

Limits of digital upskilling, reskilling

No amount of reskilling can prepare workers sufficiently for the new knowledge economy. Governments need to help workers move to growing sectors, including hybrid high-tech and high-touch options.

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For The Straits Times

While nobody knows how long it will take for the global economy to recover from the impact of the pandemic, many observers predict that firms will accelerate their efforts to digitalise, automate and downsize, thereby hampering a job market that was already showing signs of weakness before the crisis.

In an attempt to assist mid-career job seekers in an increasingly tight and contested labour market, some countries have made digital upskilling and reskilling a core part of their Covid-19 relief packages.

Singapore, as part of four supplementary Budgets worth almost \$100 billion (20 per cent of gross domestic product) in total, is subsidising six to 12 months of full-time training for 30,000 local workers. Curricula are designed in partnership with industry and include Python programming, data analytics, Web and mobile application development, and data protection.

The European Commission, through its "Skills Agenda" for "green and digital transitions", aims to increase the share of adults in the European Union having at least basic digital skills from 56 per cent currently to 70 per cent by 2025, and has said it will prioritise investment in skills as part of its budget and recovery plan.

But how effective are such attempts to reskill the workforce?

THE RACE BETWEEN TECHNOLOGY AND EDUCATION

To be sure, there are merits to having a higher-skilled workforce. It allows firms to improve levels and quality of production, which in turn sustains national economic growth. As high-skill jobs are usually better paid, individuals can recover the tuition and opportunity cost of tertiary education through increased lifetime earnings. In other words, there is a positive "return to education".

One reason why higher skills



A robot at the World Artificial Intelligence Conference in Shanghai in July. The writer says it is highly unlikely that improved digital skills will be of help to the individual who is confronted with standardisation of knowledge work, labour arbitrage, deskilling and finally automation through AI. But he adds that experts in data engineering, machine learning, cyber security, privacy, robotics and other emerging fields continue to be in high demand. PHOTO: REUTERS

command a premium in the labour market is that technological change is biased towards high-skill workers. New technologies in the workplace (for example, office productivity software or "big data" architecture) increase the demand for more educated workers whose skills enable them to use and apply those tools.

The concept of a "race between technology and education" (as described in a 2008 book by Dr Claudia Goldin and Dr Lawrence Katz), in which technological change shapes the demand for skills, which then have to be supplied by education, has been influential in policymaking and curriculum design.

Skills training is thus viewed as a relatively simple, inexpensive and uncontroversial policy tool to satisfy the demand for high-skill labour. But how effective is it in preparing the local workforce for the wider structural changes of digitalisation and datafication, especially in a world reshaped by the Covid-19 pandemic?

THE GLOBAL AUCTION

One effect of digitalisation is that jobs can be performed globally, exposing domestic workers to global competition that can drive wages down.

In their book *The Global Auction*, social scientists Phillip Brown, Hugh Lauder and David Ashton show how the rise of a highly educated and low-wage workforce in emerging markets has allowed transnational firms to exert greater pressure on the salaries of domestic employees. In addition, helped by

advances in information and communications technology, firms have gone to great lengths to standardise and codify knowledge work, laying the basis for offshoring.

While offshoring was initially limited to the back office, it has since moved up the value chain to include functions like research, marketing and design.

According to the authors, this is to be expected: "If knowledge is a key source of company profit, then the task of business is not to pay more for it but to pay less."

In a global economy in which knowledge work has been translated into working knowledge, skills no longer matter that much. Even high-skill jobs are sold to the lowest bidder in a "reverse auction".

As they did after the 2007-2008 global financial crisis, large transnational companies are once again responding to a crisis by squeezing wages, dropping benefits and downgrading working conditions through labour arbitrage (moving jobs to lower-cost countries) and automation. Artificial intelligence (AI) technology, which has made substantial improvements in the 10 years since the last crisis, will play an important role in these efforts.

Unlike previous tools, which digitalised manual workflows and paper trails, AI aspires to automate cognitive tasks. It is already showing promising results in narrow fields such as image and speech recognition, translation and forecasting.

What impact will AI have on work in the 21st century? Research suggests that between 10 per cent

and 50 per cent of jobs are at risk of being displaced by AI.

In a recent Organisation for Economic Cooperation and Development study, the estimated mean probability of automation ranged from 28 per cent (for teaching professionals) to 64 per cent (for food preparation assistants). Managers and executives were at the lower end (30 per cent to 32 per cent).

Just to be clear, this does not imply that 30 per cent of managers will be out of work. It means that 30 per cent of the tasks that constitute the job of a typical manager are in principle automatable, given current state-of-the-art technology.

Workers will of course adjust to this new environment. Some will have to retrain or switch careers. Some will be forced into low-paid and precarious employment, or be out of work altogether. Others will capture opportunities from newly created job roles, augmented by AI.

While the net impact of AI is difficult to estimate, the threat of rising technical unemployment and underemployment is concerning.

DECLINING ROLE OF CREDENTIALS

Will digital upskilling and reskilling help to cushion the blow of further downsizing and automation?

As professors Brown, Lauder and Ashton write, we are witnessing "a fundamental shift of power in the global economy that cannot be resolved through the job market no matter how much money is pumped into developing the skills of the... workforce".

In other words, it is highly unlikely that improved digital skills will be of help to the individual who is confronted with standardisation of knowledge work, labour arbitrage, deskilling and finally automation through AI.

What is more, a recent analysis of the British labour market suggests that, for most jobs, credentials now play a relatively minor role in differentiating candidates.

Employers instead demand "job readiness". They expect new hires to be productive from day one, with minimal training. This in turn increases the pressure on educational institutions to develop not just degree holders but "marketable skills".

Whether technical certificates in areas such as data analytics or machine learning, obtained in a day or in a few months from one of the many accredited training providers that have sprung up in recent years, will be considered "marketable" enough by potential employers remains to be seen.

One silver lining is that experts in data engineering, machine learning, cyber security, privacy, robotics and other emerging fields continue to be in high demand. In the EU alone, there is a gap of almost 300,000 cyber security professionals.

However, getting into these jobs and acquiring the requisite work experience takes years. Besides, some students are simply not interested in becoming data specialists or computer programmers, even though some countries, including Singapore, have made coding classes mandatory in primary school.

POLICY OPTIONS

Digital skills are not just about mastering the latest office tools, but also about social inclusion.

Private- and public-sector investments in upskilling and reskilling should thus be applauded. At the same time, they are unlikely to protect workers from the effects of automation, standardisation and downgrading through technology.

The so-called "gig economy", in which human workers are essentially managed and controlled by algorithms, portends a particularly extreme and bleak future for the service economy as a whole.

Even in a world that is increasingly mediated and experienced through digital channels, humans still crave offline communication, social interaction and the freedom to think and create. As employees, they are drawn to firms that use technology to remove the drudgery of repetitive tasks while giving them permission to think and solve complex problems. As consumers, they seek experiences that are personal and authentic.

Companies that are nimble and perceptive enough to recognise these needs can build a strategic advantage over the behemoths that simply go down the path of further automation.

A similar opportunity presents itself to governments, especially those with limited natural resources like Singapore.

Rather than capitulating to the slow decline of low-productivity service jobs, they should demonstrate leadership and foresight by identifying and supporting research clusters that represent future sources of high-skill employment: nanotechnology, biomedical engineering, renewable energy, vertical farming and others.

Furthermore, through digitally transforming the human health and residential care sectors, which will grow as the population ages, the Government can create new types of jobs that are both high-tech and high-touch.

Investing in research, health and care, along with a solid educational curriculum in science and engineering, seems the best strategy to restore competitiveness in the global knowledge economy.

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