EDITORIAL

Learning and competences for the 21st century

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This special issue of *Prospects*, titled "Learning and Competences for the 21st Century", could hardly be more timely. Rapid advances in communications and information technology, growing urbanisation, concerns for environmental sustainability, shifts in geopolitics, demographic patterns and labour markets, increasing unemployment, especially of young people, and the growing divide between rich and poor (UNESCO 2014) place unprecedented pressure on education systems to change rapidly and profoundly.

This is also a key moment for the international community, which must now place education at the heart of a broad post-2015 global development agenda. The United Nations (2013) called for a universal framework with one set of goals relevant to all nations and a core focus on sustainable development and eradicating poverty. But that effort will only succeed if it rests on coherent and achievable goals and strategies for education post-2015. High-quality education and learning, as well as life skills and vocational education and training, will be crucial to achieving the post-2015 goals, based on the three dimensions of sustainable development: providing economic transformation and opportunity to lift people out of poverty; advancing social justice; and protecting the environment (UNESCO 2013).

Education systems are expected to convey values that will help develop more just and inclusive societies; they must also provide a variety of learning experiences to train a competent and active citizenship, and ensure quality and equity in learning outcomes. In addition, students need new and complex competences, not only to lead economically productive lives but also to live together in a rapidly changing world and to transform themselves into "self-directed learners who can address their own wants and concerns and can advocate for their goals and aspirations" (UNESCO and UNICEF 2013, p. 24). There is an urgent need to return to fundamental questions about the goals and purposes of education and to a more holistic, integrated and humanistic vision of learning. Thus,

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questions related to the relevance of learning, along with efforts to re-conceptualise curriculum development as a continuous social, cultural and political process, are now more pertinent than ever.

The term "21st-century education" is already widely used to reflect this new paradigm, but no single framework provides a coherent umbrella for the needed knowledge, skills, attitudes, and values (the *competences*); nor do we have one coherent analysis of those elements (Ananiadou and Claro 2009). Some argue that the 21st-century skills are not new; they just represent a shift in emphasis (Silva 2009). They include critical and creative thinking, as well as digital and technological skills, communication skills, and the ability to acquire and apply knowledge to problems and real-life contexts.

This special issue of *Prospects* focuses, directly and explicitly, on the complexity of the current educational landscape and provides an overview of the key concepts and competences that the authors consider are needed for 21st-century education.

Conrad Hughes, director of the International School of Geneva, and Clementina Acedo, director of Webster University in Geneva and former director of the International Bureau of Education, are the guest editors of this issue. They bring together leading scholars in the field to discuss a few key areas, which they term "guiding principles", of learning and competences for the 21st century. The authors place a special emphasis on curriculum and assessment, as well as on critical thinking, information literacy, creativity and mindfulness.

The issue starts with a powerful Viewpoint, authored by Paul Black, professor emeritus of education at King's College London, whose work on formative assessment, with Dylan Wiliam and the King's Assessment Group, has had widespread impact. Black draws on decades of experience, primarily in the United Kingdom and the United States: in 1987, he chaired the UK government's task group on assessment and testing, which devised the assessment structure for the national curriculum. He lays out some challenges and shortcomings of the world of assessment, and argues, for example, that teachers must share responsibility for the high-stakes assessment of their own students.

In their co-authored article, Clementina Acedo and Conrad Hughes argue that curriculum design in the 21st century must incorporate clear understandings of learning: definitions, sensitivity to cognitive development, social contexts of learning and metacognition. Drawing on cognitive psychology and established theories of teaching and learning, the authors suggest a few learning principles to investigate and reflect upon. They include fundamental areas of knowledge (STEM learning, information literacy, concepts-focused learning), competences (creativity and critical thinking) and attitudes (academic honesty, health and mindfulness, service learning).

Juan Carlos Tedesco, Renato Opertti and Massimo Amadio highlight some of the key issues in current discussions around curriculum, such as values education, inclusive education, competency-based approaches, soft and hard skills, and scientific and digital culture. They begin their article with the assumption that quality education for all is necessary to achieve social justice, and they look at curriculum as resulting from a process that reflects a societal agreement about the what, why, and how of education needed for the society in the future. They then argue that educators should rethink the role of the school curriculum, the approach to teaching and learning, and their assessment systems within the framework of a holistic vision of education and thus ensure a wider policy dialogue around curriculum design and development.

Steve Higgins argues that, although critical thinking is indeed necessary in a curriculum for a 21st-century education, it is not sufficient, even in combination with other skills.

Given what we now understand about the role of knowledge and about differing cultural perspectives and values, education should also fit local contexts in a global world and meet the specific needs of students in diverse cultures. It should also prepare students with the digital skills they will need to meet the particular technical demands of the 21st century.

Sugata Mitra, winner of the 2013 TED prize, discusses the opportunities that new technologies offer to the world of teaching. He describes the effects on pedagogy of assistive technologies, from paper and printing to protractors and logarithm tables, to computers and the Internet. He develops the concept of a self-organised learning environment (SOLE) and describes experiments in which primary students use SOLEs. He then describes the effects they can have on primary education in remote areas, and discusses the implications of the physics of complex systems and their possible connection with self-organised learning amongst children. He concludes by proposing a change in the examination system that would incorporate the Internet and concepts of self-organisation into schooling.

Lynn and Doug Newton discuss some recent studies on creativity, reflecting the growing global interest in it and comparing that interest with established Western perspectives. They argue for a more comprehensive, international perspective, one that might support a press for fostering creative thinking in schools and inform practices in an increasingly interconnected world. They also argue that teacher training must introduce teachers to a wider diversity of views and to the expectations of local people.

Rama Mani, Scilla Elworthy, Meenakshi Gopinath, Jean Houston and Melissa Schwartz describe what they call Whole Mind education: transformed educational institutions, curricula, and methodologies that focus on integration, creativity and peace. Drawing on the deep expertise of women educators around the world, they argue that a genuinely holistic education that arms learners with the dispositions to make the world a better place must educate the heart and soul as well as the mind. Among other values, such education must be dynamic, deeply inclusive, life-long, grounded in universal values, and focused on interpersonal skills.

Alexander Schieffer and Ronnie Lessem envision the "Integral University" as a force for social innovation and societal renewal. They argue that the university of the future must aim to develop the world's social capital—not only its intellectual capital—so that research and academia become part of a wider project to regenerate society. To develop their thesis, they draw on examples from Zimbabwe, Nigeria, Egypt and Slovenia, innovative cases that demonstrate the potential of this new kind of university.

Daniel Wagner and Nathan Castillo analyze the scientific tensions in understanding learning among poor and marginalised populations, those that C.K. Prahalad (2006) called the bottom of the pyramid (BOP). While international agencies, such as UNESCO and OECD, often invoke these populations as the "target" of their investments and assessments, serious debates continue around the empirical science involved in both research and policy. The authors plead for a better understanding of contexts at the bottom of the pyramid; that understanding can lead to policies that will improve both the quality of education and the actual learning of those who are hardest to reach. They argue that the UN's post-2015 development goals must take into account the critical need to focus on learning among the poor in order to adequately address social and economic inequalities.

This special issue takes an important step in illustrating both the changes that are happening (or are about to happen) in the 21st century, and the key competences that people around the world will need to adapt to those changes.

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