

DON'T LOOK UP: what skills for ecological transformation?

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Christel Jacque leads her Wildlife Club of 8-year-old children on an outing to learn about mangroves. Such clubs aim to sensitize pupils to be friendly to the environment and how to become a responsible citizen in Seychelles.
Source: Ryan Brown (UN Women).

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People and places are more connected than ever through modern forces such as globalisation and digitisation, but today’s world is also far more uncertain, complex and prone to shocks – including environmental shocks. Transforming and innovating our economies to be more sustainable, climate-friendly and resilient requires a ‘future-thinking’ education system. A ‘future-thinking’ education system is one that can help equip and prepare humans with the skills, values and attitudes that are required for ecological transformation. Done in the right way, a new approach to education can not only help reset our connection to the planet, but develop values that bridge our social differences too. This article shares lessons and reflections from the OECD on the key skills, values and attitudes that are needed to drive innovation for the ecological transformation and support human flourishing.

Whether you are a film buff or live under a rock, you have probably heard of the film *Don’t Look Up*. Equally acclaimed and panned by the audience and critics, this satirical comedy tells the story of two scientists who discover a super-sized comet on a direct collision course with Earth, and face great difficulties in making themselves heard by politicians and the media.

FUTURE-PROOFING EDUCATION BY LOOKING FORWARD

That comet is coming. Globalisation and digitalisation have connected people, cities, countries and continents in ways that vastly increase our individual and collective potential. But the same forces have also made the world more volatile, more complex, more uncertain and more ambiguous. The world has seen a growing disconnect between the infinite growth imperative and the finite resources of our planet; between the financial economy and the real economy; between the wealthy and the poor; between the concept of our gross domestic product and the well-being of people; between technology and social needs; and between governance and the perceived voicelessness of people.

But while digital technologies and globalisation have disruptive implications for our economic and social structure, those implications are not predetermined. It is the nature of our collective responses to these disruptions that determines their outcomes – the continuous interplay between the technological frontier and the cultural, social, institutional and economic agents that we mobilise in response.

The OECD has long advocated future-thinking in policy making to prepare for shocks and surprises – be it climate change, digitalisation or pandemics. This is important because the future will always surprise us.

So how are education systems responding to current pressures of digitalisation and globalisation? And what lessons can we draw from this experience to ready our societies for the climate transition?

TODAY'S TRENDS AND NEW SKILLS NEEDS

For a start, intangibles are the driver of today's economy, which makes education especially central. An example of their power is the growth of tech companies compared to the declining revenue of the traditional companies that dominated the *Fortune 500* decades ago. The great thing is that unlike tangible assets, knowledge can be used repeatedly and in multiple places at the same time, and that's what explains the rapid growth of companies focused on intangibles.

In education, we should ask ourselves what knowledge and skills are needed for participating in an increasingly intangible economy in which the kinds of things that are easy to teach and test have also become easy to digitise and automate. What knowledge, skills, attitudes and values do we need for generating new ideas and products?

Or for organising and governing new ways of working and producing? And what is the role of new technologies in facilitating learning?

Over time, we have also seen a shift in the way we use our time towards leisure, family and political life, we work less, even if it sometimes doesn't quite look so. Can education help individuals, young and old, to develop the knowledge and skills needed to engage meaningfully across all aspects of life?

Part-time contracts and other forms of temporary work have also been rising over the last two decades, particularly among young workers. In 2020, temporary employment accounted for 24% of dependent employment for youths, compared to 11% for the general population. This corresponds to a 7% increase compared to 1980. What are the consequences for on-the-job learning and training if increasing numbers of workers have no permanent employer to sponsor such education? What does this shift



mean for education systems, formal or non-formal, and for education professionals? What is the potential of new training opportunities emerging from the gig economy, such as peer networks and crowd-curated resources, to fill this gap?

Beyond these immediate issues, the digital world will bring its own challenges and opportunities. While in the past our location and physical bodies anchored our identity and relationships, we can now create virtual profiles to suit any purpose and share these with anyone, anywhere. Social media and interest-based platforms have expanded exponentially, giving people tools with which to grow their networks and find support, express themselves, experiment with desired identities, and selectively self-present. However, these opportunities also raise questions about safety, transparency and the boundaries

between exploration and manipulation. Teachers must learn to better leverage these new opportunities, while also helping individuals learn to ethically and responsibly participate in the digital environment.

Knowledge also means power. Whereas only an elite few produced traditional encyclopaedias or the mass media of the 20th century, today's social media and internet sites like Wikipedia are fed by the masses who generate the content. The number of all wiki pages grew from about 10,000 to over 250 million in just 20 years.

But are people ready for this? OECD's Programme for International Student Assessment (PISA) shows that Korea, Singapore and parts of China are the only jurisdictions where more than half of the 15-year-olds are fit for the digital world, like figuring out fake news. In most countries with comparable data, the majority of students have still limited digital navigation skills or not even the basics.

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So how can we better support all individuals to access and use knowledge effectively? What types of education are needed to enable students, teachers and education leaders to do that effectively? And what (digital) skills and attitudes are needed to effectively evaluate the quality and trustworthiness of information? How can we support teachers to validate the knowledge they use in their practice? Our social circles also influence our access to knowledge. Should educational institutions work more actively to strengthen (digital) social ties? If so, how?

One thing is clear: the kind of things that are easy to teach and test have become easy to digitise and automate. We know how to educate second-class robots, people who are good at repeating what we told them. In this age of accelerations and artificial intelligence, we need to think harder about what makes us human.

EDUCATION MUST PREPARE FOR ENVIRONMENTAL SHOCKS

Likewise, education has a pivotal role to play in our fight against climate change. Climate impacts will pose massive disruption to societies, economies, and education systems. Meeting the global goal of net zero emissions by 2050 will require bold action. As demand for renewable energy solutions has risen and their technology has improved, for example, the costs of renewables have fallen. However, even as the availability and affordability of renewables have increased, we continue to burn fossil fuels like coal, oil and natural gas at an unsustainable rate and our carbon footprint keeps growing.

Education is key to provide all citizens not only with an understanding of the science behind the climate crisis but also its socio-demographic, political and moral implications – what it means to be human in a changing world. Moreover, education can make a fundamental contribution by offering learners the space to take direct action in their communities while fostering pro-environmental attitudes and behaviours.

Most obviously, education provides people with the scientific knowledge and skills that underpin a green economy. And knowledge about the science of the environment is the single best predictor for the environmental attitudes and behaviour of young people. Education also shapes individual behaviour that influences political commitments, whether that is financing parties or social activism. It can shape behaviour that impacts on local communities, think of volunteering or community services, or behaviour that influences business practices, think about changes in consumption and lifestyle patterns, personal investment choices or employment choices. And of course, our own behaviour will always influence the behaviour of others.

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But education influences knowledge and behaviour in complicated ways. PISA shows that the quality of education can put countries into very different positions. For example, Singaporean, Korean and Canadian students excelled when they had to explain how carbon-dioxide emissions affect global climate change. Yet just a minority of Singaporean and Korean 15-year-olds said they would choose certain products for ethical or environmental reasons even if they are a bit more expensive, so knowledge doesn't automatically translate into behaviour.

PISA demonstrates that more students act for the environment when they are in schools where other students are also more involved in environmental actions. In other words, school culture is a far more powerful predictor than what's written into lesson plans. So schools can empower students to take environmental action by learning through and from action. It's not enough to teach students something. If we want to educate the next generation for their future rather than our past, we need to do a better job to help them build agency to mobilise their cognitive, social and emotional resources, and to live with themselves, with other people, and with the planet. Education must encourage collective agency that helps students see how the whole is always bigger than the sum of its parts, and that the present shapes somebody else's future.

As we transition towards greener economies and societies, training systems must boost resilience by supporting people to continuously learn, unlearn and relearn. In parallel, our research systems need appropriate policies and resources to engage in the kind of long-term, risk-taking research that we need to innovate our way out of our current unsustainable growth model while still ensuring shared prosperity.

Finally, as large employers and consumers, education systems must "green up" their infrastructure and operations, enhancing their environmental performance while preparing for the challenges already underway, such as the increased likelihood and severity of extreme events like floods and droughts. These are not issues from a distant future; they are happening now.

RETHINKING EDUCATION

The conventional approach in education is often to break problems down into manageable bits and pieces and then to train students how to solve these bits and pieces. But modern societies create value by integrating different fields of knowledge, making connections between ideas that previously seemed unrelated, connecting the dots where the next innovation will come from.

In the past, schools were technological islands, with technology often limited to supporting and conserving existing practices, and students outpacing schools in their adoption of technology. Now schools need to use the



Mother and young son in a sustainable melon farming garden in a glass house in Bogor, Indonesia. Source: Pramod Kanakath / Climate Visuals Countdown.

potential of technologies to liberate learning from past conventions and connect learners in new and powerful ways, with sources of knowledge, with innovative applications and with one another.

The past was divided – with teachers and content divided by subjects and students separated by expectations of their future career prospects; with schools designed to keep students inside, and the rest of the world outside; with a lack of engagement with families and a reluctance to partner with other schools. The future needs to be integrated – with an emphasis on the inter-relation of subjects and the integration of students.

In today’s schools, students typically learn individually and at the end of the school year, we certify their individual achievements. But the more interdependent the world becomes, the more we need great collaborators and orchestrators. Schools need to help students learn to be autonomous in their thinking and develop an identity that is aware of the pluralism of modern living. At work, at home and in the community, people will need a broad understanding of how others live, in different cultures and traditions, and how others think, whether as scientists or as artists. The foundations for this don’t all come naturally. We are all born with “bonding social capital”, a sense of belonging to our

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family or other people with shared experiences, common purposes or pursuits. But it requires deliberate and continuous efforts to create the kind of “bridging social capital” through which we can share experiences, ideas and innovation with others, and increase our radius of trust to others.

We must rethink education and skills if we wish to harness our collective agency to act for the planet; to close the gaps between infinite growth imperatives and finite planetary resources, or between gross domestic product and human well-being; and to make the most of the opportunities that the climate transition presents.

WE SHOULDN’T IGNORE THE TRENDS SHAPING EDUCATION

Whether you’re a fan or not, *Don’t Look Up* raises an important message, reminding us that, in our global and interconnected world, incremental threats like climate change as well as abrupt systemic disruptions like COVID-19 will continue to challenge our ways of living, working and learning. Most importantly, the film tells us that we cannot and should not look away from these trends.