OECD Work on Artificial Intelligence and the Implications for Education

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This document summarizes directions and emerging findings from the range of OECD projects relevant to the High Performing Systems for Tomorrow (HPST) work on AI and education. Its starting point is broader OECD thinking about education futures.

The OECD’s most recent work in this area is Trends Shaping Education 2019. This analysis points to five societal developments (all accelerated by digital technologies) which together require countries to rethink both what people should learn and how education systems should evolve:

- The connected and mobile global economy is increasing demand for more highly skilled workers to improve innovation and competitiveness
- Growing contention over the role, authority and effectiveness of government is prompting calls for greater civic and social participation and a renewal of democratic citizenship
- Complex security challenges are strengthening the need to develop new literacies (health, digital, financial and environmental); foster trust, tolerance and resilience; and deepen understanding of politics, history and civics
- Increased life expectancy is prompting people to go on learning, to stay employed, healthy, happy and secure
- Modern cultures, in which people are both individualistic and networked, require new skills such as collaboration, creative thinking and entrepreneurship

The Education 2030 project has also examined societal change in order to suggest what people should learn. It sees the major forces as resource depletion, widening inequities, social fragmentation and digital isolation. It argues that education should be concerned as much with encouraging action (through agency) as supplying knowledge. And it highlights the need to acquire not only traditional literacies but also three new competencies: the abilities to create new value; resolve tensions and dilemmas; and take responsibility. This perspective is described in “An OECD 2030 Learning Framework,” which is a chapter in a book that will be published later this year.

Neither Trends Shaping Education 2019 nor Education 2030 puts artificial intelligence centre-stage. The former positions AI as an important dimension of the global economy, but does not suggest that AI in itself will reframe education purposes, processes and systems. The latter observes that humans may be better equipped than machines to adapt and exercise agency in VUCA conditions.
The OECD has established a project called *21st Century Children* that looks at the nature of modern childhood and the ways in which schools and communities can work together to protect and guide children. Its recent report *New Technologies and 21st Century Children: Recent Trends and Outcomes*, based on an extensive literature review, anatomizes the impact of the internet on young people’s lives. It notes increasing access to the internet and smartphones; increasing hours online; increasing numbers of children using the internet at a very young age; increasing use of the internet for multiple purposes, including social networking; increasing numbers of children who feel bad when they don’t have access to the internet; and the emergence of extreme internet users. With the opportunities of the internet come risks. The report reviews the prevalence of poor quality information and aggressive, sexual and commercial content; and considers the threats to personal development and physical safety associated with social networking. It notes that in a recent survey 12 percent of 11- to 15-year-olds reported being cyberbullied at least twice a month. There is an important role for families and schools in building children’s digital resilience. The report suggests that parents may be enabling mediators, setting boundaries for their children’s use of the internet while leaving open appropriate opportunities. It outlines the steps already being taken by responsible schools to develop online safety policies and procedures, train staff and add an e-safety component to the curriculum.

The OECD is establishing two new projects which directly address the implications of AI for education. The early outputs from both are likely to be influential on the progress of HPST.

The first project is work on AI and robotics capabilities. It bears on HPST’s interest in the impact of AI on jobs. The work will be led by Stuart Elliot, probably as a partnership between the OECD, the National Academies of Sciences, Engineering and Medicine and the Inter Academies Partnership. Following Elliot’s initial study, which compared the performance of PIAAC skills by humans and computers, the project proposes to launch a set of studies to develop a feasible way to assess AI and robot capabilities across a range of human skill areas. It will assess the capabilities of current AI and robotics as described in the latest research literature. It will focus specifically on those capabilities where it is possible to compare AI and robotics with humans. And it will assess the capabilities of AI and robots in a way that can compare those capabilities to the distribution of comparable capabilities in humans. According to Elliot: “The key question will not be whether there are things that humans still do better than computers, but whether most people — or only some people — can do those things.” The article, “AI, Robots and Work – Is This Time Different?,” summarises Elliot’s proposed approach.

The second project is called *Smart Data and Digital Technologies in Education*. It bears on HPST’s interest in the impact of AI on how people should learn and on the future development of education systems. Led by Stephan Vincent-Lancrin, it will focus on:

- The smart use of digital devices or software for enhancing learning inside and outside the classroom
- The smart uses of data produced or collected in formal education settings for the personalisation of learning and for improving decision-making and policies in education (learning analytics based on instructional and administrative data)
• The new uses of personal data gathered through internet navigation, social networks and networked devices and sensors for personalising and improving people’s educational experience (learning analytics based on big data)

Participants in the HPST project will receive regular updates on all the projects described above and on others as they are established. Where it is possible and useful, we will create opportunities for dialogue with project leaders and experts.