The Use of Artificial Intelligence and EdTech in Education Inquiry Response

About the Institution of Engineering and Technology (IET)

The IET is a trusted adviser of independent, impartial, evidence-based engineering and technology expertise. We are a registered charity and one of the world's leading professional societies for the engineering and technology community with over 158,000 members worldwide in 148 countries. Our strength is in working collaboratively with government, industry and academia to engineer solutions for our greatest societal challenges. We believe that professional guidance, especially in highly technological areas, is critical to good policy making. For further details on the evidence submitted, please contact policy@theiet.org.

Executive Summary

There has rarely been a type of technology in history as fast paced as Artificial Intelligence (AI), which now permeates every aspect of our daily lives. With six in ten (58%) engineering employers currently use AI, and a further 23% say that while they do not currently use AI software or equipment, they plan to in the future (IET, 2025 UK Engineering and Technology skills survey). AI is influencing how businesses, industries, and technologies operate, as well as how education is delivered, now and in the future.

AI should not be seen as something intimidating or detrimental to learning but rather be used appropriately as an aid to support teaching and learning. Policy in this area needs to go beyond considerations of automating tasks to consider basic principles of AI as a technology and how AI can be used to enhance teaching fundamentals as a source of data and information. For example, AI could be an excellent tool for sourcing and identifying gaps in a practitioner's pedagogy when developing curriculums or school development plans, citing new and novel approaches to classroom management - however it would be important to ensure that any results are assessed to ensure that it would work in the local context before use. Another use case example would be to synthesise data and demonstrate how a school or trust is performing against quality markers.

AI shouldn't be used to replace the creativity of teaching and learning otherwise the benefit of the exercise is lost. It should be seen as a tool to remove unnecessary bureaucracy and funnel educators and students to focus on the things that enable teachers to teach and students to develop skills.

Key Recommendations

- **Review evidence:** The Department for Education should continue to review evidence and provide up to date guidance to schools on suitable use of AI, developed in partnership with experts in the field. This should focus not only on the use of AI but the education about AI as a technology. The guidance needs to be flexible but aligned with how AI is being managed across the public sector, for example, ensuring there are versions of popular AI tools that allow for age-appropriate content moderation and to ensure that students personal data is not fed into the models.

- **Procurement:** The Government should continue taking a leading role in procurement of suitable AI tools across the education sector to ensure they are trained on the right data and are secure from cyber manipulation or attack.

- **An open-source resource centre:** The Government, together with teachers, students, parents and professional bodies should collaborate on an open-source resource centre for AI developers so that products can be aligned to the curriculum and trained on data suitable for the audience. Answers must be aligned to the appropriate curriculum stage in order to be of benefit to learning. Training must be easy to digest and adapt quickly to evolving technology.

- **Responsible use of AI:** Education around AI should focus on broader considerations such as environmental impact and ethics, and how to use it responsibly. A short module should be developed, that is available to a broad audience including teachers, students, parents and other professions that outlines how to use AI in a positive way, as well as its limitations. This is a transferrable skill that will equip, particularly young people in education, to be agile with new technologies throughout their career later in life.

- **Seize the opportunity to develop a workforce fit for a digital future:** The workforce of the future is going to need different skills to the one yesterday, there is a significant opportunity to equip students with the ability to have an AI native workforce that can use it but also rely on their problem solving, critical thinking and decomposition, especially in computing - skills that are not easily replaced by automation.

Learning about AI

The Department for Education can ensure an AI native workforce for the digital future. Education surrounding AI should not only include how to use it responsibly, but should also cover the environmental impact, ethical considerations, transparency and understanding of how and why it works the way it does. This will empower the next generation with the skills to embrace new technologies not just to use it, but understand it, thereby increasing product safety and productivity of the users.

AI can help schools, for example, analyse their performance data. Capitalising on AI can accelerate depth of learning as a source of data and information. It can be a research tool and additional source of information, that is interrogated as much as any other source of information would be.

From a sociology perspective young people need to be taught to be critical, to understand the value of provenance and fact checking source material as they enter a world that is increasingly surrounded by deep fakes and AI generated content.

The IET recommends that a suite of agile training and CPD programmes are developed, not only in teaching, but across professions, through initiatives such as the AI Skills Hub. These should also be made freely available to parents and guardians, as they play a critical role in supporting appropriate use of technology. These short courses would need to have the same stringency as GDPR training, for example and be developed to outline the positive use of AI and its limitations. It is critical that the limitations of AI are well understood and shown that AI can be wrong as it can be deliberately and maliciously manipulated to make incorrect decisions, human judgement is still required.

Usage and understanding of AI, as with other technologies, will be valuable skills to use in later life and children should be encouraged to be agile and responsive to new technology. However, it's critical that the limitations are well understood and shown that AI can be wrong. As AI can be deliberately and maliciously manipulated to make incorrect decisions, human judgement is still required. AI is only as good as the data it is trained with, so responsible use is the most important lesson that can be taught. Early

adoption of technology also supports learning in later life about the risks and opportunities.

Responsible use is the most important lesson that can be taught. The UK Safer Internet Centre (UKSIC) is well placed to provide resources at different levels, teaching children how to use the internet and technology safely. By using Safer Internet Day, spearhead by UKSIC, as a platform to learn about AI, this will be an ideal opportunity to disseminate the resources widely.

The government should carefully consider the unintended consequences a widespread ban on social media could result in, especially in a world where children need to grow up to be digitally literate. Digital technologies, including social media and AI, bring significant benefits to society. As with all technologies, government should ensure they are deployed safely and society is appropriately protected from potential harms and misuse. The Online Safety Act and oversight through Ofcom as a regulator provides significant safeguards to protect vulnerable people online, however, harms are still prevalent and the IET supports ongoing review and vigilance into ensuring that the legislation is future proof, for example, ensuring the definition of 'user' is expanded and new types of technology such as wearables are accounted for. We recognise social media can cause harm to young people and appropriate guardrails and protections are required. However, we believe that education programmes have a powerful role to play in building the knowledge to support safer use of digital technologies alongside legal safeguards.

Developing suitable tools

The Department for Education's AI guidance should take an approach that considers the broader technological landscape and in partnership with The Department for Science, Innovation, and Technology continue to lead on procurement on behalf of educational organisations.

The Department for Education has taken steps to invest in resources to facilitate the safe, responsible and effective use of generative AI in the education sector including £1 million of funding ed tech companies to build teacher AI tools for feedback and marking, driving high and rising education standards (GOV.UK, 2025, AI teacher tools set to break down barriers to opportunity), which is a welcome step. However, a further open-source resource centre hub should be set up for developers so that AI tools can train on the data from it, ensuring it aligns with the UK curriculum. For example, training on the curriculum itself and lessons plans would ensure suitable age-appropriate responses when asked. There are several STEM resources available for teachers to use across the UK with ready-made lesson plans, however many teachers do not know they exists or that they are curriculum linked. Ensuring AI tools are trained on appropriate data will support greater accuracy and age-appropriate results for an educational setting. Answers must be aligned to the appropriate curriculum stage in order to be of benefit to learning and this will be in part about learning to ask the right questions, in the right way.

Cybersecurity

Cybersecurity and online safety considerations when using AI should be considered within the context of education and safeguarding. The data that algorithms are trained with and used for could be manipulated by a major cyber-attack from the UK's adversaries, manipulating AI algorithms into making the wrong decisions on purpose. Even without deliberate manipulation, it is common for AI tools to acquire biases, depending on the data they are trained on. This can potentially expose children to misinformation, harmful content and online harms. It is important to ensure that the tools that are procured are fit for purpose, robustly developed and protected from cyber-attacks.

The Department for Education's AI guidance should therefore take an approach that considers the broader technological landscape. The Department should lead on procurement on behalf of educational organisations. It should be focused on creating robust procurement frameworks that hold AI providers to account and ensuring a high standard of product. This can be achieved through approved supplier lists, and additional checks such as data sovereignty requirements. The guidance needs to be flexible but align with the public sector.

Digital divide

When introducing AI into education, it is particularly important that it does not serve to further increase the technological divide which could exacerbate inequalities (UNESCO, AI and technologies in education). As we move more towards a digital world, it is vital we play our part in supporting disadvantaged children and families, who do not have the digital means to access STEM education initiatives and resources and are unable to engage with us and learn about the exciting opportunities a career in engineering and technology offers. It is important that policy makers continue to draw on the ever-increasing evidence and expertise across the world on the use and impact of AI in education, particularly as it is a fast-paced technology. Tackling the digital divide will require a collaborative effort from a community of like-minded organisations and Government.

Conclusion

AI as with other emerging technologies is something that should be included in the education system in a responsible and managed way to ensure that young people benefit from learning not only how to use it but the opportunities and risks it presents, which will be an essential skill in later life as the pace of technology progresses. The Department for Education should seize the opportunity to ensure children grow up AI native and able to critically evaluate emerging technologies whilst also using it as an aid in their future work.