Adaptive **intelligence**
INTEGRATE. ENHANCE. EVOLVE.

The Disruptive Impact of AI on Secondary Education –

A Call to Action for Schools and Policymakers

The Inevitability of Change

It is no longer possible to be confident about what the education sector will look like after 3–5 years. What we do know is that the sector is about to undergo a period of rapid change as current institutions become increasingly unable to digest and respond to technological and social change, from both the students and the wider society.

The Changing Purpose of Education

The purpose of education is in need of revision. It is apparent that the traditional model is no longer preparing young people for the world of work they will be moving into. A key problem is that it is increasingly difficult to predict what that world will look like. A child midway through secondary education today will leave school at a time when it is simply not reasonable to expect the current approach to adequately prepare them.

The Obsolescence of Traditional Education Models

The long-standing educational model, which has remained largely unchanged for over 250 years, is struggling to adapt to the pace of technological and social change. The conventional approach of imparting a core body of mid-level competencies is becoming increasingly obsolete, as many of these jobs and baseline requirements are likely to be rendered redundant.

The Rise of AI-Driven Work

What lies ahead is a world where much work that would normally be done by the UK's knowledge workers will be outsourced to AI and its agents for near-zero cost. The majority of work done by the professional middle classes will become redundant. Instead, work will be done by people who orchestrate and effectively use these models and agents in their particular fields of endeavour, such as architecture, finance, accountancy, banking, sales and marketing, law, and so on.

The Widening Skills Gap

Those who are unable to orchestrate and effectively interact with these AI systems will be at a critical disadvantage compared to those who can understand the basic methodology of working alongside such models and agents.

The Lack of Preparedness in Schools

The vast majority of schools in the UK are either unaware of or unable to comprehend the magnitude of the changes being ushered in by AI. Much discussion around AI in education is based on plagiarism prevention, creating a defensive attitude among teachers regarding the technology's role in schools. There is a significant requirement for teachers and schools to have a wider overview of what this technology means and how it can be utilised to better support the unfolding world, ensuring that students have some level of familiarity with working alongside AI models and agents.

The Urgent Need for Integration

Schools are in urgent need of understanding the wider implications of these models for themselves, their students, and administrative staff. They must urgently seek to engage in training and activities to begin integrating these changes into the way the school delivers its curriculum, as well as the wider school environment. Only by doing so will they be able to mitigate the gap between the current modus operandi and the future that lies ahead for students in the workplace and broader society.

The Changing Role of Teachers

The role of teachers will change, much toward the positive. However, there will be significant transitional changes as adaptation occurs. Reluctance to start a program of working with AI in schools is not an option, as the technology will be utilised rapidly by the wider student body regardless. This will lead to a reactionary school environment unable to manage the unique challenges AI brings. Parents will want to know what the school is doing to implement and prepare students in utilising AI.

Teachers are understandably anxious about the impact of AI on their profession, concerned about the effect it will have on students, as well as their teaching methods and habits honed over many years of work.

The Future of Education

We foresee the following as an optimal outcome for education within the next 5 years:

- Much of the current examination and assessment structure will become obsolete, as it can be circumvented with AI by students and no longer reflects their true abilities. This will lead to a requirement for different ways of assessing student capabilities.
- The role of discussion, argument, and Socratic teaching will increase, much like PhD students defending their dissertations (vivas). While there are challenges around time constraints, solutions will emerge in the coming years.
- AI-driven learning systems (similar to Uplearn.co.uk) will handle much of the curriculum-based learning, and more time will be spent in group discussions and similar activities.
- There will be a shift towards human-centric values and capabilities unique to humans, as much technical work is taken up by AI. Abilities such as working together in groups, socialisation, emotional skills, and so on, will be prioritised.
- A core part of education will focus on how to utilise AI and its agents to achieve outcomes, developing skills in using available models effectively.
- Within 10 years, schools will bear little resemblance to the current modus operandi. Learning will be distributed and self-paced, and schools will primarily serve as places for group discussions, socialisation, physical activity, and skill development around orchestrating AI systems.
- There will be no traditional classrooms or formal set examinations. The credentialing system will be based on demonstrating capabilities, gained in or out of school.
- Education will not aim to prepare students for the world of work as we currently understand it, as that world will cease to exist. Instead, human capabilities will be valued, focusing on the ability to synthesise and orchestrate AI systems together with others to produce "value."

Institutional Inertia and the Path Forward

Institutional inertia is going to create enormous challenges in reaching a new optimal way of educating young people. This mismatch will be a defining feature of the coming period as schools and governing organisations attempt to digest the changing requirements brought about by AI.

Those involved in education have two choices: (1) understand what is happening and begin taking action to mitigate the stress on institutions, or (2) wait and see, relying on government advice and recommendations before taking action.

The problem is that the changes being discussed are equally, if not more, disruptive for the government and its agencies. Recent experience working with government shows they are at enormous risk due to being slow to adapt and respond, even in the best of times. It is wholly unrealistic to expect that the government and governing bodies in the UK will be able to provide timely and relevant advice and recommendations, ensuring that yet another cohort of students does not suffer from a chaotic education, as happened during the COVID-19 pandemic. The government and institutional response to COVID-19 is a good guide to how institutions are sorely lacking in flexibility and responsiveness during times of change.

Taking Independent Action

We propose that, in order to mitigate the damage from coming changes, schools prepare for what lies ahead by taking the following steps:

First, establish a dedicated group responsible for exploring and discussing the role of AI within their institution. This group should define clear goals and objectives for AI integration across the curriculum, administration, and operations. They should also conduct an AI readiness assessment to identify gaps in infrastructure, skills, and processes, as well as establish an AI governance framework to ensure the ethical, responsible, and transparent use of the technology.

This group will learn about various opportunities and risks, developing an understanding of the AI landscape to enable further exploration into building AI into school operations. Working together with an AI consultancy will help with training teachers and initiating a dialogue to discover areas of low-hanging fruit, identifying opportunities that can be improved by utilising existing AI technology. This will also help allay any fears and concerns teachers may have about utilising AI in education.

Typical target areas for development are:

Teacher-Student Areas:

- Grading student papers and work
- Providing students with feedback on their work, enabling them to course-correct and achieve better grades within a given rubric
- Integration of external platforms such as Uplearn and Khan Academy
- Identification of students who need more help in certain subject areas
- Curriculum and lesson planning: Enabling teachers to develop materials for optimised lesson plans and teaching strategies, helping them be more effective

Administrative Areas:

- A common chatbot system used by staff, students, and parents for information about the school, its policies, staff/teacher availability, timetables, etc.
- Analysis of student grades, attendance, and behaviour
- Optimising the allocation of school resources (teachers, classrooms, and materials) based on student needs and performance data

- Analysing large datasets on student outcomes, demographic trends, budgets, etc., to provide data-driven insights for long-term planning

The goal should be to learn and identify low-hanging fruit to begin working with and using a technology that will rapidly become an integrated part of school life, ensuring that teachers and students are able to adapt to increasingly rapid changes as the technology develops.

There are a number of schools in the UK that have been at the forefront of integrating AI into their operations, such as Bolton College, Loughborough Grammar School, and Pilgrims School. These institutions have begun working to use AI in their teaching and administration processes. It is the schools that are moving ahead with utilising AI that are best positioned to ensure that change is managed for the benefit of their students. Without this foresight, students will suffer from a lack of action by the very people charged with their education, ultimately failing in this remit and finding themselves having to undergo a period of stressful change forced upon them.

Summary

The Imperative for Change

The disruptive impact of artificial intelligence on the education sector is both undeniable and imminent. As AI and its agents rapidly permeate various facets of society and the workforce, the traditional educational model finds itself increasingly ill-equipped to prepare students for the world that awaits them beyond the classroom walls.

Reluctance to embrace this technological transformation is no longer an option. Institutions that fail to adapt risk becoming obsolete, unable to fulfil their fundamental purpose of equipping young minds with the knowledge and skills necessary to thrive in an AI-driven future.

It is imperative that schools and educational bodies across the UK take decisive action, recognising the urgency of the situation and the immense opportunity that AI presents. By proactively integrating AI into their curricula, operations, and overall ethos, they can mitigate the growing mismatch between the current modus operandi and the rapidly evolving demands of the workplace and society.

Embarking on this transformative journey will require a multifaceted approach. Schools must establish dedicated teams to explore and understand the AI landscape, define clear goals and objectives for AI integration, and conduct readiness assessments to identify gaps and establish governance frameworks. Collaborating with AI consultancies, fostering partnerships, and continually monitoring and adapting to emerging trends and best practices will be crucial.

The role of educators will undoubtedly evolve, with a shift towards facilitating discussions, nurturing human-centric skills, and guiding students in effectively orchestrating AI systems to achieve desired outcomes. Assessments and credentialing will need to adapt, reflecting the changing nature of knowledge and skills required in an AI-augmented world.

While institutional inertia and apprehension may pose significant challenges, the alternative – a failure to act – is far more perilous. The consequences of inaction will be borne by generations of students ill-prepared for the future that awaits them, perpetuating a cycle of disruption and disadvantage.

The time for action is now. By embracing AI as a transformative force in education, schools can pave the way for a future where students are empowered to thrive alongside intelligent technologies, equipped with the knowledge, skills, and adaptability to navigate and shape an ever-evolving landscape. The disruptive impact of AI demands a bold response, and it is the duty of educational institutions to lead the charge, ensuring that no student is left behind in the era of artificial intelligence.

About Adaptive Intelligence

Adaptive Intelligence is a AI Consulting and development company based in Oxford, United Kingdom.

A key part of our work is raising awareness of the impacts of AI on our society, our culture and its institutions. You can get in touch with us about this paper at hello@adaptiveintelligence.tech / www.adaptiveintelligence.tech