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# Educational AI: Opportunity or Challenge for Teachers?

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## Abstract

This study examines the perceptions, levels of knowledge, and practices of teachers in Spain regarding the use of artificial intelligence (AI) in educational contexts. Based on a structured questionnaire completed by 45 educators—primarily from the university level—a high degree of familiarity with AI tools was identified, particularly chatbots and image generators, as well as a strong willingness to integrate them into classroom practice. Participants recognized the main benefits of AI as increased accessibility to learning, content personalization, and task automation, although the collaborative potential of these technologies was less emphasized. A strong preference for practical training formats, such as in-person or virtual workshops, was also evident, indicating the need for training strategies focused on pedagogical applicability. The study highlights the central role of teachers in the critical, ethical, and contextualized integration of AI, and underscores the importance of institutional support for effective implementation. Finally, future lines of research are proposed to explore regional and cultural differences, as well as the inclusion of Futures Thinking approaches to anticipate emerging challenges stemming from the increasing use of AI technologies in education.

**Keywords:** Artificial Intelligence; Educational Technology; Teacher Training; Pedagogical Innovation

## Introduction

Artificial intelligence (AI) has been increasingly recognized for its impact on education, presenting both vast opportunities and numerous challenges. AI is defined as "computer systems that mimic human processes such as learning, adaptation, synthesis, self-correction, and the use of data for complex processing tasks" [1]. In higher education and other educational contexts, both students and teachers are at the heart of various challenges to learning and teaching, and AI has the potential to engage both learners and teachers in this process.

In recent years, the development of AI has shown remarkable progress. In the realm of higher education, this technology has opened new possibilities for teaching and learning, some of which have significantly contributed to students acquiring new skills [2]. This educational innovation has also fostered the strengthening of students' digital skills [3,4].

But the challenge goes beyond the use of these tools. The implementation of AI in education raises some fundamental questions about the purpose of teaching, equity in access to technology, data privacy, and the role of human judgment in educational decision-making [5]. In this scenario, university professors cannot be mere passive users of digital platforms, but rather active participants, capable of critically evaluating the impact of these technologies on the teaching and learning process, adapting them to their context, and ensuring that they are used to promote the holistic development of students [6].

The role of university faculty in this transformation is fundamental. Teachers are the ones who know their students' needs intimately, who design and adapt learning experiences, and who establish the essential human connection for any meaningful educational process. Therefore, it is crucial that they are at the heart of the process of integrating AI into education. Understanding what artificial intelligence is, how it works, what possibilities it offers, and what limitations it imposes is key to making informed decisions about its use in the classroom. Furthermore, it is essential that teachers have the appropriate training and resources to use it critically, ethically, and in a pedagogically sound manner [5,7].

For these reasons, fostering digital literacy among teachers, promoting continuing education opportunities focused on the pedagogical use of AI, and facilitating access to collaborative experiences in teaching innovation become urgent tasks for education systems. AI is not a passing fad, but a structural component of the present and future of education. Preparing faculty to understand, apply, and question AI is undoubtedly one of the greatest challenges—and also one of the greatest opportunities—of this new educational era [8].

In this context of transformation and challenges, it is essential to understand the starting point: What do faculty currently know about AI? To what extent do they use it in their teaching practices? What are their perceptions, concerns, and training needs? These questions are central to this study, which aims to identify the level of knowledge, use, and preparedness of university faculty regarding the use of AI in the classroom. Through this research, we seek not only to map the current state but also to generate valuable input for designing more relevant, accessible, and contextualized teacher training strategies. Ultimately, understanding how university faculty experience and understand the emergence of AI is a key step in supporting this transition in a critical, reflective, and pedagogically sound manner.

## Objective

The main objective of this study is to identify the level of knowledge, use, and needs of faculty regarding AI in the university educational context, in order to guide training activities and strategies for the effective integration of this technology in the classroom.

The specific objectives of this study are:

- To diagnose the degree of familiarity and understanding that faculty members have regarding the basic concepts of Artificial Intelligence.
- To analyse the current use of AI-based tools in faculty teaching and administrative practices.
- To explore faculty perceptions, expectations, and attitudes toward the implementation of AI in education.

## Methodology

This study aimed to analyse faculty perspectives on artificial intelligence (AI) in the university setting in Spain. To this end, a structured questionnaire consisting of 13 questions was designed to explore key aspects such as the level of familiarity with AI tools, their use in teaching practice, perceptions of their benefits and challenges, and faculty training needs in this area. The survey was distributed via the Microsoft Forms platform. A total of 45 valid responses were received.

The questionnaire included multiple-choice, closed-ended, and open-ended questions, allowing for a combination of quantitative and exploratory qualitative elements. The questions addressed, among other topics, the teachers' level of digital competence, their experience with AI tools (such as chatbots, image generators, presentation platforms, and audio and video), the skills they consider necessary for integrating AI into the classroom, and their willingness to participate in future training opportunities.

## Results

This study aimed to identify and understand faculty perceptions, knowledge levels, and practices regarding the use of artificial intelligence (AI) in Spanish universities. To this end, a structured questionnaire consisting of 13 closed-ended, multiple-choice questions was designed. In total, 39 valid responses were obtained, mostly from men (n = 23), with a predominance in the areas of social sciences (n = 19) and natural, exact, or quantitative sciences (n = 14). Regarding digital skills, most teachers identified as advanced users (n = 16) or experts (n = 11), while only one considered themselves a beginner. The majority of the teachers surveyed (n = 30) reported that their students use artificial intelligence (AI) tools for learning purposes, while a smaller proportion expressed a lack of knowledge about their use (n = 8) or indicated that they do not use them (n = 1). Regarding teaching practice, 28 participants stated that they incorporate AI tools into their teaching processes, compared to 11 who stated that they do not. A high level of familiarity with artificial intelligence (AI) tools was observed among the teachers surveyed. 38% (n = 38) indicated having used chatbots such as ChatGPT or Bing Chat, which positions them as the most frequently used tool. The most well-known tools were image generation (%) and presentation tools (%), such as Canva AI and Microsoft Copilot, respectively. To a lesser extent, the use of video (%) and audio (%) tools was reported.

Most teachers believe that the most useful skills for integrating Artificial Intelligence (AI) in the classroom are AI content creation (n=29) and creative or critical thinking (n=27). These choices suggest that teachers see AI as a valuable tool both for generating educational materials and for fostering reflective thinking and innovation in students. Furthermore, collaborative problem-solving, mentioned by 22 teachers, reflects the importance of cooperation among students when using AI, while communication and debate (n=16) are considered crucial for reflecting on the impact and use of these technologies in education.

According to the teachers, the most frequently mentioned benefit of AI for students was more accessible learning (n=12), followed by personalized learning (n=10) and task automation (n=10). This pattern suggests that the Perceptions of AI in education

remain focused on individual efficiency and personalized learning, rather than its potential to foster collaborative or social dynamics. These results reflect a perception centred on the individual benefits of AI rather than its collaborative potential. Furthermore, the majority of teachers (n=30) believe their students use artificial intelligence (AI) tools for learning, although some (n=8) are unsure. Only one teacher mentioned that their students did not use them. Regarding the use of AI in teaching, 28 teachers stated they use it, while 11 acknowledged they did not.

Interestingly, none of the interviewees considered the use of AI a mandatory requirement, reflecting that the adoption of this technology in education is not being driven by external impositions. These results highlight the importance of an institutional environment that provides support and fosters collaboration among teachers, rather than relying exclusively on student demand or mandatory requirements, for the effective integration of AI into teaching.

In this regard, the teachers interviewed They showed a clear preference for learning about AI tools through in-person or virtual workshops, with 19 people choosing this option. This suggests they value direct interaction and the opportunity to resolve doubts in real time, preferring a practical and guided approach. In second place, 9 people opted for video tutorials, indicating an interest in visual learning, although to a lesser extent than workshops. These results suggest that, in general, teachers prefer interactive and collaborative learning methods, highlighting the importance of offering training options that encourage active participation and close support in learning AI tools.

## Conclusion

The results obtained from this sample of university professors provide an interesting insight into the perception and use of Artificial Intelligence (AI) in education. In general, a significant interest is observed among professors in integrating AI into their teaching practices. It is noteworthy that, for the most part, the adoption of these technologies is not an external imposition, but rather a choice based on the perceived benefits that AI can bring to both students and the teaching process. The majority of the professors interviewed recognize that creating content with AI and developing creative or critical thinking skills are crucial for the effective integration of these tools in the classroom. This approach reflects the professors' desire not only to improve the quality of education through technology, but also to foster deeper cognitive skills in students, such as critical analysis and the ability to solve problems creatively.

Despite the optimism and willingness of university professors to use AI tools, the most recognized benefits are primarily focused on personalized learning and easier access to educational content. More accessible and personalized learning were identified as the most relevant benefits for students, highlighting a focus on improving the educational process from an individual perspective (Shute & Baker, 2017). This pattern shows that, while teachers appreciate AI's capabilities to optimize educational processes at an individual level, there is less awareness of AI's potential to foster collaborative dynamics or improve student motivation and participation. The lack of emphasis on student collaboration could suggest that, although teachers recognize the value of AI for improving personal learning, its capacity to facilitate teamwork or more dynamic classroom discussions, which could significantly enrich learning experiences, has not yet been fully utilized [9].

Another relevant aspect of the research is institutional motivation as a key factor in the adoption of AI in teaching. Support from the university was the main reason why teachers decided to incorporate AI tools into their teaching practices. This indicates that an institutional environment that offers adequate resources, training, and support is fundamental for the effective implementation of these technologies [10].

Regarding teacher training on the use of AI, teachers showed a clear preference for in-person or virtual workshops as the most suitable method for learning to use these tools. This option was chosen by 19 of the interviewees, reflecting a desire for active and collaborative learning, where teachers can interact directly with experts, resolve doubts in real time, and share experiences [11]. The preference for this practical approach suggests that teachers value the opportunity to receive training that not only provides technical knowledge but also allows them to directly experiment with and apply AI tools. The preference for video tutorials and MOOC-type online courses indicates that some teachers also seek more flexible learning approaches, although to a lesser extent. Interestingly, peer support and collaborative learning opportunities were also mentioned as useful options, reinforcing the importance of fostering collaborative networks among teachers in the process of integrating new technologies [12]. Likewise, institutional support is presented as a fundamental pillar for the successful integration of AI, implying that universities and educational institutions must design policies and training programs that not only provide access to technology but also foster a culture of innovation, active learning, and collaboration among teachers [10]. Ultimately, the incorporation of AI into teaching should be viewed as an ongoing process requiring the commitment of all educational stakeholders, from institutions to students themselves, to ensure that technological tools are used effectively and for the benefit of the entire educational community.

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## Conflict of Interest

No conflict of interest.

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