



The case for 21st-century learning



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Anyone wondering why knowledge and skills are important to the future of our economies should consider two facts.

First, jobs:
employment rates are

higher among people with more education than among those with less. This has continued to be the case during the crisis. Also, in those OECD countries where college education has expanded most over recent decades, learning differentials for college graduates have continued to rise compared with school leavers, for instance. Their pay did not decrease, unlike that of low-skilled workers. So from a jobs perspective, it pays to study.

This is a good, concrete argument for skilling up. But the case for 21st century learning goes deeper than this and is more abstract. It is about how knowledge is generated and applied, about shifts in ways of doing business, of managing the workplace or linking producers and consumers, and becoming quite a different student from the kind that dominated the 20th century. What we learn, the way we learn it, and how we are taught is changing. This has implications for schools and higher level education, as well as for lifelong learning.

For most of the last century, the widespread belief among policymakers was that you had to get the basics right in education before you could turn to broader skills. It's as though schools needed to be boring and dominated by rote learning before deeper, more invigorating learning could flourish.

Those that hold on to this view should not be surprised if students lose interest or drop out of schools because they cannot relate what is going on in school to their real lives.

If you were running a supermarket instead of a school and saw that 30 out of 100 customers each day left your shop without buying anything, you would think about changing your inventory. But that does not happen easily in schools because of deeply rooted, even if scientifically unsupported, beliefs that learning can only occur in a particular way.

In 2010, the world is now more indifferent to tradition and past reputations of educational establishments. It is unforgiving to frailty and ignorant of custom or practice.

We live in a fast-changing world, and producing more of the same knowledge and skills will not suffice to address the challenges of the future. A generation ago, teachers could expect that what they taught would last their students a lifetime. Today, because of rapid economic and social change, schools have to prepare students for jobs that have not yet been created, technologies that have not yet been invented and problems that we don't yet know will arise.

Think back 50 years: could educators then have predicted how the Internet, which emerged globally in 1994, or the mobile phone, which appeared a few years later, would change the world? These technologies have not just become tools of learning, but networking and knowledge sharing, as well as innovation and entrepreneurship.

How do we foster motivated, dedicated learners and prepare them to overcome the unforeseen challenges of tomorrow? The dilemma for educators is that routine cognitive skills, the skills that are easiest to teach and easiest to test, are also the skills that are easiest to digitize, automate or outsource. There is no question that state-of-the-art skills in particular disciplines will always remain important. However, educational success is no longer about reproducing content knowledge, but about extrapolating from what we know and applying that knowledge to novel situations.

Education today is much more about ways of thinking which involve creative and critical approaches to problem-solving and decision-making. It is also about ways of working, including communication and collaboration, as well as the tools they require, such as the capacity to recognise and exploit the potential of new technologies, or indeed, to avert their risks. And last but not least, education is about the capacity to live in a multi-faceted world as an active and engaged citizen. These citizens influence what they want to learn and how they want to learn it, and it is this that shapes the role of educators.

Conventionally, our approach to problems was to break them down into manageable bits and pieces, confined to narrow disciplines, and then to teach students the techniques to solve them. Today, however, knowledge advances by synthesizing these disparate bits. It demands open-mindedness, making connections between ideas that previously seemed unrelated and becoming familiar with knowledge in other fields. The Nobel Prize for Physics was awarded in 2010, for instance, to two UK scientists for their discovery of graphene, a new material with groundbreaking properties and potential applications. Known for their playful approach to physics, the two researchers' breakthrough came from a 2004 experiment involving a block of carbon and some scotch tape.

If we spend our whole lives in the silo of a single discipline, we cannot develop the imaginative skills to connect the dots or to anticipate where the next invention, and probable source of economic value, will come from. Yet most countries, with the possible exception of the Nordic countries, provide few incentives for students to learn and teachers to teach across disciplines.

Traditionally, you could tell students to look into an encyclopaedia when they needed information, and you could tell them that they could generally rely on

what they found to be true. But today, literacy is about managing non-linear information structures. Consider the Internet. The more content knowledge we can search and access on the web, the more important the capacity to make sense out of this content becomes. This involves interpreting the frequently conflicting pieces of information that pop up on the web and assessing their value, a skill rendered essential by the appearance of the Internet.

Rather than just learning to read, 21st century literacy is about reading to learn and developing the capacity and motivation to identify, understand, interpret, create and communicate knowledge. Only a few countries promote such a broad concept of literacy in their instructional practices and assessments, but more will surely follow.

Another changing tradition is for students to learn on their own and be tested at the end of the school year on what they have learned. The more interdependent the world becomes, the more collaborators and orchestrators must step in. Innovation in particular is the outcome of how we mobilise, share and link knowledge.

The knowledge world is no longer divided between specialists and generalists. A new group-let's call them "versatilists"-has emerged. They apply depth of skill to a progressively widening scope of situations and experiences, gaining new competencies, building relationships and assuming new roles. They are capable not only of constantly adapting, but also constantly learning and growing in a fast-changing world. In a flat world, our knowledge becomes a commodity available to everyone else. As columnist and author Thomas Friedman puts it, because technology has enabled us to act on our imaginations in ways that we could never before, the most important competition is no longer between countries or companies but between ourselves and our imagination.

Value is less and less created vertically through command and control-as in the classic "teacher instructs student" relationship-but horizontally, by whom you connect and work with, whether online or in person. In other words, we are seeing a shift from a world of stocks, where knowledge is stored up but not exploited, and so depreciates rapidly, to a world of flows, where knowledge is energised and enriched by the power of communication and constant collaboration. This will become the norm. Barriers will continue to fall as skilled people appreciate, and build on, different values, beliefs and cultures.

Success will go to those individuals and countries that are swift to adapt, slow to resist and open to change. The task for educators and policymakers is to help countries rise to this challenge.

Recommended links

Watch "The high cost of low educational performance", talk by Andreas Schleicher at a Lisbon Council meeting, January 2010:

www.youtube.com/watch?v=LsthK7oWpi0

OECD work on education, see:

www.oecd.org/education

Also available:

- [Plaidoyer pour un enseignement moderne](#) (French)

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