

Should AI be used in education? By Fundacion MAPFRE (slightly modified)

Artificial intelligence (AI) is an increasingly important technology in our daily lives. It has the potential to transform many everyday fields, including education, where it facilitates personalized and adaptive learning (helping educators to assess and monitor students, as well as to design more flexible learning plans) and offers students learning support tools. But the implementation of these tools in education leads to certain challenges and debates, such as concerns about lack of critical thinking.

Among other more obvious uses, artificial intelligence allows users to process a huge amount of data very quickly and extract conclusions, patterns, and results from this data. This makes it easier to analyze students' data, including their academic records and assessment results, and to leverage this information to build personalized recommendations on the subjects they need to reinforce or the activities they find most effective for learning.

In the same way, such analyses make it possible to determine students' pace of learning and behavior, including their learning patterns and preferences, and thus develop proposals for materials and resources that meet their individual needs, all in an effort to personalize the educational experience. Thus, once the materials and proposals have been reviewed by educators to adapt them to their curriculum and teaching, students can advance at their own pace, which can improve information retention and comprehension of concepts.

While the previous point presents positive aspects of AI resources and tools, it also opens the door to the difficulties and criticism associated with their use. There is concern that the use of AI (e.g., chatbots) in education may limit students' ability to develop critical thinking and independent problem-solving skills. If students rely too much on these tools for quick answers to questions and inquiries, as well as for decision-making and problem solving, they may not develop the ability to think critically and creatively. Although these tools may be comparable to searching for information in a classic search engine, such as Google or Bing, the fact that students are presented with a single answer (and not a myriad of places to find it) may limit the need to read, compare, and exercise critical thinking about the information received. Beyond that, we must not forget that chatbots and other tools are fallible, and in many cases they do not contain all the relevant information needed to cover a given topic. Sam Altman himself, CEO of OpenAI, the company behind the popular tool ChatGPT, [acknowledged at the end of 2022](#) that his tool is useful as a source of inspiration, but a bad idea as a source of real and verified data. On the other hand, it is possible to design other tools that harness artificial intelligences to simulate complex and challenging situations that require students to use their creativity and problem-solving skills to find solutions, thus fostering critical thinking and logical reasoning. These tools can also provide instant and personalized feedback to help students assess their comprehension of the subject matter and correct errors in real time, which can boost their ability to learn independently.

There is no single answer to the debate on using artificial intelligence tools in the field of education, but there are great opportunities and challenges that will have a positive or negative solution depending on the use, design, and accessibility of these tools by educators and students. Undoubtedly, what will be inevitable will be their presence in one way or another in the

daily lives of students, given their ease of access and their ubiquity on the Internet. Although some institutions are already working to limit their use in class, or are returning to pencil and paper exams, students will use chatbots and other tools independently in their daily lives — as we saw with search engines and Wikipedia — forcing traditional models in education to change and evolve.