



*Asesorías y Tutorías para la Investigación Científica en la Educación Puig-Salabarría S.C.  
José María Pino Suárez 400-2 esq a Lerdo de Tejada. Toluca, Estado de México. 7223898475*

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**TÍTULO:** El impacto de la inteligencia artificial en los métodos de enseñanza, evaluación, principales habilidades, y los factores clave que determinan su priorización en los procesos de educación superior: Una revisión de alcance.

**AUTORES:**

1. Dr. Ricardo Pérez Zúñiga.
2. Dr. Mario Martínez García.
3. Dr. Francisco Eduardo Oliva Ibarra.
4. Dr. David Elicerio Conchas.

**RESUMEN:** La Inteligencia Artificial (IA) impacta la educación superior al personalizar el aprendizaje y transformar la enseñanza y la evaluación, aunque enfrenta obstáculos como la falta de marcos éticos. Se realizó una revisión exploratoria en Web of Science y Scopus con 170 estudios mediante un cuestionario validado con criterios FINER. Los resultados indican que la IA potencia tres enfoques: las aplicaciones de IA, el aprendizaje basado en proyectos, y el aprendizaje colaborativo. En la evaluación, la IA complementa las herramientas tradicionales, enriqueciendo la retroalimentación sin reemplazarlas. Las competencias más valoradas son el pensamiento crítico, la alfabetización digital y la ética. Se requieren docentes capacitados y modelos híbridos de evaluación. El desafío ético es central para construir una sociedad más consciente.

**PALABRAS CLAVES:** competencias, alfabetización en inteligencia artificial, evaluación digital, métodos de enseñanza, procesos de enseñanza.

**TITLE:** The impact of artificial intelligence on teaching methods, assessment, key skills, and the key factors that determine their prioritization in higher education processes: A scoping review.

**AUTHORS:**

1. PhD. Ricardo Pérez Zúñiga.
2. PhD. Mario Martínez García.
3. PhD. Francisco Eduardo Oliva Ibarra.
4. PhD. David Elicerio Conchas.

**ABSTRACT:** AI impacts higher education by personalizing learning and transforming teaching and assessment, although it faces obstacles such as the lack of ethical frameworks. An exploratory review was conducted in Web of Science and Scopus, with 170 studies analyzed using a questionnaire validated with FINER criteria. The results indicate that artificial intelligence enhances three key approaches: AI applications, project-based learning, and collaborative learning. In assessment, AI complements traditional tools, enriching feedback without replacing them. The most valued competencies are critical thinking, digital literacy, and ethics. Trained teachers and hybrid assessment models are required. The ethical challenge is central to building a more aware society.

**KEY WORDS:** competencies, AI literacy, digital assessment, teaching methods, teaching processes.

**INTRODUCTION.**

Since its origins in the 1950s, artificial intelligence (AI) has evolved from a technological application into a key resource for the educational field. Its integration promises advances in the personalization and globalization of learning, though it remains essential to consider its ethical challenges and responsible uses (López-Chila et al., 2023). In the context of the Fourth Technological Revolution, intelligent devices and Generative Artificial Intelligence (GAI) tools have become fundamental to innovation. Faced with this scenario, universities, driven by diverse stakeholders, are seeking to adapt and integrate these advances (Seco et al., 2025). These innovative tools include Natural Language Processing (NLP)

applications such as Grammarly or Turnitin, as well as AI-assisted research platforms like ChatGPT, Elicit, Consensus, and Perplexity, among others (Ocen et al., 2025). GAI, in particular, has established itself as a revolutionary shift comparable to the advent of the internet (Fuente & Farhadian, 2025).

Likewise, AI has become a transformative force across multiple industries, reshaping workforce dynamics. In response, higher education institutions (HEIs) are striving to align their educational approaches with the demands of the labor market (Schmidt et al., 2025). However, there is a scarcity of research that comprehensively and holistically examines trends in the use of AI in HEIs (Akhmadijeva et al., 2024). The existing literature has not investigated how this technology would impact assessment in HEIs (Xia et al., 2024). Similarly, there is a lack of guidelines, policies, and resources to support efficient and ethical integration by faculty (Ren & Wu, 2025). These practical and research gaps highlight the need for critical reflection on the regulatory and ethical issues posed by GAI (Fontanillas et al., 2025).

The traditional education model, built on the pillars of teacher, student, and information, currently faces numerous challenges. These challenges highlight the need to adopt more sophisticated teaching methods to mitigate its limitations (El Gourari et al., 2024). In this context, integrating technological devices into the classroom has become an almost unavoidable necessity to support the educational process (El Hajj & Harb, 2023). Consequently, AI-powered tools specifically designed for integration into teaching methods at all educational levels have emerged (Castro et al., 2024). As examples, we can mention Khan Academy, Socratic by Google, DreamBox, and Gradescope.

In particular, AI-based teaching methods are characterized by the systematic incorporation of tools built on large language models, such as ChatGPT or conversational agents. These technologies not only streamline content delivery but also provide personalized feedback and enhance interaction between students and instructors. Consequently, and as expected, the application of GAI significantly improves both teaching skills and instructor satisfaction (Li, J. et al., 2025).

However, the evaluation of these innovative methods, particularly within HEIs, faces two major obstacles: an excess of assessment criteria and the lack of a standardized evaluation framework (Li, S., et al., 2024). While numerous studies have been developed that address the application of AI from diverse perspectives, this situation reveals a critical research gap: the near absence of dedicated scientific mapping studies on AI-driven teaching methods (Castro et al., 2024).

AI has established itself as an innovative tool with great potential to transform education, thanks to its ability to adapt to digital platforms and revolutionize teaching processes. Specifically, it enables the personalization of education, optimizes administrative efficiency, and assists teachers in creating more effective learning experiences (Bustamente Bula & Camacho Bonilla, 2024).

To understand this impact, it is essential to consider contemporary educational environments, where teaching and learning processes are conceived as the practical outcome of people, classrooms, books, technologies, policies, and emotions interacting and mutually influencing each other on a daily basis (Fenwick & Edwards, 2010). Fundamentally, the teaching process is the intentional and systematic design of conditions, interactions, and pedagogical resources to facilitate learning. Within this framework, AI optimizes these processes, enhancing the teacher's role as a facilitator and allowing them to devote more time to instruction and direct interaction with students (Mendoza Sandoval et al., 2024).

However, a critical research gap persists. Studies show that teacher educators who view teaching processes primarily as the transmission of knowledge tend to have difficulty understanding learning processes and allocate a significant amount of resources to planning (Virtanen & Parpala, 2023), both regarding external factors—such as AI implementation, assessment, and the learning process—as well as curriculum design. GAI represents a transformative innovation for teaching, learning, and assessment in HEIs, presenting both opportunities and challenges (Galán Iñigo et al., 2025).

Assessment is a crucial component whose role has expanded to encompass both curriculum design and teaching practice. It can take various forms (diagnostic, formative, summative, peer, or self-assessment)

depending on the intended learning outcomes (Hooda et al., 2022). Artificial Intelligence is generating significant interest in the field of educational assessment. Its advances promise to improve the effectiveness and validity of assessments, particularly through the analysis of process-related big data obtained in digital environments (Gardner et al., 2021). Beyond automating administrative, grading, feedback, and plagiarism detection tasks, AI tools provide detailed information on student progress. This enables teachers to offer support and guidance proactively when needed (Hernández-Orallo, 2017).

However, traditional methods are proving increasingly inadequate, necessitating their adaptation in the face of GAI's emergence. Despite advances in assessment strategies, a research gap persists: studies on integrating approaches such as learning analytics are scarce, and more specifically, the literature has yet to thoroughly examine the concrete impact of GAI on assessment in HEIs. Furthermore, existing works are limited, preliminary, and primarily concentrated in the year 2023 (Xia et al., 2024).

The growing influence of AI algorithms on critical decision-making is shaping our choice landscapes and poses structural challenges for society and the labor market. Faced with this scenario, HEIs are compelled to equip the future workforce, with an emphasis on developing the necessary skills (Lau et al., 2019).

In this context, GAI emerges as a key tool for developing cross-functional competencies, provided it is adopted with a critical, ethical, and pedagogically intentional approach (Deroncele-Acosta et al., 2025).

Therefore, universities must train students in its ethical and critical use, serving as laboratories to develop these competencies in students (Ponce Rojo et al., 2025).

However, a significant gap persists; the connection between GAI and these competencies, as well as its sustainable adoption, remains largely unexplored. To overcome this, it is necessary for institutions to develop and validate comprehensive assessment tools that measure the required key competencies, with the participation of students and educators, thereby preparing graduates for a sustainable professional future (Pelaez-Sanchez et al., 2024).

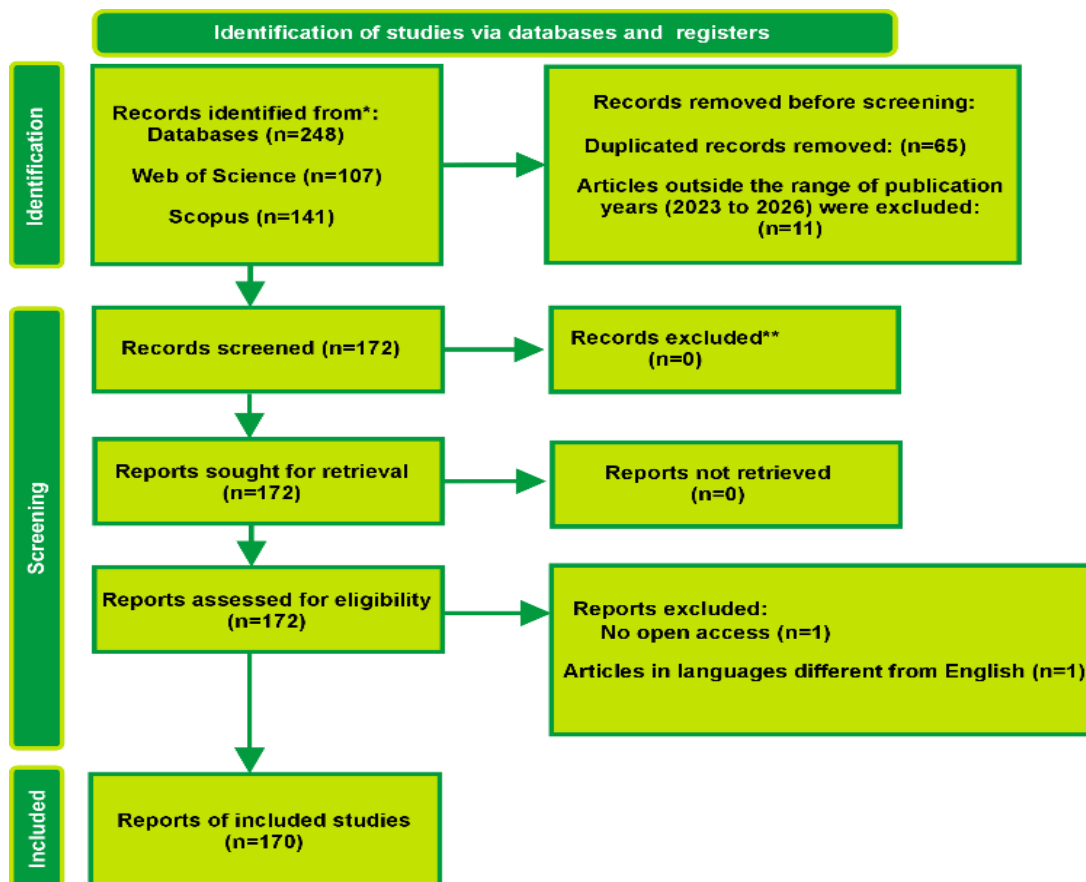
Main Objective is To analyze the impact of AI on teaching and assessment methods in HEIs, and to identify the key competencies, as well as the priority design and management factors that determine its effective implementation in teaching processes.

## DEVELOPMENT.

### Method.

For this scoping review, the PRISMA flowchart was used as a guide (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) (Haddaway et al., 2022). The literature search was conducted on October 28, 2025, in the Web of Science (WoS) and Scopus databases. The inclusion criteria comprised articles from the 2023-2026 period, including early access publications. This timeframe is justified by the significant momentum gained by artificial intelligence, particularly following the launch of ChatGPT in late 2022 (Kalota, 2024). Figure 1 describes the selection process.

Figure 1. PRISMA flow diagram.



**Inclusion and exclusion criteria.**

The search strategy utilized the terms "Artificial Intelligence", "Higher Education", and "Competenc\*". Filters were applied to limit the results to original research or review articles in English, with open access, and within the field of Education. Furthermore, exact keyword filters were used for: "Students", "Generative Artificial Intelligence", "ChatGPT", "Artificial Intelligence (AI)", "Teaching", "Education", and "Ethics".

An initial search yielded 248 records. After removing 65 duplicates and 11 articles outside the specified date range, the remaining 172 records were screened with no studies excluded at this stage. All articles were retrieved for an eligibility assessment, during which one study was excluded for not offering open access and another for not being in English. Ultimately, 170 studies met all inclusion criteria and were incorporated into this scoping review.

Below are the detailed search strings that comprise the final search strategy for this scoping review. The supplementary material contains the complete documentation of the search process, as well as the study metadata.

**WoS search string.**

("Artificial Intelligence") (Topic) AND ("Higher Education") (Topic) AND Competenc\* (All Fields) and Open Access and 2026 or 2025 or 2024 or 2023 and Article or Review Article (Document Types) and English (Languages).

**Scopus search string.**

(TITLE-ABS-KEY ("Artificial Intelligence")) AND TITLE-ABS-KEY ("Higher Education") AND TITLE-ABS-KEY (competenc\*) AND (LIMIT-TO (SUBJAREA, "SOC")) AND (LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "re")).

### **Design and validation of research questions.**

Ten questions were formulated, grouped into two dimensions: six demographic questions (DQ) to contextualize the study and present its background, and four research questions (RQ) to guide the core analysis.

#### **DQ:**

DQ-1 What is the geographic distribution, by country, of the studies included in the review?

DQ-2 What research designs predominate in the studies analyzed?

DQ-3 What is the educational level of the participant populations in the reviewed studies?

DQ-4 What is the learning format?

DQ-5 Which training areas have implemented AI?

DQ-6 What are the most commonly cited AI tools?

#### **RQ:**

RQ-1: What are the most commonly used teaching methods with AI?

RQ- 2 What educational design strategies or interaction mechanisms are proposed to strengthen teaching processes?

RQ-3: What assessment tools are used with AI?

RQ-4: What skills are most commonly identified with AI integration?

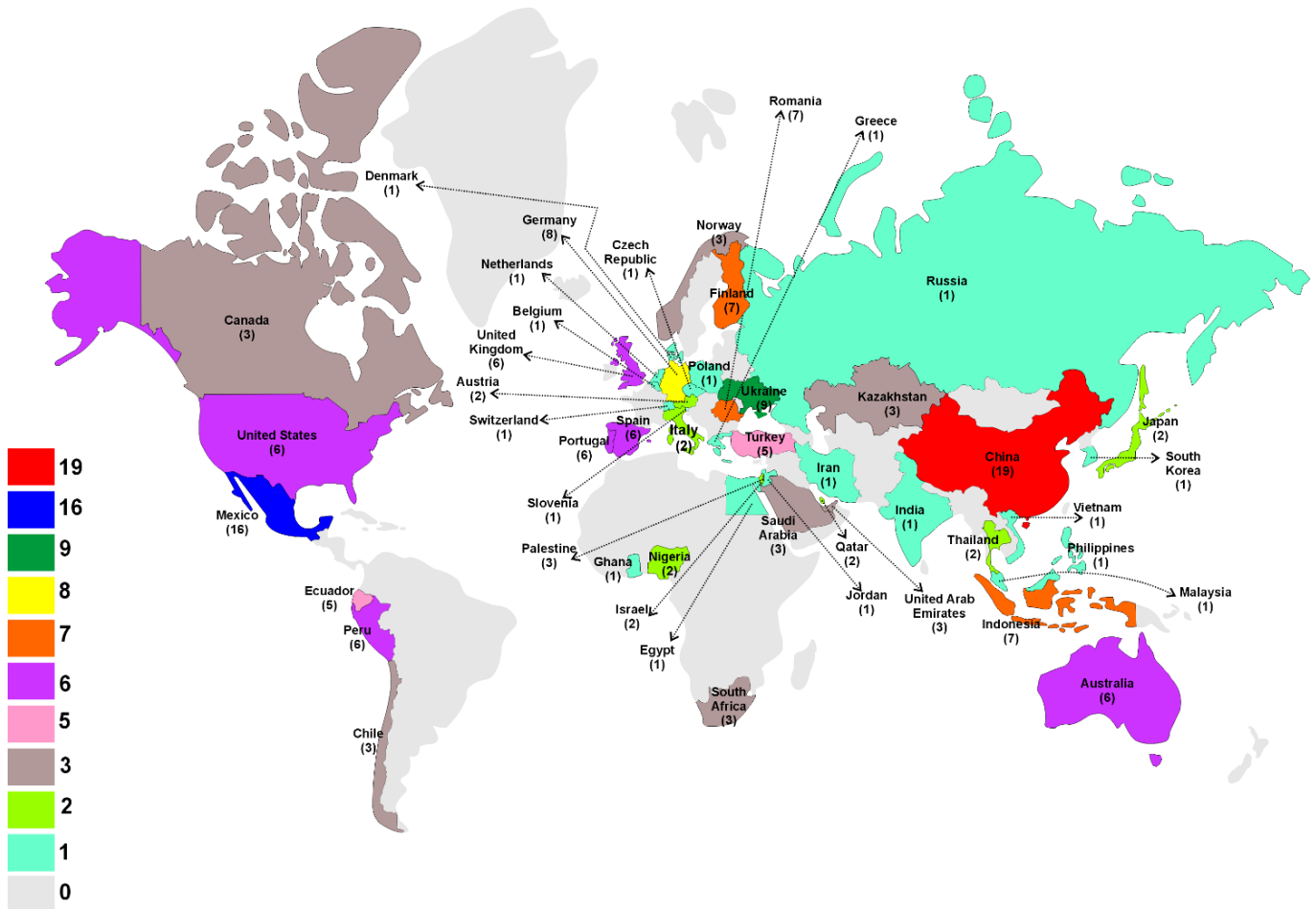
The design and validation of the questionnaire were developed in accordance with FINER criteria, which ensure that the questions are feasible, interesting, novel, ethical, and relevant, thereby guaranteeing the instrument's validity and potential impact (Willis, 2023).

### **Results.**

DQ-1 What is the geographic distribution, by country, of the studies included in the review?

The analysis reveals a highly concentrated distribution: China, with 19 scientific publications on the subject, and Mexico, with 16, lead the sample by a wide margin, together accounting for 35 papers—well ahead of the rest. Ukraine (9) and Germany (8) occupy a second tier, followed by an intermediate block of countries with 7 and 6 units each. This group includes Finland, Indonesia, and six nations—Australia, Peru, Portugal, Spain, the United Kingdom, and the United States—all with 6 publications. The majority of the more than 30 remaining countries show a marginal presence, with figures ranging from 3 to 1. The latter value is the most common, particularly among the European and Asian nations listed (Figure 2).

Figure 2. Geographic distribution of scientific output.



DQ-2 What research designs predominate in the studies analyzed?

Table 1 presents the frequency and percentage of the article types analyzed in this scoping review.

Research articles are the most frequent category, with 124 articles accounting for 72.94% of the total.

They are followed by systematic literature reviews with 19 articles accounting for 11.18%; review articles with 17 articles accounting for 10.00%; meta-analyses with 4 articles accounting for 2.35%; and scoping reviews with 2 articles accounting for the remaining 1.18%. The predominance of research articles in this scoping review suggests that this type of publication constitutes the primary source of new knowledge generation, as they present original data, detailed methodologies, and concrete results.

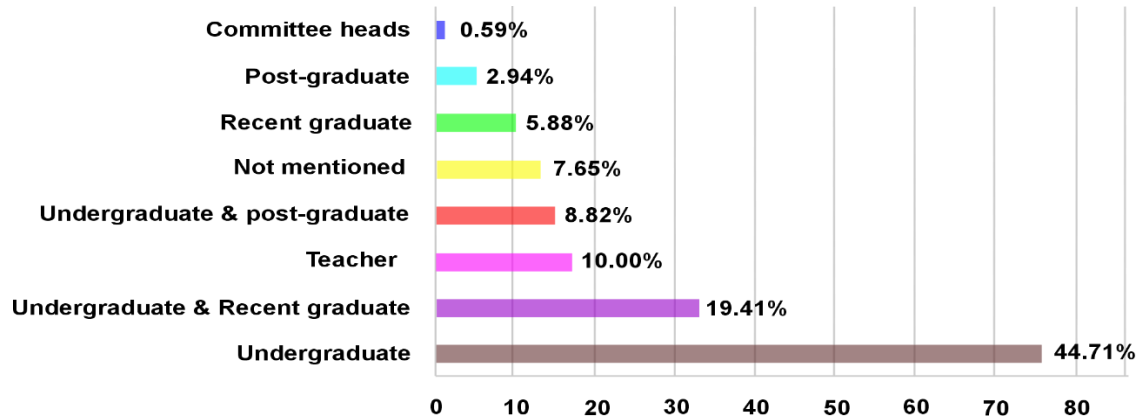
Table 1. Frequency and percentage of the article types analyzed.

Type of article	Frequency	Percentage
Research article	124	72.94%
Systematic literature review	19	11.18%
Review	17	10.00%
Meta-analysis	4	2.35%
Scoping review	2	1.18%

DQ-3 What is the educational level of the participant populations in the reviewed studies?

In relation to DQ-3, Figure 3 presents the educational level of the participants. The most frequent category is "Undergraduate" at 44.71%, representing the majority. It is followed by "Undergraduate & Recent Graduate" at 19.41%, ranking as the second most common. Next, an intermediate group is observed, consisting of "Teacher" at 10.00%; "Undergraduate & Post-graduate" at 8.82%; and "Not mentioned" at 7.65%. Finally, the categories with the lowest percentages are "Recent Graduate" at 5.88%; "Post-graduate" at 2.94%; and lastly, "Committee heads" at just 0.59%. The predominance of "Undergraduate" and "Undergraduate & Recent Graduate" suggests that the student population or those transitioning to the workforce are the most accessible or interested group. The presence of "Teacher" as the third group may indicate that teacher training and their explicit involvement in the educational process are relevant aspects in relation to the topic under study.

Figure 3. Distribution of participants by category.



#### DQ-4 What is the learning format?

The results illustrate the relationships and frequency distributions among these variables. Regarding learning formats (DQ-4), online learning emerges as the slightly predominant mode 23.53%, though the margin over hybrid learning 22.94% is minimal. Of particular note, 39.41% of respondents did not specify a format. Similar percentages for hybrid and online modalities are consistent with both formats' integration of digital technologies that support AI tool use. These modalities are more compatible with the implementation of artificial intelligence compared to face-to-face education, which has a lower percentage. This may be due to the fact that its traditional dynamic presents greater limitations for the integration of digital technologies in the classroom.

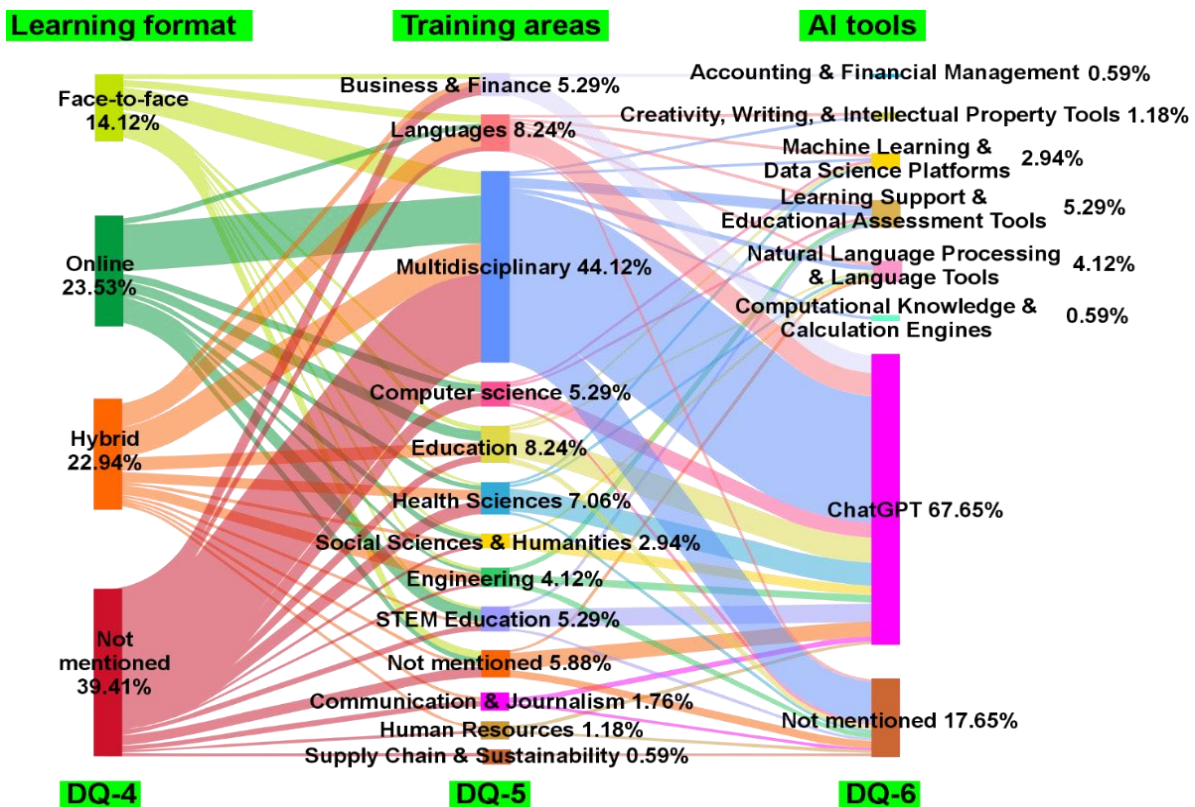
#### DQ-5 Which training areas have implemented AI?

Regarding the field of study (DQ-5), the predominant area is multidisciplinary 44.12%, demonstrating that the implementation of AI is not confined to a single academic discipline. Following this, the fields of Languages and Education are represented at 8.24% each. It is suggested that the Multidisciplinary category is the most cited because it reflects the cross-cutting and applied nature of artificial intelligence across all areas of education. AI is not limited to a single career or technical field but rather integrates into multiple disciplines.

DQ-6 What are the most commonly cited AI tools?

In terms of AI tools used (DQ-6), ChatGPT is the dominant tool (67.65), while all other tools show significantly lower usage rates. Additionally, 17.65% of cases did not mention a specific tool. It reflects that AI is a cross-disciplinary tool, used across multiple fields to solve complex problems. In the case of ChatGPT, it represents a technological milestone in generative AI models, serving as a central object of study for researchers and students in the field.

Figure 4 presents a Sankey diagram of the demographic data (DQ-4, DQ-5, and DQ-6), illustrating the relationships between learning formats, subject areas, and AI tools.



RQ-1: What are the most commonly used teaching methods with AI?

Regarding teaching methods (RQ-1), 30.00% of respondents did not mention any. Among the most cited methods, the following were prominent, in order of frequency: AI applications 18.24%, project-based learning 17.06%, and collaborative learning 16.47%. Three pedagogical approaches account for the majority of mentions in the analysis: Artificial Intelligence (AI) Applications, Project-Based Learning

(PBL), and Collaborative Learning. Together, these trends reflect a shift toward more active, interconnected, and technology-integrated educational models.

Project-Based Learning, by its very nature, constitutes a formative process that fosters the development of fundamental competencies such as critical thinking, creativity, and complex problem-solving. Complementarily, Collaborative Learning owes its relevance to the pedagogical richness that emerges from peer interaction. Within this framework, the ability to work in teams becomes essential, and the strength of this approach lies in its contribution to preparing students to collaborate effectively in diverse and complex environments.

AI Applications, for their part, occupy a prominent place that responds to an unavoidable reality in the contemporary educational context. Their appeal lies in the use of tools such as intelligent tutors and learning analytics systems, which are transforming both the design and the experience of the educational process. In this scenario, AI positions itself as a learning facilitator, enhancing the personalization and effectiveness of pedagogical interventions.

RQ- 2 What educational design strategies or interaction mechanisms are proposed to strengthen teaching processes?

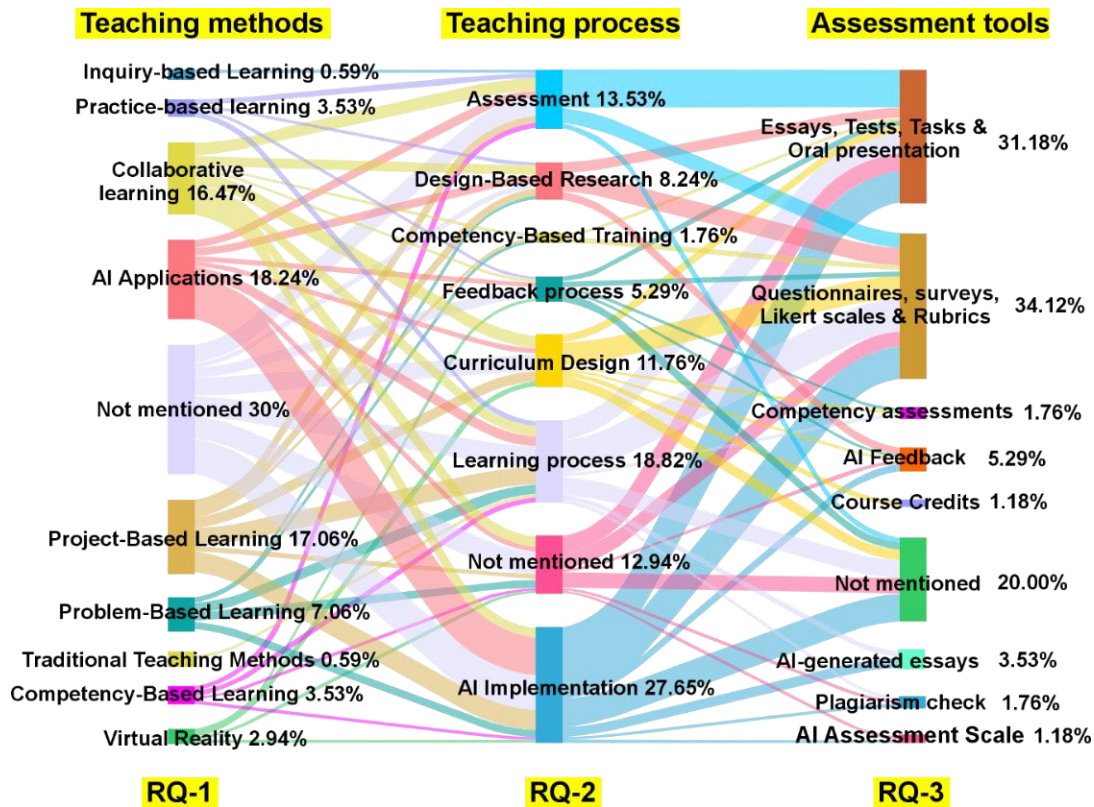
Concerning teaching processes (RQ-2), the most frequently mentioned was AI implementation 27.65%, followed by learning process 18.82. Assessment 13.53% and curriculum design 11.76% also represented significant proportions. The implementation of AI, as the most frequently mentioned element, emerges as a strategic necessity for, among other purposes, monitoring participatory dynamics in virtual environments by tracking in real time each student's contributions to shared documents or discussion forums. Likewise, generative AI tools can perform cognitive support functions, facilitating processes such as idea generation through collaborative brainstorming.

In this sense, AI assists educators in enhancing the practices they already implement, enabling them to evaluate tests and presentations more thoroughly, enrich the feedback provided, and strengthen both the attentive observation of the learning process and practice-based assessment.

RQ-3: What assessment tools are used with AI?

Finally, for assessment tools (RQ-3), the most common were questionnaires, surveys, Likert scales & rubrics, at 34.12%. Other notable tools include essays, tests, tasks & oral presentation at 31.18%. The category not mentioned also represented a high percentage, at 20.00%. In the age of AI, traditional assessment methodologies maintain their relevance. The dominant categories—which include, on one hand, questionnaires, surveys, Likert scales, and rubrics, and on the other, essays, tests, tasks, and oral presentations— suggest that, for now, AI is emerging not as a substitute for assessment mechanisms, but as a complement.

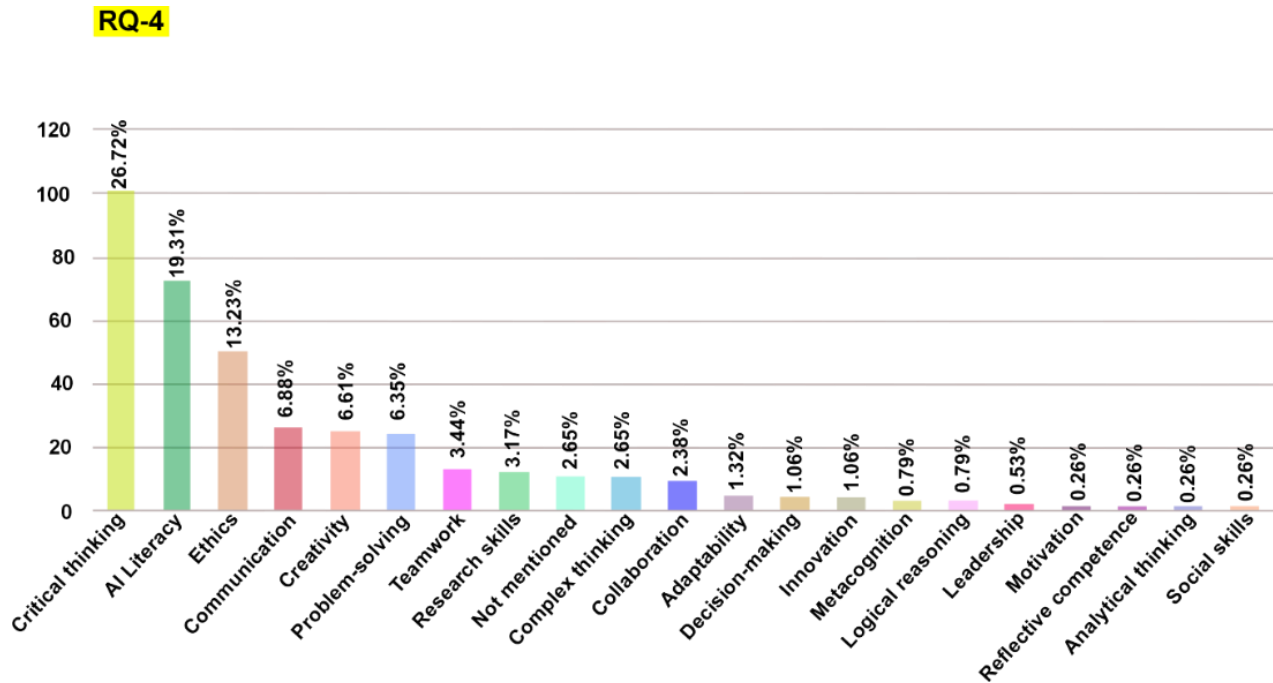
Figure 5. Sankey diagram: results for teaching methods (RQ-1), the teaching process (RQ-2), and assessment tools (RQ-3).



RQ-4: What skills are most commonly identified with AI integration?

RQ-4: Based on bar graph, the most frequent skills are critical thinking 26.72%, digital literacy 19.31%, and ethics 13.23%. The combined percentage of these three areas 59.26% indicates they are prioritized within the training program under review. In the integration of artificial intelligence into current educational processes, the three most prominent categories—Critical Thinking, AI Literacy, and Ethics—represent the fundamental pillars of student formation. Notably, Ethics stands out as a key element, emphasizing the social responsibility of those who use AI and the moral implications of these technologies

Figure 6. Principal competences found in the research.



**Discussion.**

Regarding teaching methods (RQ-1), the results highlight AI-based applications 18.24%, project-based learning 17.06%, and collaborative learning 16.47% as the most frequently cited. To be effective, these methods must inspire, guide, and motivate students while enhancing their practical skills. Furthermore, they must be dynamic and innovative to capture and maintain student interest (Zhu & Wang, 2025).

However, it is essential to prioritize methods that foster design and research competencies, as they integrate inquiry directly into the learning process (Molodtsova et al., 2025a). A key trend is the convergence of Artificial Intelligence and the Internet of Things (AIoT). This synergy is driving the adoption of methods that enhance the practical application of AI, address gaps in its structured learning, and in turn, contributes to the advancement of pedagogical practices (Chookaew et al., 2024).

The integration of the AIoT in educational instruction supports hands-on problem-solving and advances AI literacy (Cheng et al., 2025). For instance, cameras and microphones, combined with computer vision and natural language processing, enable the analysis of student behavior—including movements, facial expressions, and group dynamics—to help instructors guide and improve academic outcomes. Another pathway for innovation is to leverage big data and AI to transform teaching through the integration of digital resources, steering educational practice toward greater digitalization and personalization (Zhu & Wang, 2025). An example of this can be seen in ChatGPT-assisted methods, which generate significant interest and high levels of satisfaction among students (Ba et al., 2024).

For this transformation to succeed, teacher professional development is crucial to adapting and implementing these methods and improving learning outcomes (Samuels & Singh, 2025).

Among the factors prioritized in teaching processes (RQ-2), AI implementation stands out 27.65%, followed by the learning process 18.82%, assessment 13.53%, and curriculum design 11.76%.

Furthermore, it is added that the process encompasses aspects such as: designing the training program, updating content, reforming teaching methods, managing assessments, and developing students' practical skills (Chornous & Rybalchenko, 2017). However, these processes fundamentally depend on classroom practices and the teacher's professional experience (Postareff et al., 2025). Therefore, teachers must engage in continuous professional development, as they bear primary responsibility for managing both the relevant educational factors and the external influences impacting these processes (Cedeño-Triviño & Hernández-Velásquez, 2022).

Research indicates that strategies such as gamification are a valid resource for improving academic performance through instructional processes (Zaquinaula, 2023). However, it is AI tools that enhance instruction and actively engage students, fostering a more interactive learning environment. Yet, their integration raises ethical concerns, such as data privacy, academic integrity, and potential bias in generated content. This necessitates regulatory measures by HEIs to harness their benefits while mitigating associated risks (Pereira et al., 2024).

Regarding assessment tools (RQ-3), the most common are questionnaires, surveys, Likert scales, and rubrics, which together account for 34.12% of usage. Other prominent tools include essays, exams, assignments, and oral presentations, comprising 31.18%.

However, this traditional approach proves ineffective in the era of GAI, as it fails to assess the newly required competencies. Consequently, approaches that integrate GAI are key to redesigning assessment and measuring 21st-century skills (Weng et al., 2024). In fact, conventional assessment does not reveal the student's thought process. To overcome this limitation, tools such as segmented rubrics and binary checklists allow for the detailed and objective measurement of performance, thereby guiding the learning process (Garay-Rondero et al., 2024).

In this context, AI transforms assessment into a continuous process. Through machine learning techniques, it can analyze student work, provide consistent feedback, and reduce the instructional burden on educators (Tenakwah et al., 2025).

In this same vein, innovative methods are being proposed to transform evaluative processes. Among these, five specific tools stand out: AI-assisted assessment, task redesign, staged or phased assessment, format diversification, and the incorporation of guided AI use. The ultimate goal is no longer limited to preventing plagiarism, but rather to develop students' AI literacy and to design authentic assessments that reflect the competencies required in today's world (Moorhouse et al., 2023). For instance, the Academic Analysis Tool (AAT) enables educators and instructional designers to analyze student behavior and performance

using LMS data (Ross et al., 2025). Blackboard Analytics is a specific example of this type of tool. Furthermore, guided use of AI prevents the issues associated with its unsupervised use. Research shows that unguided AI promotes cognitive offloading without improving reasoning, whereas structured prompts significantly reduce this effect and enhance both critical thinking and reflective engagement (Gerlich, 2025).

Based on the above, the construction of an assessment model is proposed, structured around three key moments in human-AI interaction: student self-assessment using a rubric; AI analysis that generates gap reports with immediate personalized feedback; and a collaborative dialogue between teacher and student to contrast both perspectives.

According to the findings, the competencies with the highest specific weight (RQ-4) are, in order: critical thinking 26.72%, AI literacy 19.31%, and ethics 13.23%. The fact that their combined weighting reaches 59.26% reveals that they constitute the fundamental core of the training program under analysis.

However, academic research in HEIs indicates that, beyond this prioritization, there exists a broader set of essential competencies, such as communication, collaboration, creativity, problem-solving, self-regulation, and indeed ethics (Tuononen et al., 2022).

Furthermore, it is important to emphasize that AI competencies are multidimensional and are necessary for using, understanding, and critically and responsibly evaluating this technology (Heil et al., 2025). In this way, AI contributes to the development of key skills for the future professional, such as critical thinking, creativity, AI literacy, adaptability, and interpersonal competencies (Molodtsova et al., 2025b).

In summary, training in the digital age is structured around three core competencies—critical thinking, AI Literacy, and ethics—complemented by a broader repertoire of essential capabilities for Higher Education: communication, collaboration, creativity, problem-solving, self-regulation, and adaptability. However, it is suggested to pay greater attention to the ethical work with students, to form individuals of integrity and contribute to a more conscientious society.

## **CONCLUSIONS.**

It is concluded that contemporary education is gradually integrating AI with traditional methodologies. Although project-based and collaborative learning remain relevant due to their proven effectiveness, AI is emerging as a transformative element. Its convergence with AIoT is particularly noteworthy, as it enables adaptive learning environments through sensors and the analysis of student behavior, thus revolutionizing teaching practices.

The implementation of AI constitutes the most influential factor in teaching processes, impacting curriculum design, content updating, and particularly assessment. In this area, traditional instruments (questionnaires, rubrics) are proving partially insufficient in the face of generative AI, which is driving the development of more sophisticated tools, such as segmented rubrics, and innovative methodologies that optimize measurement and foster reflective learning.

Finally, the priority competencies in this context—critical thinking, AI literacy, and ethics— form the formative pillars of the digital age. This hierarchy underscores the need to transversally integrate ethical work with students in order to shape well-rounded individuals capable of building a more conscious and responsible society in a world mediated by artificial intelligence.

## **Study Limitations.**

The main limitations of this study stem, firstly, from the scarcity of specialized literature on AI teaching methods, teaching processes, and assessment, given that these areas remain relatively unexplored. Furthermore, it should be noted that, in several categories, a high proportion of the data obtained from the primary studies was classified as "not mentioned".

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## DATOS DE LOS AUTORES.

1. **Ricardo Pérez Zúñiga.** Doctor en Desarrollo de Competencias Educativas. Departamento de Ciencias Computacionales, Centro Universitario de Ciencias Exactas e Ingenierías, Universidad de Guadalajara. Profesor Adjunto. México. Correo electrónico: [ricardo.perez@academicos.udg.mx](mailto:ricardo.perez@academicos.udg.mx)
2. **Mario Martínez García.** Doctor en Investigación e Innovación Educativa. Departamento de Ciencias Computacionales e Ingenierías, Centro Universitario de los Valles, Universidad de Guadalajara. Profesor-Investigador de Tiempo Completo. México. Autor de correspondencia. Correo electrónico: [mario.mgarcia@academicos.udg.mx](mailto:mario.mgarcia@academicos.udg.mx)

3. **Francisco Eduardo Oliva Ibarra.** Doctor en Ciencias Físico-Matemáticas con orientación en Procesamiento Digital de Señales. Departamento de Ciencias Computacionales e Ingenierías, Centro Universitario de los Valles, Universidad de Guadalajara. Profesor-Investigador de Tiempo Completo. México. Correo electrónico: [francisco.oliva@academicos.udg.mx](mailto:francisco.oliva@academicos.udg.mx)
  
4. **David Elicerio Conchas.** Doctor en Gestión de la Educación Superior. Centro Universitario de Ciencias de la Salud de la Universidad de Guadalajara. Profesor-Investigador de Tiempo Completo. México. Correo electrónico: [david.elicerio@academicos.udg.mx](mailto:david.elicerio@academicos.udg.mx)

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