As the threat of the Gen Z skills gap looms, Intel asks:

Is The UK's Digital Future in Danger?

An Intel report on **how and why Gen Z has been ill-equipped to deal with the digital demands of tomorrow's workforce,** and **how the tech industry and government must** come together to **address the education and skills gap** to secure the UK's future digital status.

Introduction

According to the Learning & Work Institute, 92% of UK organisations state that digital skills are key to success, helping drive growth, innovation and productivity. Yet a quarter (23%) of UK employers say their existing workforce already lacks the basic digital skills to meet the need. With Gen Z projected to make up 27% of the global workforce by 2025, there is increased pressure for the next generation to resolve the digital skills shortage.

This Intel study reveals we cannot assume that Gen Z are prepared for the digital demands of the future. Based on the results of a survey of 1,000 UK-based 18- to 21-year-olds, the findings uncover a lack of understanding around how vital technology will be to tomorrow's workforce — with respondents estimating that 64% of jobs will involve technology, despite WEF predicting that 9 out of 10 will require digital skills in the future. Revealing current misconceptions around the future technology landscape, this report examines how the UK's digital future is at risk due to a stark unfamiliarity amongst Gen Z around emerging technologies, and what future careers and opportunities in technology could entail.

It includes insights and perspective from Kate Adams, Former Commercial Director at Tech Nation, Antony Walker, Deputy CEO at techUK and Trish Blomfield, UK Country Manager at Intel, who are calling for the tech industry and the government to come together to educate Gen Z and other young people on emerging technologies and the pathways to exciting career opportunities in the industry.

1) Gen Z hasn't been educated about emerging technologies

The acceleration of emerging technologies is outpacing the education system. As a result, Gen Z are not going to leave formal education equipped with an understanding of the emerging technologies that will shape the future workforce.

A lack of talent has been cited as the biggest barrier to the adoption of emerging technologies, according to a recent Gartner survey, with IT executives expecting talent shortages to be a significant barrier to 64% of emerging technologies. Within this space, AI, cybersecurity, and quantum computing are already experiencing the most acute shortages of skilled workers.

AI: IBM has found that across Europe, nearly 7 in 10 tech job seekers and tech employees believe potential recruits lack the skills necessary for a career in AI. While Microsoft's AI Skills in the UK report reveals the country is facing an AI skills gap that could leave companies struggling to compete with rivals from across the world.

Cybersecurity: Filling roles in the cybersector is already proving challenging. The UK government reports that 7 in 10 cybersector businesses (68%) have tried to recruit someone in a cyber-role within the past three years, with a third (35%) describing their vacancies as being 'hard to fill'.

Quantum computing: While McKinsey reports the global quantum computing market will reach a valuation of $1 trillion by 2035, the sector is already suffering from a shallow talent pool, which could mean a restriction on the UK's potential economic opportunity.

With growing demands for these innovations, Intel's research shows the knowledge gap is at risk of widening as the maturity of emerging technologies accelerates.

While almost half (45%) of respondents in Intel's survey demonstrated an appetite to pursue a career in tech, the data also suggests that Gen Z already lack an understanding of the emerging technologies that will truly underpin digital progression.

- **55%** either don't understand or have no idea what AI is.
- **70%** either don't understand or have no idea what quantum technology is.
- **50%** either don't understand or have no idea what cybersecurity is.

45%

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2) An evolution from STEM to STEAM

Interest for careers in technology remains strong, but awareness, nurturing and reassurance is needed for arts, humanities, and languages students. Gen Z harbour narrow perceptions about pathways into the technology industry and what tech careers entail.

Intel's research found that one of the key drivers behind pursuing a career in tech is salary satisfaction, with one-third (33%) of respondents saying they are seeking a career in tech with the ambition of earning a high salary.

The result is that Gen Z believe studying traditional Science, Technology, Engineering and Mathematics (STEM) subjects will lead to the most lucrative careers. While 34% of respondents think IT/ technology subjects will lead to the highest salary, far fewer believe taking creative subjects will have the same result — just 10% believe creative arts studies will lead to the highest salary opportunity, followed by 9% for humanities and 6% for languages.

There is also clear gender disparity in Gen Z respondents' confidence in these subjects. While 65% of males are confident in STEM subjects, this drops to 56% for females. Forty-two percent of males say they are best at math, compared with only 25% of females. However, more than one-third (36%) of females felt they are best at creative subjects, compared with just 19% of males.

What's more, Intel's research found that Gen Z mainly, albeit narrowly, equate STEM subjects with overall job success. More than one-fifth of Gen Z (21%) believe IT/ technology subjects are most likely to lead to a job in the future, compared with creative subjects such as humanities (16%) and languages (8%).

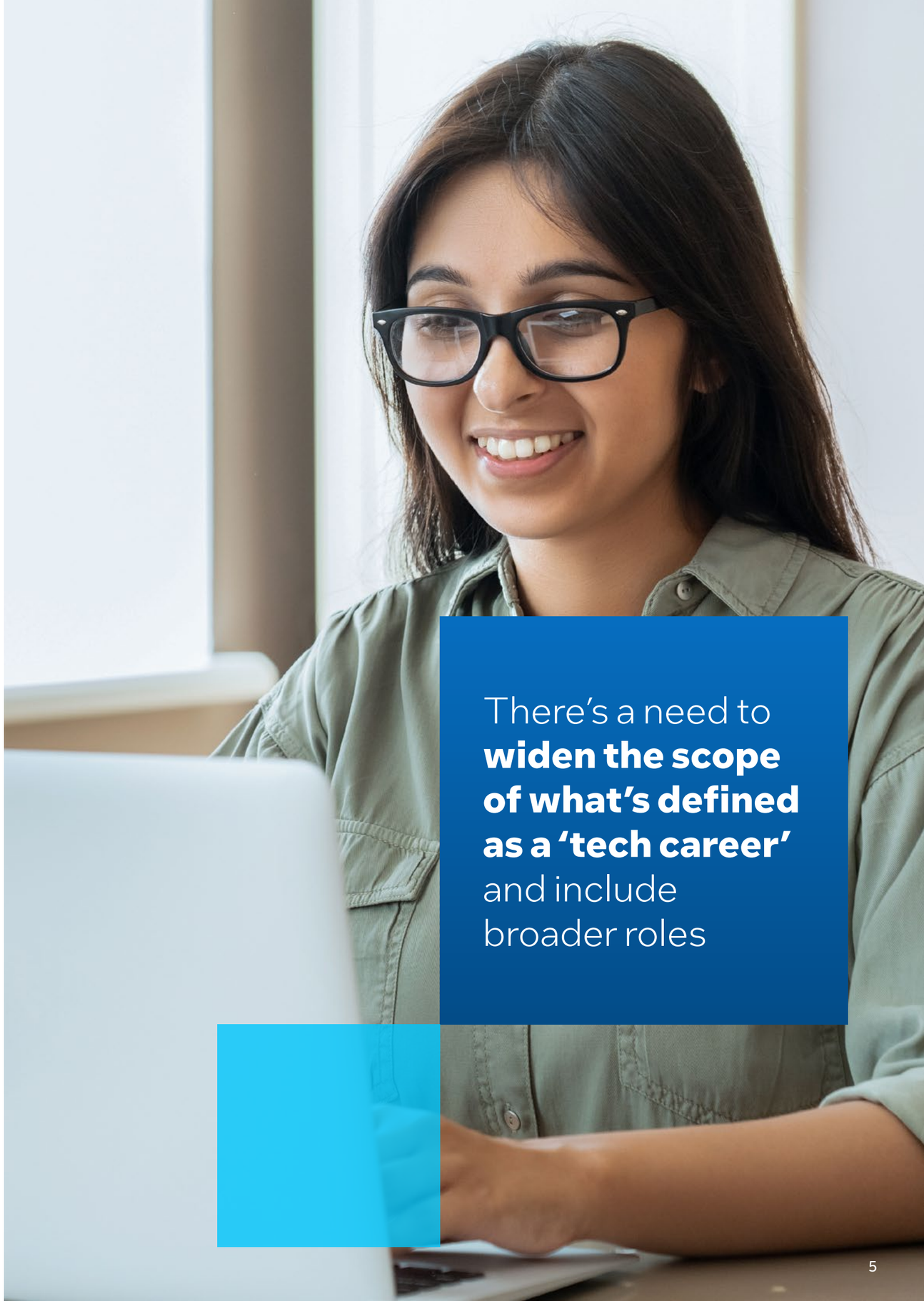
Within the evolved framework of STEAM (now inclusive of Art disciplines) more now needs to be done to show Gen Z, and especially Gen Z women, that the arts can also offer a clear pathway into the tech industry.

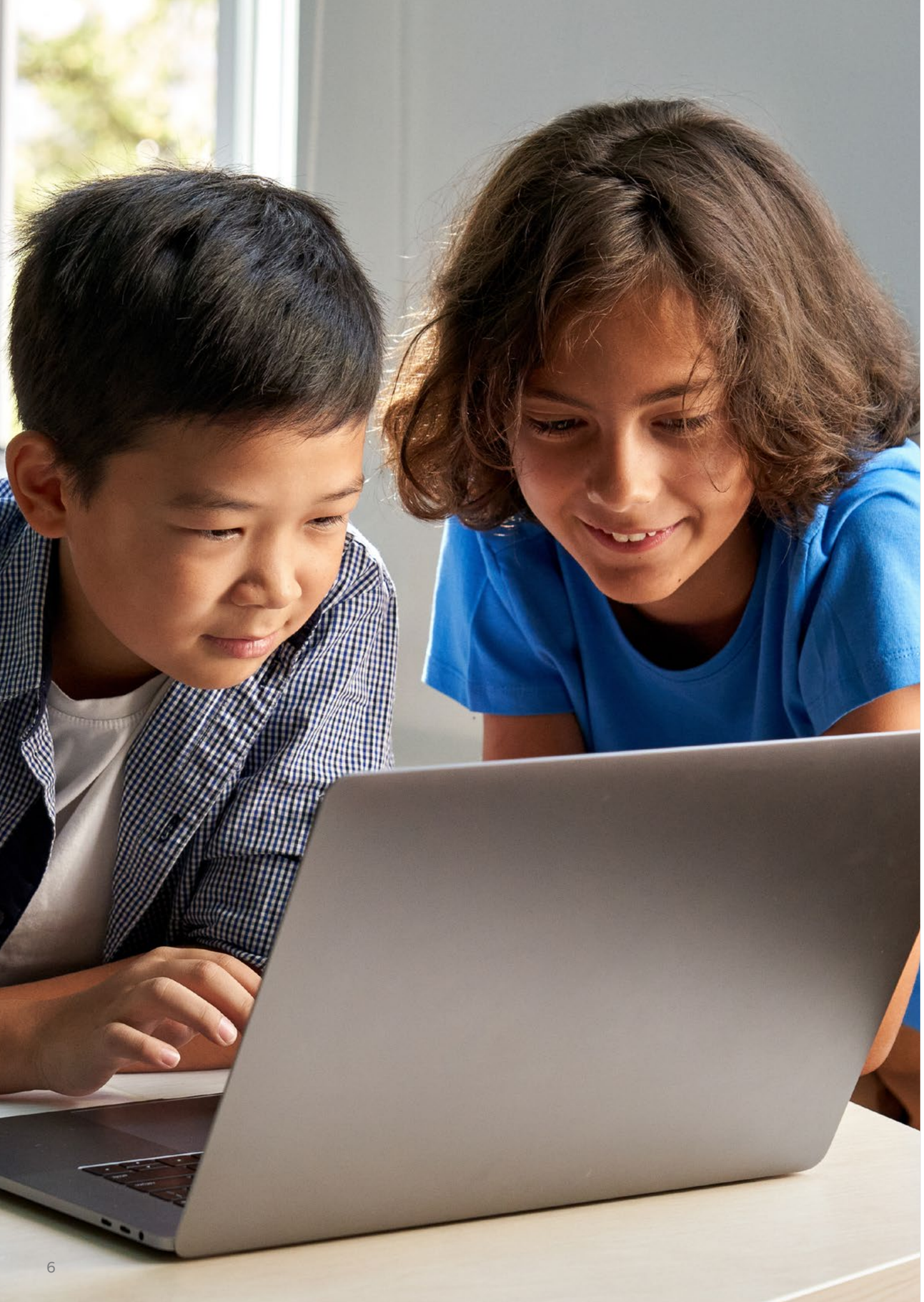
Although WEF has predicted that 9 out of 10 jobs will require digital skills in the future, Gen Z hasn't realised it. In Intel's research, Gen Z respondents estimate the number of roles that will involve some aspect of technology in the future to be far lower — at just 6 out of 10 (64%).

Industry expert **Kate Adams, former Commercial Director at Tech Nation,** believes there is a lack of understanding around how broad technology roles can be, and that these narrow perceptions around both pathways towards, and careers in, tech are damaging the future talent pool.

Quote from Kate Adams:

"Many people believe they need have a certain brain and be wired in a very scientific, mathematical way to work in tech. There's a need to widen the scope of what's defined as a 'tech career' and include broader roles — which will open the industry up to more talent and lead to more innovation. Tech skills sets require creativity, problem-solving and a visioneering outlook that are still not strong enough in our education system. We need to nurture creativity and genuine interdisciplinary skills, not just STEM competencies."





3) Working together to inspire, educate and attract young talent

To close the growing skills gap, industry players must support the government in educating Gen Z about emerging technologies and broadening the definitions of careers in technology to inspire and attract more talent.

Intel believes there are three key ways to do this:

1. Educate Gen Z about emerging technologies from an early age:

- Initiatives, such as Intel's AI for Youth program, provides young people, including Gen Z, with the skills and resources to truly understand and apply AI, and in turn understand why it will be integral to tomorrow's digital world.
- To help drive awareness and support upskilling Gen Z on emerging technology, Intel is developing programs with educational institutions to engage students from a young age and ultimately broaden the pathway to AI learning.
- Code Club, a global network of free coding clubs for young people (developed by the Raspberry Pi Foundation) aged between 9 and 13, supports over 180,000 young people learning to code each week for free.

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2. Highlight different careers in technology through varied role models and provide fuller guidance on pathways into a digital job:

Trish Blomfield, UK Country Manager at Intel, says:

"Gen Z are digital natives, having grown up with social media and digital communications. For our industry to reach them, we must speak their language and interact with them where they are, in the places where they get their information and ideas. This doesn't just mean tech recruiting via social media, but more creatively and holistically using digital channels to drive awareness by sharing the excitement of careers in tech, presenting broader sets of role models and the many different pathways into the industry today."

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3. Private sector must develop private-public partnerships to provide Gen Z and other young people with access to digital education:

- Gen Z are not familiar with the UK government's initiatives in tech and as such do not feel they have the right support to embark on a career in technology.
- For example, only 18% of Gen Z respondents have heard of the Institute of Coding (IoC) and just 16% have heard of the Department for Education's skills toolkit.
- The private sector can play a role to ensure these resources and programs are seen and accessed.
- Already, we're seeing a range of initiatives deployed by private-public partnerships beginning to support Gen Z and other young people on their digital career road maps. For instance, the creation of AI Masters conversion courses is enabling graduates to do further study courses in the field even if their undergraduate course is not directly related. This is supported by techUK members including Deepmind, QuantumBlack, Cisco, BAE Systems, Infosys and Accenture. To date the programme has enabled 2,500 people to develop new digital skills or retrain to help find new employment in the UK's cutting-edge AI and data science sectors.

Antony Walker, Deputy CEO at techUK, says:

"The UK risks falling behind in the digital skills race. To get ahead, the growing effort between the government and the private sector to better support the UK's digital ecosystem must continue. A key part of this will be opening up access to digital education through private-public initiatives."

Conclusion

Intel's survey demonstrates that the lack of understanding around emerging technologies and future roles in technology amongst those aged 18 to 21 is endangering the UK's digital progression and capability. By not addressing and solving the digital skills gap now, it could impede the UK's ability to become a global science and technology superpower.

As such, it is vital that the tech industry act now to support Gen Z and young people and bolster the future talent pipeline by providing greater awareness of future tech, delivering education around the use and impact of emerging technologies on their careers, and broadening understanding of the varied pathways into tech careers.

But key to achieving this is partnership, working across industry and with the government to provide Gen Z and other young people with access to much-needed digital skills.

Because our collective digital future depends on it.

It is vital that the tech industry act now to support Gen Z and young people and bolster the future talent pipeline

Methodology

The survey which informed this report was conducted amongst 1,000 UK-based 18- to 21-year-olds. The interviews were conducted online by Sapio Research in August 2022 using an email invitation and an online survey.