible and intuitive.

The privacy and security dimension received a favorable response of 78%, one of the lowest scores obtained in the survey, though it remains in the majority. This result shows that, while most students do not express critical concerns about the privacy of their data when using AI tools, a significant segment of nearly 22% does express greater concerns or reservations regarding this aspect.

This dimension shows the least favorable range of all dimensions, and with 77% of responses falling within this range, it indicates that students have the least well-established perception regarding the recognition of the risks and challenges of AI use. Although many consider risks such as technological dependence, misinformation, academic plagiarism, and algorithmic bias as potential risks, the 23% of neutral and unfavorable responses in this dimension represents the widest margin of all dimensions.

The dimension regarding the teacher's role in the use of artificial intelligence, with 91% of positive responses, had the highest percentage in the evaluation. This finding is particularly significant, as it

demonstrates that first-semester students highly value the importance of the teacher as a mediator, guide, and moral authority in the integration of artificial intelligence into academic processes.

Discussion

Although first-year college students have had some exposure to generative AI, this does not mean they possess a deep or well-rounded understanding of it. Given the limited information they appear to have about programs such as Claude, Copilot, Perplexity, or other niche platforms, it seems that their exposure to AI is more informal and not the result of structured academic training. Morales et al. (2023) report similar findings, noting that less than 30% of Mexican university students had received any informal training on AI tools.

Very high ratings regarding perceived usefulness are consistent with what was reported by Chan and Hu (2023). These authors reported that college students clearly identify some practical benefits of AI, such as improvements in productivity or feedback, and this occurs even when students have very limited knowledge of how these tools work. This finding is highly relevant from a pedagogical standpoint, given that, in educational settings, the perceived usefulness of a technology is a significant predictor of intention to use and sustained adoption (Davis, 1989, cited in Ouyang & Jiao, 2021).

When analyzing this discovery, we must consider ease of use, which does not imply that students do not engage deeply or critically with the tools offered to them. A student may interact seamlessly with an AI, but this does not mean they are using it with a reflective understanding of its possibilities and limitations. Thus, the convenience of technology, without pedagogical guidance, can lead to the use of technology as a technologically assisted practice that does not significantly impact the development of higher-order competencies (Cobo Romaní, 2019).

Although this concern is rare, its presence is relevant from an educational perspective. Higher education students require training on issues related to the management of personal data by AI systems, system security, and the exposure of sensitive information in the SED. This finding aligns with the observations of Fernández Batanero et al. (2022) that skepticism regarding data privacy is one of the main causes of ambivalence toward AI among university students in the region, and specifically in Colombia.

This result could be interpreted in at least two complementary ways. It may indicate that first-semester students still lack the academic experience necessary to accurately assess the ethical and epistemological risks associated with the use of AI in educational contexts. Alternatively, it may indicate an optimistic or technophilic inclination typical of today's university students, who tend to focus on the potential benefits

of technology rather than the associated risks (Popenici & Kerr, 2017). In any case, the findings reveal an urgent need to include essential AI literacy units in university courses starting from the very first semesters.

You are so deeply embedded that participants do not see you as just another piece, as a link in the chain that can be removed and replaced by some automated system. They believe that the professor identifies the criteria for use, teaches how to use them responsibly, and integrates AI tools in a pedagogically sound manner. This aligns with the pedagogical model of Ouyang and Jiao (2021), in which AI is used as an enabler of the learner or "educator," so that the technology does not replace the instructor but rather expands the opportunities available to each student that an instructor can offer. This is also in line with Luckin et al. (2016), where students value the AI models used as part of the pedagogy in teaching that employs these models.

CONCLUSIONS

The results of this study allow us to draw the following conclusions regarding first-semester college students' perceptions of the use of artificial intelligence in their academic education.

The analyzed data reveals that the majority of students held a favorable stance toward the implementation of AI in the educational process. Furthermore, college students incorporate AI into their academic practice quite frequently.

Students are familiar with only a few AI-generated tools, such as ChatGPT and Gemini. The reason for this is that students have interacted with AI solely through the media and have not received adequate training. Higher education institutions must bridge the gap between access to technology and critical training.

The usefulness and ease of use of artificial intelligence are well known, as the results show: approximately 90% rated its usefulness, and over 80% considered it easy to use. Usability is not necessarily indicative of or critical to usage. An interface can be used efficiently; this is not the same as students acquiring critical and creative skills—a distinction that is important for education.

The risk and privacy dimensions received the lowest scores in the survey, at 77% and 78%, respectively. These results suggest that students are using AI tools but have not been educated to question issues related to ethics and privacy . This raises questions about how private data is managed and whether this entails significant risks; there is little academic literature on this topic in Latin America.

The role of the teacher in the use of AI received the highest score on the entire instrument (91%), as students do not view AI as a replacement for the teacher, but rather as a tool that requires pedagogical guidance from the teacher. This finding presents an institutional opportunity: students are receptive to teachers providing guidance, which aids in the design and implementation of educational policies regarding the critical use of technology from the very first semesters of their degree program.

Research Directions

Conduct longitudinal studies to analyze the process of change in university students' perceptions of AI, and the possibility that such perceptions may become more critical and responsible in the context of their educational development.

It would be relevant to conduct broader studies, with diverse and representative samples, to understand how people from different majors, genders, and socioeconomic backgrounds in Latin America perceive artificial intelligence.

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Collaborative Work Table

Role	Author(s)
Conceptualization	Flores Zamorano Jesús Antonio
Methodology	Álvarez Machado Ernesto Alonso, Ayala Ruiz Jesús Arturo
Software	Erick Flores Zamorano, Damaris Nathanael Flores Zamorano

Validation	Flores Zamorano Jesús Antonio
Formal Analysis	Ernesto Alonso Álvarez Machado, Jesús Arturo Ayala Ruiz
Research	Erick Flores Zamorano, Damaris Nathanael Flores Zamorano
Resources	Flores Zamorano Jesús Antonio
Data Curation	Álvarez Machado Ernesto Alonso, Ayala Ruiz Jesús Arturo
Drafting - Preparation of the original draft	Flores Zamorano Erick, Flores Zamorano Damaris Nathanael
Writing - Review and editing	Flores Zamorano Jesús Antonio