



Künstliche Intelligenz wird nicht nur die Arbeitswelt verändern, sondern auch das Lernen. Wie Schulen junge Menschen besser auf die Zukunft vorbereiten könnten.

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ADVANCED

Many people expect that artificial intelligence (AI) will take over a lot of jobs in the coming years. In 2023, the US bank Goldman Sachs estimated that up to 300 million jobs could be lost or degraded by AI, and the International Monetary Fund (IMF) thinks 40 per cent of jobs around the world will be affected. This all depends on many factors, but one thing is certain: the world is increasingly digital, and the workforce of the future will likely need a lot of new skills. Are the schools of today able to provide them?

degrade sth.
 ▶ etw. herabstufen

International Monetary Fund (IMF)
 ▶ Internationaler Währungsfonds (IWF)

affected ▶ betroffen
workforce ▶ erwerbstätige Bevölkerung

Formal education in the West hasn't been around for very long. It really began in 1763, when regular school attendance became required in Germany for children between five and 13 or 14. In the US, Massachusetts was the first state to make education compulsory, in 1852. This didn't happen in Britain until 1870. For more than a century, schools have remained relatively unchanged. In 2021, UN Secretary-General António Guterres said: "Today's education systems are no longer fit for purpose."

For years, Western curricula have focused on maths, languages and science. But when AI can do maths, translate texts and organize data in seconds, how do human skills need to change so that we can adapt?



“Schools remain fossils from a world before the internet”



Ideas for change

Michael Muthukrishna, associate professor of economic psychology at the London School of Economics, wrote in *The Guardian*: "Schools remain fossils from a world before the internet and certainly before AI." He suggested that teachers should be facilitators, rather than deliverers of knowledge, helping students practise skills, find information and work through problems. When information is constantly at your fingertips, the real skill, Muthukrishna explains, is not memorizing facts or realms of knowledge but learning where to find information and how to use it, being questioning and sceptical. In short, the "how" is more important than the "what".

Entrepreneur and educator Ian Barkin thinks schools need more real-world experience. "You can't expect students to magically emerge with a set of skills relevant to their jobs," he told *Business Spotlight*. "There is a massive gap between supply and demand. Enterprises are struggling to find people with the skills they need to continue on their innovative trajectory. We have to help shape their experiences." Barkin wants to see more

compulsory

► verpflichtet

fit for purpose: be ~

► seinen Zweck erfüllen;
hier: zukunftstauglich sein

curricula (sg. curriculum)
[kəˈrɪk.jʊ.lə] ► Lehrpläne

associate professor

► Lehrbeauftragte(r)

psychology [saɪˈkɒlədʒi]
► [wg. Aussprache]

fossil ► Fossil;
hier: Relikt

facilitator

► Vermittler(in);
hier: Lernbegleiter(in)

rather than

► statt

fingertips: be constantly at your ~

► immer verfügbar sein

memorize sth.

► etw. auswendig lernen

realm [reɪm]

► Bereich

entrepreneur

[ˌɒntrəpraʊˈnɜː]
► Unternehmer(in)

educator

► Pädagoge/Pädagogin

emerge ► auftauchen;
hier: in die Arbeitswelt eintreten

gap ► Lücke, Defizit

enterprise

► Unternehmen

trajectory ► Flugbahn;
hier: Weg, Kurs

work experience, summer schools and partnerships between schools and companies, as well as the teaching of practical skills such as cooking. “Ultimately, what you gather from that is a set of branches on which to hang additional knowledge in the future,” he says, “the foundation stones on which to continue.”

Others call for greater focus on soft skills, particularly what’s known as the “four Cs”: critical thinking, creativity, communication and collaboration. These are skills that AI can’t (yet) replace. Tim Baggott, headteacher at the bilingual Jules Verne primary school, in Munich, explains that the four Cs are at the heart of his school’s vision: “We allow children to find out about themselves as learners, as people. So much time in school is taken up with delivering the curriculum in a rigid way, there’s often little time left for the creativity, exploration and collaboration that is so important to becoming a rounded person.”

In a 2024 McKinsey report, Poland was identified as having Europe’s most positive student performance trajectory as per three different international student assessments (PISA, PIRLS and TIMSS). The report explained that Poland had implemented education reforms in the early 2000s. “Based on research about learning and comprehension, the curriculum was redesigned to prioritize critical thinking and reasoning where there had previously been a content overload.” Instead of focusing on what students learned, the reforms focused on how they learned.

Greater digitalization

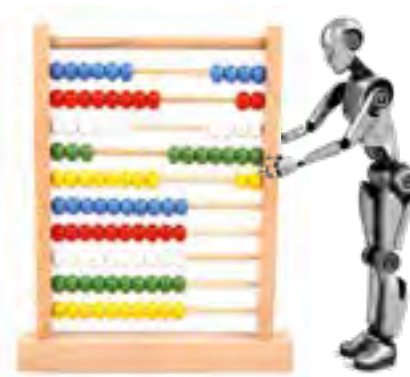
Public concerns about AI and the rapid pace of development prompted Stanford University to inaugurate an AI+Education Summit in 2023, where risks and opportunities were discussed. Emma Brunskill, associate professor of computer science at Stanford, believes AI could actually help students learn soft skills, by providing real-time support and feedback to learners as they try different strategies to improve.

Most schools now use technology in the classroom, at least to some extent. “During the corona crisis, we were quick to go online,” Baggott says. “Our team had to become digitally minded out of necessity, and now, we use devices on a daily basis. But they’re used as a tool in the classroom and are not the main method of delivery.”

Barkin agrees that digital devices have become an integral part of children’s learning and sees potential in their use. “I have two daughters, and they use AI naturally,” he says. “They ask [it] the answer to a division problem — I guess it’s like using a calculator. They’ll always have an AI by their side for the rest of their lives, so why not use it now?” Just as calculators didn’t replace mathematicians but facilitated their progress, AI could play a similar role — a new way of reaching the same result. Barkin is in favour of embracing technology to open doors. “Technology is becoming more human, and humans are becoming more technical,” he says. “There’s an inflection point. We’re all digital natives

now, and we’re inherently comfortable with technology. We can use it to chart our educational journeys.”

The many doomsday scenarios may prove unlikely, but AI will certainly change the world of work, and the workforce of the future must prepare itself.



“We’re all digital natives now”

ultimately ['ʌltɪmətli]
 ▶ letztendlich

branch
 ▶ Zweig

foundation stone
 ▶ Grundstein

soft skills
 ▶ Sozialkompetenz

headteacher (UK)
 ▶ Schulleiter(in)

primary school (UK)
 ▶ Grundschule

rigid
 ▶ starr, unflexibel

rounded ▶ abgerundet;
 hier: mit vielseitigen Fähigkeiten

as per
 ▶ laut, wie ersichtlich aus

assessment
 ▶ Beurteilung

comprehension
 ▶ Verstehen

reasoning
 ▶ logisches Denken

previously
 ['pri:vɪəslɪ] ▶ zuvor

overload
 ▶ Überfrachtung

pace ▶ Tempo

prompt sb./sth. to do sth.
 ▶ jmdn./etw. zu etw. veranlassen

inaugurate sth.
 [ɪˈnɔːɡjəreɪt] ▶ etw. eröffnen

computer science
 ▶ Informatik

digitally minded
 ▶ hier: offen für digitale Lösungen

necessity
 ▶ Notwendigkeit

calculator
 ▶ Taschenrechner

facilitate sth.
 ▶ etw. vereinfachen, erleichtern

embrace sth.
 ▶ sich etw. zu eigen machen

inflection point
 ▶ Wendepunkt

digital native
 ▶ Person, die mit digitalen Technologien vertraut ist

inherently
 [ɪnˈherəntli] ▶ grundsätzlich

chart sth.
 ▶ etw. kartieren

doomsday scenario
 [səˈnɑːrɪəʊ] ▶ Untergangsszenario



WHAT ARE THE FOUR CS?

The Partnership for 21st Century Skills (P21), a US non-profit organization, was founded in 2002 with the aim of starting a conversation on “the importance of 21st-century skills for all students”.

Research identified four main competencies required for learning. The ideas aren’t new, but educators say these are crucial skills that AI cannot master, and humans will need them to succeed in a world dominated by technology:

Critical thinking

The ability to analyse, review and logically evaluate to make informed decisions.

Creativity

The ability to consider new ideas and to find innovative solutions.

Communication

The skill of listening and speaking effectively and clearly.

Collaboration

Working with others, solving tasks in teams and understanding other perspectives.

educator

• Pädagoge/Pädagogin

crucial [ˈkruːʃl]

• wesentlich

master sth.

• etw. erlernen

evaluate sth.

• etw. auswerten