Educating Learners for Their Future, Not Our Past

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A Changing World

How should countries equip people to understand, engage with and shape a changing world? The backdrop to the 21st century remains our endangered environment. Rising population, resource depletion and climate change place a responsibility on us all to develop the planet sustainably, with an eye to the needs of future generations. At the same time, new challenges have arisen, shaped by the interaction of technology and globalization.

The first challenge is economic. Industries, organizations and professions have been disaggregated and automated. For niche suppliers to hollowed-out corporates, or for dynamic Internet businesses, the rewards are high. But for others, the gig economy means the scourge of vulnerable work: zero hours contracts without benefits, insurance or pension. Entrepreneurial economies have unleashed new growth, but at the price of widening inequality.

The second new challenge is social. Across the world, people are on the move. Many work internationally by choice. Others are forced to travel by war and poverty. How diverse can communities become before trust corrodes, social capital weakens and civil society is undermined?

This is the age of accelerations, a speeding-up of human experience through the compound impact of disruptive forces on every aspect of our lives. It is also a time of political contestation. The priority of the wider international community is still to reconcile the needs and interests of individuals, communities and nations within an equitable framework based on open borders, free markets and a sustainable future.

In the face of challenges as great as any that have gone before, human beings need not be passive or inert. We have agency, the ability to anticipate what could happen next and to take action. Being a purposeful, responsible and capable agent means casting yourself into a future which is necessarily uncertain and so involves taking risks.

Transformative Competencies

In these times, we can no longer teach people for a lifetime. In these times, education needs to provide people with a reliable compass and the navigation tools to find their own way through an increasingly complex and volatile world. As future jobs will pair computer intelligence with human knowledge, skills, character qualities and values, it will be our capacity for innovation, our awareness, our ethical judgment and our sense of responsibility that will equip us to harness machines to shape the world for the better. This is the main conclusion OECD countries working on a new framework for curriculum design, referred to as "Education 2030", have drawn. More than 30 countries are participating in this multi-year project, and considering what young people would need to learn for a 2030 world.

Not surprisingly, then, schools increasingly recognize the need for fostering ethics, character and citizenship and aim to develop a range of social and emotional skills, such as empathy, compassion, mindfulness, purposefulness, responsibility, collaboration and self-regulation.

In their Education 2030 framework for curriculum design, OECD countries have put **creating new value, dealing with tensions and dilemmas** and **developing responsibility** at the center. Creating new value, as a transformative competency, connotes processes of creating, making, bringing into being and formulating; and outcomes

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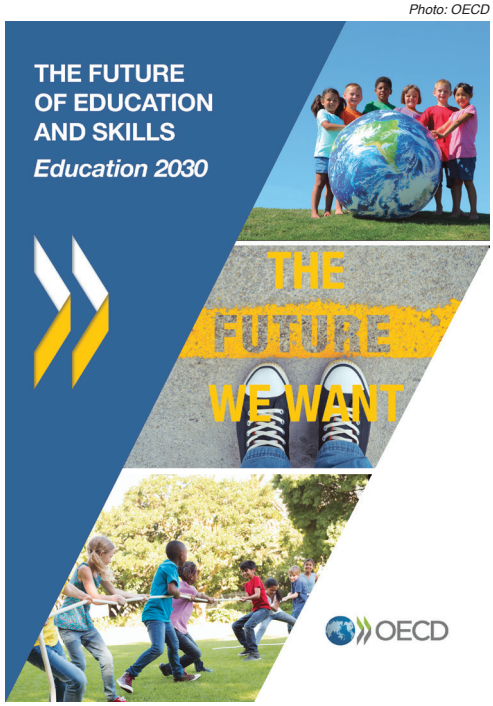

Cover of "Education 2030"

that are innovative, fresh and original, contributing something of intrinsic positive worth. It suggests entrepreneurialism in the broader sense of being ready to venture, to try, without anxiety about failure. The constructs that underpin the competency are imagination, inquisitiveness, persistence, collaboration and self-discipline. Young people's agency to shape the future will partly hinge on their capacity to create new value.

In a structurally imbalanced world, the imperative of reconciling diverse perspectives and interests, in local settings with sometimes global implications, will require young people to become adept in handling tensions, dilemmas and trade-offs. Striking a balance, in specific circumstances, between competing demands — of equity and freedom, autonomy and community, innovation and continuity, and efficiency and democratic process — will rarely lead to an either/or choice or even a single solution. Individuals will need to think in a more integrated way that avoids premature conclusions and attends to interconnections. The constructs that underpin the competency include empathy, adaptability and trust.

The third transformative competency is a prerequisite of the other two. Dealing with novelty, change, diversity and ambiguity assumes that individuals can "think for themselves" with a robust moral compass. Equally, creativity and problem-solving require the capacity to consider the future consequences of one's actions, to evaluate risk and reward, and to accept accountability for the products of one's work. This suggests a sense of responsibility, and moral and intellectual maturity, with which a person can reflect upon and evaluate their actions in the light of their experiences and personal and societal goals; what they have been taught and told; and what is right or wrong. **The perception and assessment of what is right or wrong, good and bad in a specific situation, is about ethics. It implies asking questions related to norms, values, meanings, and limits. Central to this competency is the concept of self-regulation, in the spheres of personal, interpersonal and social responsibility, drawing on constructs of self-control, self-efficacy, responsibility, problem-solving and adaptability.**

Knowledge

The transformative competencies discussed above build on knowledge, skills and values. It was long ago conceded that we can know only a small proportion of what there is to know. And whatever it is that we want to know, Google can now tell us in an instant. Nevertheless, the OECD learning framework claims a central role for knowledge itself. What knowledge remains essential for fulfilled and productive human lives? Several types of knowledge seem to be relevant:

Interdisciplinary knowledge, the capacity to see real-life problems, phenomena and issues through multiple disciplinary lenses (different disciplines), has become increasingly important. It is rooted in deep **disciplinary knowledge**. Teachers increasingly underline the importance of **epistemic knowledge**, the capacity to understand the distinctive nature of the thinking processes and beliefs specific to each discipline. Epistemic knowledge can be stimulated by questions such as "What am I learning in this subject and why?", "What can I use the knowledge for in real life?" and "How do professionals from this disciplinary field think?" **Procedural knowledge** develops through understanding how something is done or made, the series of steps or actions taken to accomplish a goal. Some procedural knowledge is domain-specific, some transferable across domains. It typically develops through practical problem-solving.

Skills

Cognitive skills are a set of thinking strategies that enable the use of language, numbers, reasoning and acquired knowledge. They comprise verbal and non-verbal skills, higher-order thinking skills, effective use of executive functions (especially working memory) and problem-solving. Meta-cognitive skills, in particular, include the ability to recognize one's knowledge, skills, attitudes and values.

Social and emotional skills are a set of individual capacities that can be manifested in consistent patterns of thought, feelings and behaviors. They can help balance and ground personalities and strengthen character.

Physical and practical skills are a set of abilities to use physical tools, operations and functions. They include manual skills, life skills, professional skills and the ability to mobilize capacities.

Attitudes & Values

Attitudes can be formed and changed and are generally considered much less enduring and stable than other personality attributes such as traits or temperament. Attitudes are considered separate from and more malleable than personality tendencies and values. In addition to an evaluative aspect (either positive or negative) an attitude may entail a tendency to behave in a particular way towards a given object. Values are guiding principles by which particular beliefs, behaviors and actions are judged to be good or desirable. Values develop through a process of exploration and experimentation, where young people make sense of their experiences and refine what they believe. Values transcend specific actions and contexts, have a normative prescriptive quality about what ought to be done or thought in different situations, and may be used to guide individuals' attitudes, judgments and actions.

Having good academic and social skills doesn't seem to prevent people from using those skills to destroy, rather than advance, their societies. It comes down to the heart of education: teaching the values that can give students a reliable compass and the tools to navigate with confidence through our world. Of course, that is difficult territory. To make one's way through it, one has to strike a balance between strengthening common values in societies, such as respect and tolerance, that cannot be compromised, and

appreciating the diversity of our societies and the plurality of values that diversity engenders. Leaning too far in either direction is risky: enforcing an artificial uniformity of values is detrimental to people's capacity to acknowledge different perspectives; and overemphasizing diversity can lead to cultural relativism that questions the legitimacy of any core values.

Learning as a Navigational Compass

The ability to develop competencies is itself something to be learned, using a sequenced process of reflection, anticipation and action. Reflective practice is the ability to take a critical stance when deciding, choosing and acting, by stepping back from what is known or assumed and looking at a situation from other, different perspectives. Anticipation mobilizes cognitive skills, such as analytical or critical thinking, to foresee what may be needed in the future or how actions taken today might have consequences for the future. Both reflective practice and anticipation contribute to the willingness to take responsible actions, in the belief that it is within the power of all of us to shape and change the course of events. This is a model that suggests how agency is built. It proposes that through anticipation, action and reflection we assemble the competencies that enable us to engage with the world incisively, sensitively and responsibly.

The OECD learning framework therefore encapsulates a complex concept: the mobilization of knowledge, skills, attitudes and values, through a process of reflective practice, anticipation and action, in order to build inter-related competencies that equip us to engage.

Curriculum Design Principles

For many years teachers and students have struggled with overloaded curricula, to which new dimensions are added but none taken away. Time lags pose additional challenges: the lag between the emergence of new curriculum needs and recognizing them; the lag between recognizing them and deciding to address them; and the lag between implementing them and seeing the impact on learners. Curriculum design principles can address both overload and time lags. They can also ensure that curriculum changes benefit all learners, not just a few; and that changes are not made piecemeal but as part of a broader plan for an integrated learning experience. At least the following design-principles are relevant:

- **Learner centrality.** Curriculum should be constructed around learners, to ensure they are fully motivated and to take account of what they have already learned.
- **Authenticity.** Learners should be able to link what they are learning to the real world and feel that it is purposeful.
- **Focus.** Only a small number of topics should be introduced in each grade. Topics may overlap in order to reinforce key concepts.
- **Rigor.** Students should find learning enjoyable but also challenging. Topics should be sequenced to support progression through grades and age levels.
- **Coherence.** Sequencing should follow the logic of individual disciplines and respect the relationships between disciplines and between domains.
- **Inter-connectedness.** Learners should be given opportunities to discover how a topic or concept can link to other topics or concepts within and across disciplines.
- **Flexibility.** Curriculum should not be static and predetermined but adaptable and dynamic, enabling schools and teachers to take account both of changes in the external environment and the needs of individual learners.
- **Alignment.** Curriculum should be well-aligned with teaching and assessment practices.
- **Transferability.** Higher priority should be placed on knowledge, skills, attitudes and values that can be learned in one context and transferred to others.
- **Inter-disciplinary.** Topics should combine concepts and content from multiple disciplines.
- **Choice.** Students should be offered a diverse range of topic and project options, with support to make informed personal choices.
- **Engagement.** Teachers and other stakeholders should be involved early in the development of curriculum, to harness their ideas and build their support for implementation.

Conclusions

The challenges facing the 2030 generation require them to be innovators in every dimension of their lives, whilst building on the experience and values of their forebears. Future-ready learners should be equipped with an interdisciplinary perspective anchored in disciplinary knowledge structures; epistemic knowledge, such as what it is to think like a mathematician or a historian; and procedural knowledge, such as knowledge of systems thinking and design thinking. They should have cognitive skills such as critical thinking and creative thinking; social and emotional skills such as empathy and resilience; and practical and physical skills. When they apply their knowledge and skills, their actions and behaviors should be underpinned by attitudes and values such as open-mindedness and respect.

For the next steps, it is expected that international communities and organizations engage actively in the dialogue on the OECD Education 2030 framework. JS

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