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Terms of Reference

The impact of AI on work and education by 2025 and by 2030

22-23 February 2024

DITCHLEY

Terms of Reference

Summary

How will AI change work and education by 2025? More tentatively, what kind of world of work and education should we imagine by 2030, when today's senior high school students will be leaving higher education and entering work? What should we be doing now to shape the future in the short and longer term?

This Ditchley conference will bring together thinkers and leaders on the future of work and education and AI. We will survey the risks and opportunities ahead and chart a path forward, with an emphasis on identifying concrete steps and actions that can be taken now.

Detail

Until 2022, AI was expected to shape the future with its automation of different types of work but at a pace that now seems quaint. OpenAI's launch of GPT 3 signalled an acceleration. This realisation burst into the wider world with ChatGPT in November 2022. Whether or not foundational (large language model) AI lives up to the hype, there is a clear path for these capabilities to become exponentially more powerful over the next couple of years. The leading companies appear to be tracking that course with the launch of GPT4; search chat agents such as Google's Bard; and multimodal capabilities combining the capabilities to interpret and generate text, sound, images and soon video.

Very likely by the time we meet in February, Google will have released Gemini, its combination of all these things, trained on Google's vast mountain of data. This in turn will prompt OpenAI and Microsoft to press on with the training of GPT5. Perhaps even more consequentially, OpenAI aims to create an App Store style eco-system for the fine tuning of AI models for specific tasks, that can then be offered to others and monetised. Microsoft is not only implementing AI capabilities with its office suite but also offering a developer platform (AutoGen) to allow developers to combine the capabilities of different AI models. In the open-source programming world, there is a surge of creativity and funding aimed at building alternatives to the offerings of the tech giants. Venture capital is flowing into AI start-ups across multiple fields from many productivity apps to personalised education. Productivity gains at work and advances in education are seen as prime target markets.

We surveyed a selection of our university interns and found that many of them were already using AI as an aid to creativity, productivity and language skills on a daily basis. This applied especially to those at English speaking institutions, whose first language was not English. AI is already proving its worth as a great leveller in some contexts. There is much talk on AI safety and some tentative steps to address the most fundamental and existential risks. On the near-term risks though (misuse and potential unwanted effects on the economy and society – potentially social media on steroids), the conclusion in the US and the UK is that the potential benefits outweigh the risks. Strategic competition with China is a particular factor for the US. (As of writing, the EU is still debating how its AI Act might be adapted to respond to the rapid advances in the field.)

We expect AI to impact the nature of work and education directly: AI will likely change how many tasks are completed at work, including the skills required, the nature of collaboration between work colleagues, and the workflow between human beings and machines. In education, it is clear that some students will be able to leverage AI capabilities to accelerate their learning, especially those with a natural or taught love of learning and curiosity. In addition to the direct effects though, the changing nature of work may demand new things from education and, in turn, the impact of AI on education may change the practices and mindset of new talent entering the workforce. That is why we decided that our discussion needs to address changes in work and education in parallel.

How should we think about these challenges and opportunities? Should we be adopting a precautionary principle, waiting to see what unwanted effects might emerge? Or does that risk companies being outcompeted, and, in education, students left unprepared for the world of work they will be entering? Should students and teachers be encouraged to embrace AI now to learn through experimentation, or is that premature?

Through this Ditchley discussion, we aim to take forward understanding in several areas:

At work, what will it mean to have computer capabilities that will be able to perform some tasks at human level and other tasks at superhuman level, for example spotting multi-dimensional patterns in data sets; pursuing many tasks in parallel; and delivering work at machine rather than human speed? Particular roles that might be affected could include research; the first draft of contracts and other documents; translation; the analysis of images, scans and other visual data; the creation of artwork, drawings and diagrams; and the analysis of data sets. As interactive AI, or AI agents, become more reliable, than perhaps stringing together these tasks may lead to more radical levels of automation.

Should we expect to see parts of work roles automated, creating new time within roles for higher level work; or with the 2030 world in mind perhaps, whole classes of human jobs handed over to machines? How will the automation of areas of white-collar work change how those skills are valued and how we see the people who possess them? (In the technology economy, we have already seen a shift in the value we accord to fluent humanities graduates, versus people with high level analytical, programming and mathematical skills). What new shifts in perceived value of skills and qualities could high performing AI bring about? How can businesses prepare their employees for these potential shifts? At the company and national level, what will it take to remain competitive in different industries in this emerging world? How will management, leadership and governance need to adapt?

If work is changing, then how does education need to adapt in response in order to prepare people to enter the world of work? Education is about more than delivering potential employees, it is also one of the main ways we aim to build well-functioning, sustainable and tolerant democratic societies. Looking outwards, nation states also depend on education of citizens to deliver security, safety and a base for a sustainable economy in an increasingly competitive, turbulent and environmentally challenged world. Could AI enable education to focus more on the formation of character, social responsibility and also creativity, innovation and entrepreneurship? Could and should the AI models we develop encode our value systems and reinforce them? Who should get to define those value systems embedded in

code? Could AI lead to a rebalancing of the value of different kinds of intelligence and skill, with emotional empathy, or artisanal skills, more highly rewarded than they are now?

Much has been written about the potential of AI to deliver personalised education. Some educators argue that the idea of self-learning through AI alone is only really applicable to the minority of autodidacts who already find education easy and natural, the kind of people who found software companies. Will the majority still need the personal encouragement and engagement that only a human teacher can provide? Should the use of AI be focused on supporting teachers, rather than replacing them? What might be lost through personalised education in terms of shared experience for a cohort? Can we make sure personalised education also supports social and democratic aims, or could personalised education lead to even more atomised societies?

Will competitive pressure to keep up with the pace of change apply to education, with parents and students (of all ages) seeking out educational experiences that equip them for the future? How will these pressures impact on the forms of education, for example could there be further moves away from long degrees to short modular courses? Will short periods of education and re-education throughout life become the norm? Will continuous education be expected, combined with work or other forms of service? Will curricula need to evolve more quickly to keep up with the changes in fields of study (for example through innovation in the sciences)? How will the nature of credentials need to adapt?

Looking ahead to 2030, can we glimpse likely deeper changes in human intelligence, knowledge and fulfilment? What will it be like to educate students who can activate multiple AI agents in parallel to research and summarise whole areas of data and knowledge? Will simultaneous AI translation replace the need to learn languages, or will we want to use AI to accelerate our language learning, because that is an enjoyable and cultured thing to do? Will the creative arts and design be made sterile by AI or just changed in the way that photography changed painting? Should education be split into AI-enhanced and human only tasks to ensure that we don't lose some of our core human intellectual skills? What will the students of 2030 want to become? What learning will they most value?

For the middle part of the conference, we will split into three working groups to address some of these issues in more detail:

Group A will look at the changes we should expect in the workplace from the impact of AI, with a 2025 and 2030 timescale in mind, drawing on the questions above on the changing nature of human roles, the new roles that might emerge and how humans and machine capabilities will combine. Will these shifts be confined to office and knowledge work or will we also see further big changes through physical automation combined with AI in other sectors? What new skills and mindsets will education need to deliver? How much of education will be delivered in the workplace?

Group B will look at education for the world of work of the future, looking at a similar set of issues as group A but from the opposite perspective. How can education use AI to accelerate and deepen learning and to expand the impact of teachers? Will current educational models be enduring, or will they need to change radically? What sort of skills and knowledge will education need to deliver to prepare people for work in 2025 and 2030?

What sort of skills and knowledge will educators themselves need? What kinds of partnerships might be needed between educational institutions and future employers?

Group C will look at education for self-fulfilment, society and democracy. How can education support families, communities and civil society groups in shaping citizenship? In an Internet and social media landscape swamped with AI-generated misinformation and disinformation, how can education enable people to find their way to reliable and sensible judgements? How can education underpin personal development, social development and democratic values for 2025 and 2030? How will AI change our personal aspirations for education and work and how we value different forms of achievement?