Preparing for change

How tech parents view education
and the future of work

Preparing for change: how tech parents view education and the future of work

Parents in tech roles can see first-hand how digital companies are changing the future – and with that comes insights. In this report, we explore how they try to give their children the best start in life and help them prepare for a future where work is likely to be very different to what it is now.

Given the uncertainty surrounding the impact of new technologies and the pace and scale of change that is coming, parents in tech companies don't hold definitive answers. But their jobs do mean they have an understanding of how the world might change and what that could mean for their own children.

techUK's research reveals that parents working in the tech sector or in tech roles today are optimistic about the opportunities for their children in a more automated world. But, it is also clear that the education system will need to change, with education not ending at the school gate but continuing through life.

Executive summary

Over the summer techUK surveyed over one hundred parents working in tech to find out what they thought the future of work held for their children and how well our education system today was preparing them for the jobs and labour market of tomorrow.

Our findings reveal that tech parents are optimistic about the future world of work and the opportunities that will be available to their children. However, they also believe that the education system needs to adapt in order to better prepare all children for the future.

The figures

- **64%** of parents said they felt optimistic or very optimistic about the future job opportunities that their children will have. Only 16% reported feeling pessimistic.
- **67%** of parents told us that they were making decisions about their children's education based on the expectation that the world of work will change significantly in coming decades.
- only **22%** thought their child's school was giving pupils good careers advice.
- **65%** of parents with surveyed with children between the ages of 5-17 felt that a stronger focus on soft-skills was needed both at primary and secondary school than that which currently exists.

Recommendations

For policymakers:

- **Retraining:** Over 90% of those surveyed thought their children would need to retrain throughout their lives. Policymakers must be radical in their approach to adult education and work with industry to ensure that future workforces are encouraged and supported to retrain and upskill as and when necessary.

- **Soft skills:** The survey overwhelmingly makes the case to rebalance the curriculum to ensure young people today are equipped for the jobs of tomorrow. Specifically, we should move away from solely knowledge-based learning and continuous examination to a curriculum that nurtures soft skills, such as leadership and critical-thinking.

- **Creativity:** Tech parents feel creativity will be key and we would encourage the reversal of the squeeze on creative subjects in the curriculum to restore art, design and music as core elements rather than 'nice-to-haves'.

For industry:

- **Careers advice:** Industry should play a more prominent role in engaging with schools to offer careers advice. Given the pace and scale of technological change, it is unrealistic to expect teachers or even careers advisers to keep up with the most up-to-date roles etc. Companies and individuals within the tech sector must do more to directly engage with students, and where possible their parents, to offer them advice and information.

- **Apprenticeships:** Industry must play a more active role in promoting apprenticeships to GCSE and A-level students. Companies should also do more to encourage their own staff to understand the value of apprenticeships.

Who did we speak to?

Chart 1 | Thinking about your own career, in the tech sector/in a tech role, are you in a:
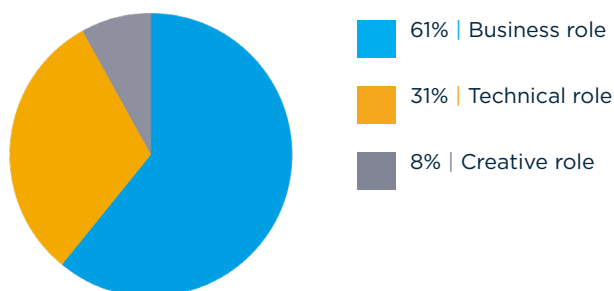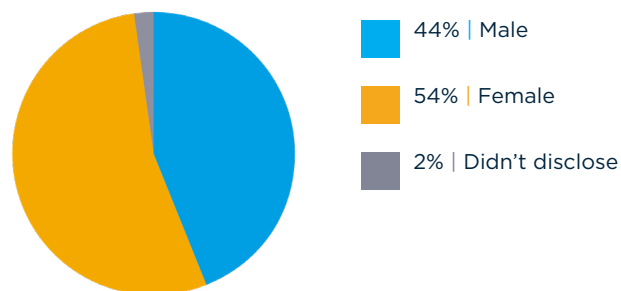

61% | Business role

31% | Technical role

8% | Creative role

Chart 2 | What is your gender?

44% | Male

54% | Female

2% | Didn't disclose

techUK surveyed over 100 parents with children under 18 working in the tech sector or in a tech role in a business, creative or technical capacity. Alongside these survey responses, techUK carried out in-depth interviews with a number of parents working in diverse tech roles in fields like health and social care, cloud computing and retail.
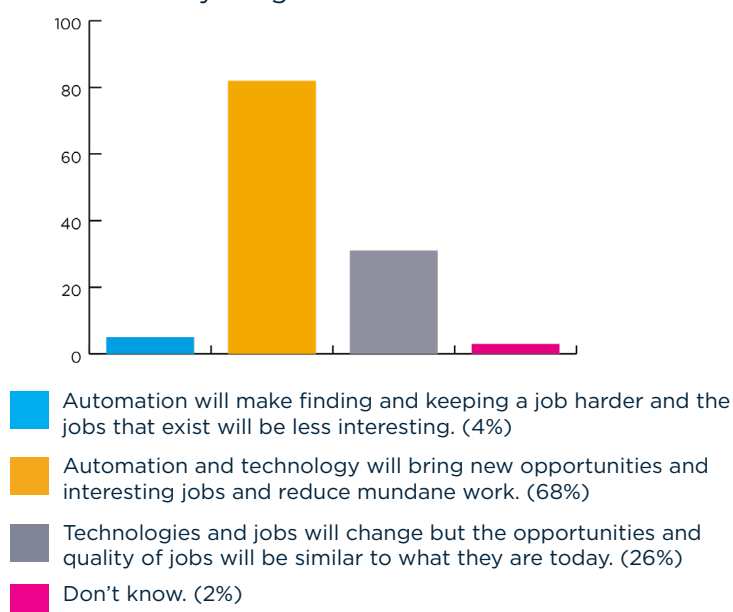
The tech workforce in the UK tends to be highly educated - with over 60% having some sort of HE qualification[1] and this was reflected in our sample with over 80% of respondents holding at least a bachelor's degree.

Are tech parents optimistic?

Despite the negative headlines and reports that have suggested that automation and new technologies will lead to the widespread destruction of jobs (research from the Bank of England for example suggested up to 15 million jobs in the UK could be at risk of automation),[2] the tech parents surveyed remained optimistic about what the future of work will mean for their children currently at school.

Our survey found that over 90% of respondents (chart 3) believed that automation and new technologies would have a postive or neutral impact on the quality of jobs available.

Chart 3 | Which of the following statements do you agree with most?

Automation will make finding and keeping a job harder and the jobs that exist will be less interesting. (4%)

Automation and technology will bring new opportunities and interesting jobs and reduce mundane work. (68%)

Technologies and jobs will change but the opportunities and quality of jobs will be similar to what they are today. (26%)

Don't know. (2%)

As illustrated by chart 4, 64% of the parents surveyed were optimistic or very optimistic about the future job opportunities that would be available to their children. 20% were neutral and just 16% were pessimistic.

Chart 4 | How do you feel about the future job opportunities for your children's generation?

14% | Very optimistic

50% | Optimistic

20% | Neutral

15% | Pessimistic

1% | Very pessimistic

Many parents were hopeful that technological change would change work in positive ways. Some parents suggested that new technologies would allow greater flexibility of working – whether that be the ability to work remotely or work fewer hours, therefore enabling a better work-life balance. One parent said: "I think we are starting to reach a crunch point with working hours and commute times getting longer. I am hopeful that technology will allow my children to embrace flexible working solutions more and generally have more freedom."

Others thought that new technologies would allow for work to become less mundane and more fulfilling. One respondent reflected this sentiment saying, "technology always creates disruption, but the main effect of automation is labour saving. We do not miss the mundane jobs of the past – gas-lamp lighters, clothes washers, dish-washers, etc. - but welcome the labour saving".

But the general sense of optimism reflected in the survey was underpinned by a view that the people who will thrive in a more automated and fast-changing world will be the ones who are equipped with the right skills. Most of the respondents to the survey had a relatively high level of education (over 80% of survey respondents held a bachelor's degree or higher) and when asked about their aspirations for their children's education those with a preference tended to want their children to also go to university. There was a strong belief that if equipped with the right skills their children will have plenty of opportunities for meaningful and well-paid work. However, many expressed concern that those without the right skills might struggle and be left behind, leading to a widening gap of opportunity in society.

Those who were more pessimistic about the opportunities for their children's generation (16%) often referenced their lack of confidence in the current education system.
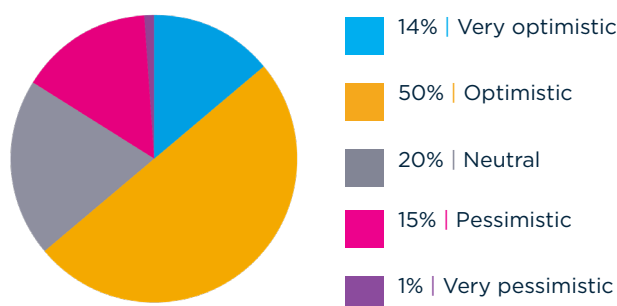
> **Any change on this scale brings both uncertainty and opportunity. I think those children fortunate enough to have access to education and training will excel, with the risk that other children without similar skills won't, increasing inequality.**

However, concern about whether education and training was fit for purpose for a fast changing world of work was expressed by optimists and pessimists alike.

> **I think for those with a good level of education new jobs will be created. However, for those less academically able many jobs will be destroyed.**

There was a low level of confidence across all respondents that the school curriculum, teachers, and careers advice is currently set up to prepare young people for what tech parents expect will be a very different world of work. Whilst tech parents seemed to be confident that they could supplement formal education there was also concern about what would happen to families and young people who were less fortunate. This suggests that a failure to address these issues will only exacerbate inequality in the years ahead.

Preparing for change

We don't need to look far into the past to see just how quickly work and jobs can change. Ten years ago the there were no 'social media managers', 'vloggers and influencers' weren't sat on the front row of fashion shows, and 'cloud specialists' were more likely to be meteorologists than tech specialists.

> **Technology transformation and the harnessing of AI bring fantastic and exciting opportunities, but I fear the government is dragging its feet in preparing our education system to support our children in taking advantage of these opportunities.**

So, what are the skills necessary to thrive in the future and how can we ensure that every child is equipped with them?

Learning to learn

91%
of respondents believed that their child would have to retrain throughout their lives

Just as jobs will change the nature of the job market is likely to change. The ability to adapt and pivot in the future world of work was a trait parents felt will be absolutely critical. Yet, the vast majority of parents who completed the survey expressed concern that learning in schools today was instead focused on passing exams. For tech parents of children in both primary and secondary school, the survey found that they felt a greater focus on soft skills would be beneficial.

What do you wish you'd learned more at school?

CODING

SOFT SKILLS

LANGUAGES

BUSINESS SKILLS   IT

FINANCE SKILLS

What does education fit for the future look like?

While the UK's education system has gone through a number of recent changes – most recently the new grading scale for GCSEs (9-1 replacing the old A*- G system), the National Curriculum remains centred on knowledge-based learning.

> **" Not only are we completely obsessed with trying to push knowledge into children's heads, but then rather than find creative ways to assess their ability to harness this information, we instead insist on testing their ability to regurgitate meaningless mark-schemes. "**
>
> **Paul Clarke, CTO, Ocado**

With increased automation and the ability to receive knowledge at your fingertips – is this the right approach we asked the parents?

Chart 5 below demonstrates that the parents we surveyed only marginally believed that their children were learning the right subjects. Perhaps more interesting is the splits that emerged when we asked whether schools were preparing their children with the right skills and competencies. The results below demonstrate that the parents we surveyed felt that the right approach to learning was not currently being deployed in schools. What was clear from our survey was the need for a better balance between subjects, skills and competencies.

Chart 5 | Do you think school is preparing your child for their future career in terms of the subjects they're taught?
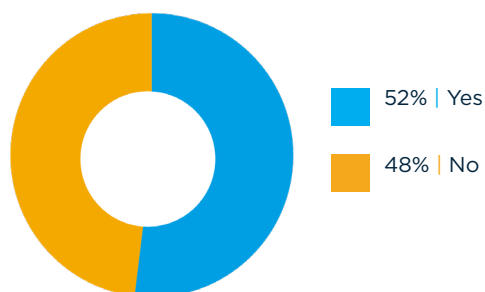
52% | Yes
48% | No

Chart 6 | Do you think school is preparing your child for their future career in terms of the skills they're taught?
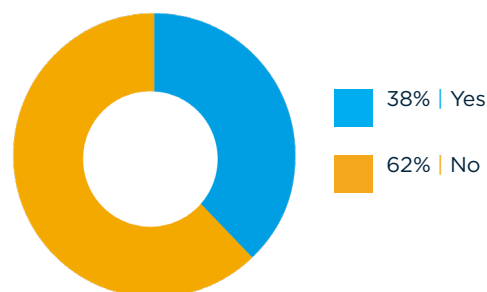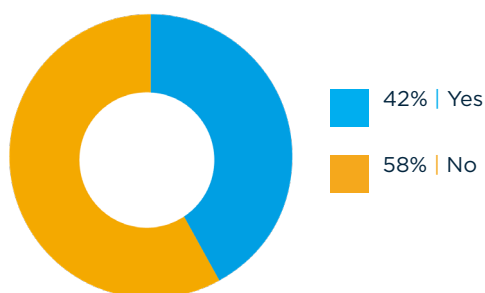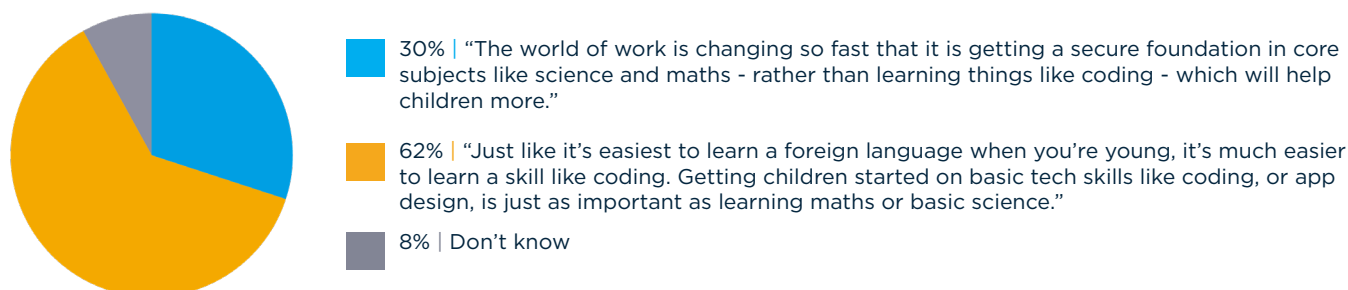
38% | Yes
62% | No

Chart 7 | Do you think school is preparing your child for their future career in terms of the competencies they're taught?

42% | Yes
58% | No

In 2016, the World Economic Forum published a list of the ten skills they felt were vital to enable individuals to thrive in the Fourth Industrial Revolution.[3] On that list were skills such as: complex problem solving, creativity and cognitive flexibility. Yet, 73% of those who responded to our survey felt that the curriculum did not place sufficient emphasis on the types of skills that would become more vital in the future world of work.[4]

Chart 8 | Which of these arguments do you agree with most?

30% | "The world of work is changing so fast that it is getting a secure foundation in core subjects like science and maths - rather than learning things like coding - which will help children more."

62% | "Just like it's easiest to learn a foreign language when you're young, it's much easier to learn a skill like coding. Getting children started on basic tech skills like coding, or app design, is just as important as learning maths or basic science."

8% | Don't know

This needs a significant shift in thinking not only from those crafting the curriculum but also from parents who need to sign up to a curriculum that would be vastly different from the one they would have experienced – and this is not easy.

For example, Dr Indra Joshi, NHS England's Digital Health & AI Clinical Lead, told us that her daughter's experience of school is very different to the education she had which was "sit down and learn your timetables off by heart". For her daughter, "the school is teaching her these global people skills, but for me I sometimes think well why don't you know what 5x8 is – but is that important? You're six you don't need to know what 5x8 is, what you do need to know is what to do if you are unhappy".

65%
of parents with surveyed with children between the ages of 5-17 felt that a stronger focus on soft-skills was needed both at primary and secondary school than that which currently exists.

techUK asked parents working in tech what statement of those in chart 8 did they agree with most. The clear winner was the suggestion that we should teach children tech skills at a young age. Carmina Lees, Managing Director at Accenture, agreed. She said: "We need to do more, earlier for our children from a technology perspective. It's only certain schools that do problem-solving or coding. We tend to start around 10 or 11, that is way too late. We need to start earlier on, 5 or 6, otherwise we're just missing it to be honest. We are catching the children far too late."

When we asked parents in tech which subject they most wished their children were taught at school that wasn't available, computer science came up most often.

Teachers

With children spending the vast majority of the week in school, we wanted to find out whether tech parents felt teachers were well equipped to prepare children for the future.

> **Most teachers are so overworked they don't have the time to think let alone come up with novel ways to prepare children. They need more help.**

The survey asked respondents whether they felt teachers spend enough time thinking about how to prepare children for the future world of work. Over 80% said no. The parents surveyed felt teachers simply didn't have the time to deal with long-term issues like this.

Respondents were similarly concerned about the state of careers advice in schools, whether from teachers or careers advisers. We asked whether tech parents felt the careers advice their children were receiving from school was preparing them for the future of work. Over 70% of those who responded said no.

What do tech parents do differently?

With insights into what the impact of technological change and developments might be, tech parents are doing some things differently. Whilst tech parents share the same concerns as parents more widely about the excessive use of devices, apps and uncontrolled screen time, they do actively encourage the use of apps with their children. Tech parents use technology to help complement and build on the learning that happens in the classroom. Quality of screen time over quantity in this space was crucial to the parents we spoke to.

Some of the parents surveyed also encouraged their children to learn to code and create – the Chief Technology Officer of Ocado has gone as far as building a 'maker lab' at the bottom of his garden where he and his children can invent and fabricate things. But, what was fascinating is that most tech parents we asked had signed their children up to well-known extra-curricular activities, such as music, sport, drama or dance. As Carmina Lees from Accenture said: "I think for me [it is important to encourage them to do] a bit of both - the sporting aspect because it is really important for her to be active, work in a team and meet new friends but I also do really like the problem-solving activities."

Conclusions and recommendations

In many respects, the tech parents we surveyed and spoke to have the same anxieties about their children's education as all parents. However, their professional insights clearly helped inform their outlook – one of general optimism.

Building a solid educational foundation that both nurtures the soft skills that will become more crucial in a more automated world, while also teaching digital skills from a young age, are key elements to ensure future success. The optimism tech parents felt stemmed from a belief that their children would have this foundation. But they also had concerns that, without the right skills, the future of work could leave some individuals out of work.

Lack of confidence in the current education system runs through the responses gathered. From the types of skills taught to the careers advice offered, tech parents sounded the alarm.

The Fourth Industrial Revolution has many unknowns. No parent we spoke to was able to outline what it would mean for the future of work with any certainty. However, there were clear messages about the need to move away from a knowledge-based curriculum that focuses on tests, the likelihood that children entering the world of work will require retraining throughout their lives, and the opportunities the Fourth Industrial Revolution hold dominated the responses.

With this in mind, techUK has produced recommendations both for the industry we represent and for policymakers planning for the future.

Many comparisons have been made to previous industrial revolutions; however, the pace and scale of the Fourth Industrial Revolution is likely to be unlike that we've seen before. Similarly, while many point to the fact that, overall, more jobs are likely to be created than lost and that the quality of life will improve (as with other industrial revolutions), this does not mean there will be no disruption.

We hope this survey will offer a thoughtful contribution to the debate on the future of work. We hope it will also suggest some areas for improvement and reform if the UK is to produce a workforce that can capitalise on the opportunities of the future.

For policymakers:

- **Retraining:** Over 90% of those surveyed thought their children would need to retrain throughout their lives. Policymakers must be radical in their approach to adult education and work with industry to ensure that future workforces are encouraged and supported to retrain and upskill as and when necessary.

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2. https://www.bankofengland.co.uk/-/media/boe/files/speech/2015/labours-share.pdf?la=en&hash=D6F1A4C489DA855C8512FC41C02E014F8D683953
3. The Future of Jobs: Employment, Skills, and Workforce Strategy for the Fourth Industrial Revolution, http://www3.weforum.org/docs/WEF_Future_of_Jobs.pdf
4. The survey question asked: When you think about the future of work do you think the curriculum places sufficient emphasis on core competencies such as: problem solving, critical thinking, emotional intelligence and teamwork?

Acknowledgements

techUK represents the companies and technologies that are defining today the world that we will live in tomorrow.

Over 900 companies are members of techUK. Collectively they employ more than 700,000 people, about half of all tech sector jobs in the UK.

These companies range from leading FTSE 100 companies to new innovative start-ups.

The majority of our members are small and medium sized businesses.

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