

## EDITORIAL

## Can generative AI widen the digital divide in education in developing countries?

It's a good question! This depends on the context in which they are viewed. However, the answers have different nuances and real-world implications. On January 20, 2025, DeepSeek-R1 and DeepSeek-R1-Zero were officially launched worldwide. Initially, generative AI projects were led by Open AI with ChatGPT, meta with Llama, and Google with Gemini, among others. With DeepSeek's disruption in the artificial intelligence market, a range of opportunities have opened up globally in all spheres of knowledge because it is an open source and can be implemented by anyone who needs to use it. Many companies have exploited this opportunity to improve their production processes.

The educational environment has naturally benefited from the resurgence of artificial intelligence. However, these scenarios generate opportunities and challenges depending on their use. On the one hand, by using it properly, students can become much more productive and at the forefront of innovation. The opposite scenario is associated with ethical risks and malpractice in educational settings that can undermine teaching. In any case, educational settings that adopt generative AI in their learning processes with good practices will be able to experience new realities and gain feedback from the learned experiences. However, these experiences could be scarce or even nonexistent in educational centers where this technology is not implemented; this gap is growing rapidly in rural schools. This situation is repeated in all developing countries. However, there are exceptions, such as in some regions of Mexico and Brazil, where the issue of Internet connectivity and teacher training has been solved. However, for the rest of the countries, this possibility remains distant, which could widen the digital divide among students in rural areas. In terms of time, this could cause a generational gap for all groups of students marginalized by the use of these technologies.

Returning to the initial question, the answer could be affirmative if measures are not taken in time, that is, improving the technological infrastructure of educational centers, including permanent Internet access, and integrating Generative Artificial Intelligence into the curriculum of all schools, regardless of their geographic location. In this sense, access to artificial intelligence can be democratized in all required scenarios.

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