

Robotics in/and education: the ongoing re-making of the publicness of schooling

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The entering of automation, AI and robotics into the educational field invites educational researchers and educators to ask questions that concern the relations between education policies and practices, the changing forms of the educational episteme and their nexus with marketisation and market-making. The embedding of automation, AI and robotics, understood as a set of socio-technical processes, contributes to the structuration of schooling and schools as spaces whose publicness is today reconfigured through the participation of an increasingly heterogeneous multiplicity of state and non-state (business, philanthropies, NGOs) actors, the assemblage of different governing techniques and the interweaving among different educational and non educational rationalities.

On the one hand, multinational companies producing robots team up with national vendors who act as intermediaries with schools, more often than not small IT companies who seek allies in schools to fuel the need for and experiment with technological solutions. On the other hand, education policies design interventions, incentives and funding schemes whose intended or unintended outcome is the making and remaking of new markets for education technology and the enlargement of its use across educational settings. The network of actors (human, regulatory and financial) who act and push to change the educational scenarios is expanding.

Robots and the related platforms represent a case of particular interest, in this respect, and in this paper we will specifically focus on them. Their increasing popularity in schools and their wide spreading in Italian schooling is driven, on the one hand, by new education policy schemes (e.g. the PNRR) which urge schools for updating their technological infrastructure and provide them with significant resources to do that, transforming schools into buyers in search for a product. On the other hand, it is made possible through educational discourses that focus on computational thinking, coding and the pedagogical dream of digital technologies. All those processes pave the way for different reconfigurations of the publicness of education, in which interests, visions and networks of state and non-state actors are assembled and re-assembled with different degrees of symmetry.

In this scenario, our contribution discusses two case studies, in which the school becomes the social space interests, resources, strategies and networks of actors that

revolve around the imperative and desire for innovation in educational practice through a robotic artifact meet and clash.

The first case study focus on different uses in a set of Italian schools of the social robot Nao which is becoming a standard in the field thanks to the combined pressure of EdTech companies and public funding. The case study intends to show what happens when a robot, addressed as a technological fix (the technological artifact is taken for granted and black-boxed, in an innovation dynamic driven by a form of technological determinism), enters the classrooms and mobilises teachers and students. The second case described an experience of co-design of an educational robotics project in which schools, companies and university researchers mutually enrol each other, enacting an innovation process that produces a mutual shaping between technological and educational rationalities.

The two movements, that of educational robotics conveyed by global technology markets (Nao) and that of educational robotics as a situated process of co-design, highlight new connections in heterogeneous arenas that change the traits of publicness in the field of education and invite educational researchers, practitioners, innovators and technology designers to turn their attention towards the rationalities at stake and the dynamics of their (a)symmetry in the processes of educational innovation through education technology, automation, AI and robotic artifacts.