Dear Sir/Madam,

The IET’s response to the Call for Evidence from the APPG on Digital Skills on ‘The Impact of COVID-19 and Lessons Learned for Improving Digital Skills in the Future’

The Institution of Engineering and Technology (IET) is Europe’s largest professional engineering and technology organisation with 168,000 members drawn from industry, academia and the public sector. The members represent a wide range of expertise, from technical experts to business leaders, encompassing a wealth of professional experience and knowledge. Our primary aims are:

- to provide a global knowledge network, promoting the exchange of ideas between business, academia, governments and professional bodies, and enhancing the positive role of science, engineering and technology
- to address challenges that face society in the future.

We would be happy to discuss our response in more detail and provide examples and evidence from our extensive networks of engineering employers and academic partners. Please feel free to contact us to arrange this.

Summary

- Government should help foster partnerships between academia and industry to equip young people with relevant digital skills.
- Programmes that target SMEs’ digital readiness should be supported by Government.
- Government should invest in local hubs of digital skills for geographical and sector areas to specialise.
- Government should research and embrace best practice of the method and practice of digital teaching (pedagogy) which must change to reflect new challenges that we find in the future.

Our response is based on expertise from our membership (as above).

Academia and Industry Partnerships - The IET calls for academia and industry to work together to provide digital skills that are appropriate and useful for business. Practitioners define digital skills differently and thus academia must be aware of this. Collaboration will ensure correct and useful digital skills can provide for the future economy. Partnerships can also support direct recruitment opportunities for students in the future and can enhance student learning by allowing students to work on real-life problems and issues. We recommend more digital career shows to connect students with a range of businesses for employment and recruitment\(^1\). Engineering students at Queen Mary, University of London, work with local businesses on real life projects to enhance their digital and soft skills for their future in work. Government can learn from these partnerships to help facilitate more for the advantage of students and industry.

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**SME’s Digital Readiness** - Many small businesses do not have the digital confidence, knowledge or skills to make this move into the online world. For instance, only 18% of SMEs have optimised their services for mobile use. The smaller the enterprise, the weaker the digital confidence. These SMEs are at serious risk of being left behind at a time when the nation needs them most. Programmes that target SMEs should be supported by Government – an example is a recent pilot scheme delivered by The Greater Birmingham and Solihull Local Enterprise Partnership, The IET, Citizens Online and Limina. Partnerships with SMEs and start-ups is crucial in moving the economy forward.

**Local Digital Skills Hubs** - Localisation of skills is also acutely important. Academic and industry partnerships can enhance local digital skills to prevent a brain drain. For example, ‘STEP into STEM’ in York is a delivery model to create and retain local skills and talent because York businesses had reported they could not always recruit the right talent in growth sectors. By partnering with universities and businesses in York, there is a specific focus on retention and growth in sectors to provide more wealth to York, which can be replicated across the country. The UK often looks abroad for talent with digital practices such as the Internet of Things (IoT) and cyber security. We recommend that the Government invest in local hubs of digital skills for geographical and sector areas to specialise.

More direct student focus is also possible as students can submit anonymous feedback and questions, asking for certain information to be reviewed during class time, which they may be too embarrassed to ask physically. Online homework can reflect real life situations – such as is done by OpenSTEM Labs from the Open University, which allow students 24-hour access to equipment, research and experiments from across the globe.

Soft skills, such as learning how to send work emails, preparing data/presentations, using digital information and working in teams are all digital skills that must be taught. Teaching must reflect ethics, data protection, bias and responsibility of using online digital platforms. Remote learning has been considered a lesser standard of teaching, which has been proven to be untrue. Thus, we must make sure that those teaching digital skills can use the digital skills themselves, which will be a barrier. Partnerships with industry, as set above, will ensure those teaching can convey the right tools correctly.

**Teaching Practice** - Students should not have to sit through hours of online learning in one sitting, which could cause fatigue and reduce overall interest – so pedagogy, the method and practice of teaching, must change to reflect new challenges that we find as we move forward. It is also not unrealistic that students may catch up on lessons after they have been taught and will have to learn with and without interactive parts of their lessons. Therefore, teaching must reflect ongoing changes in learning, meaning digital skills must be taught, used and learnt by all involved.

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