

Review of: "Artificial Intelligence and Digital Technologies in the Future Education"

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Potential competing interests: No potential competing interests to declare.

Artificial intelligence and education

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Artificial intelligence has arrived to Education long ago (1970), but the wide spread attention to it arises some critical question to be addressed concerning its impact in the education process such as: what is the topic worth to teach aside from AI alternative?, How to use the new technological to improve learning? ¿What the role of teachers will be? ¿How to deal with the limitations of AI?, How to adapt the national policies about education?. Thus, It seems that the key foundation of the education process (teaching and learning) must be up dated by the application of AI. UNESCO (2021) Moreover, the Beijing consensus (2019) has set the criteria around the use of AI in educación allowing a shared understanding and policy advice.

The Voskoglou's article (2023) deal quite clearly with these issues within the framework proposed by the UNESCO (2021) focusing on the risk and benefits of introducing AI in the education process, which make it a useful guidelines for researchers as well as managers and policy makers in charge of educational institutions and its policy guidelines, at the same time responsible at facing the consequences of changing of key paradigms from *constructivism* to *connectivism*.

This change makes of AI a key player in what may be called the next *education revolution* based upon the modification of the nature of learning and teaching. In fact traditional models are focused on the assumption that students lack the abilities to learn on their own, which is supposed to be solved by teacher abilities to work with pedagogy based models designed for that purpose. However current generation of youngsters develop from early stages abilities to stay connected every time all time. They "learn" early in their life to be autonomous, making connectivism their way of learning what they think is useful, following their own experience and abilities to learn based upon their wide connectivity tools available, instead of that one of others (the teachers) as the unique self reference tool. In other words, the notion that learning is a scarce resource with relatively inelastic supply, is replaced by AI to a new format of infinite elastic supply, (flat supply).

It follows that teachers must have different competences compared to the traditional ones, therefore coupled with permanent programs aimed to improving their abilities to work within the educational environment dominated by technology change. By the same reasoning the institutions must also have to adapt itself to the new setting making organizational changes in its management purposes, principles as well as its educational models, fostering the assembly of undergraduate (shorter than usual), and graduate programs (more focused on symbolic issues) within a wider and

unique sequence of academic formation to prepare professionals with competences for the management of meaning. Pettigrew (1977). This is a kind of management thought to be *"like a process of symbol construction and value use designed both to create legitimacy for one's own demands and to de-legitimize the demands of others"*. It means to define the reality of others. *"Thus, managers are seen as powerful agents creating shared meanings, ideas, values, and reality through communication and the social construction of meaning"*. Bradshaw and Boonstra page 108, 1998)

The implications of this outcome go beyond the AI itself. It means that education institutions must review and change the framework management of its educational model from *"teacher intensive"*, to one more *"technology resource intensive"*. This does not mean that AI uses in education deals only with benefits. There are important risk and cost to be addressed at the highest level of educational design policies, the classroom setting as well as the teacher-student interaction. One important risk is that students lose the ability to engage in relational behaviors as a source of learning, with the teacher as the mediator of what may be considered the expected outcome of education: Citizens able to live within a community as well as to share its values and being a factor of shared prosperity. So education becomes more than learning skills for a job, it also includes skills for living within a society and its constraints. Therefore, is an open question how come that AI will also be appropriate for that purpose?

The expectations for AI in education go beyond the classroom, so to reach out into the achievement of SDG4 to make sure a more equitable quality and inclusive education as well as to promote steady learning for all. UNESCO (2015). The UNESCO's World Commission on the ethics of Scientific knowledge and Technology (COMEST), considers AI as those machines able to replicate humans' intelligence as well as their abilities of perception, learning, problem solving, language interaction, and creative process. COMEST (2019). However, despite its development, experts believe that there is still a long way to get over the breakthrough point about AI to become the core of the new educational setting. UNESCO (2021)

Moreover the article explores the implication of AI in the 4th industrial revolution setting and its potential to fit with its advanced technology framework, which deal with 3D printing, autonomous vehicles, biotechnology, nanotechnology, quantum computing, robotics, and the Internet of things all of which are underpinned by AI, besides its current role in services sectors, which has implications that require a system-wide response. UNESCO (2021). The substitution of human skills by AI will intensify adding up pressure to the labor market to both blue collar and White collar Jobs, although more so in the later case.