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editorial: taming technology

On Education

The twelfth issue of On Education is devoted to attempts to tame technology use in education. It asks what challenges educational institutions face from instructional technologies, and what answers have been and are being found. It asks to what extent programmers, software developers or entrepreneurs themselves are able to tame the technologies they want to sell to schools. It discusses the role of teachers, activists, policy makers, and administrators in resisting, regulating, or affirmatively embracing educational technologies.

Keywords: digital transformation, educational technology, ethics, governance, media

In today's digital education, the threat of total surveillance, commercialization of learning, and automation of the classroom seems to be looming. There is a danger that new technologies will not only fail to deliver on their promises but will themselves become a threat to education and learning. To date, the question has not been answered as to how educational technologies can be developed not on the basis of technical possibilities and impressive scenarios but on the basis of educational needs. Technologies must be tamed to serve the public good.

With the expansion of mass education, the question arose of how education could be organized as efficiently and effectively as possible. Instructional methods had to be scalable in order to be attractive for the organization of public education. History is replete with examples of educational entrepreneurs who promoted their method as the best and most efficient way for teaching and learning to get the attention of governments and school boards (Osterwalder, 2002; Caruso & Roldán Vera, 2005; Caruso, 2004; Horlacher, 2006).

Many of the major technical innovations, photo, film, radio, and so on, were thus immediately exploited for the development of new teaching and learning aids. In the context of the general efficiency craze in the early 20th century (Callahan, 1962), first, rather simple mechanical teaching machines were developed (Petrina, 2004). The performance of the new instructional media often fell short of the promises as well as expectations associated with them, but this did not diminish the great ambition behind new technologies (Cuban, 1986; 2001). Rather, the history of education systems in the entire 20th and early 21st century can be described as a succession of new technologies for the classroom that even spawned its own profession: the educational technologists (Hof, 2018a; 2018b).

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the role of teachers, activists, policy makers, and administrators in resisting, regulating, or affirmatively embracing educational technologies.

Any attempt to tackle these questions adequately will have to take into account that different contexts play a strong role in the handling of new educational technologies. First, there is the state of technological development itself. It is true that a good part of technological enthusiasm is pure science fiction, in the utopian as well as in the dystopian sense. Measured against the actual state of possibilities, it is always astonishing to see the potential that individual technologies, not even fully developed yet, are seen to have for education. This is as true for computer assisted instruction in the second half of the 20th century as it is for artificial intelligence today. A distinction must therefore be made between projects, development, and implementation. Second, the organizational state of public education has to be considered. The meaning of new educational technologies differs between the introduction of mass education, the educational expansion after the end of the Second World War or public education in today's pluralistic and interconnected societies.

Last but not least, the debate between pedagogical experts surrounding the introduction of new educational technologies should not be neglected. With new technologies in the classroom, from programmed instruction to learning analytics, it is not only that teaching and learning were to be organized more efficiently and effectively. Rather, there were always educational experts who believed they could finally realize their educational visions with the new devices. Thus, film and radio at the beginning of the 20th century were seen as windows to the world for the education of the global citizen (Good, 2020). The language laboratories of the 1960s and 70s were not only intended to improve foreign language learning. Rather, they were also meant to guarantee both individualized learning and absolute control (Bosche & Geiss, 2010). And computer assisted instruction has served different educational goals from the beginning, not only efficiency, but also creativity, participation, and collaboration (Rankin, 2018).

The issue addresses both the historical and contemporary dimensions of whether, and if yes, how educational technologies could be and should be tamed. It focuses on long forgotten experiments and devices as well as current discussions on learning analytics, automated grading, intelligent tutoring systems, and digital surveillance technologies in schools.

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