Deloitte.

Fair access to work

Levelling the playing field for young people from disadvantaged backgrounds

Contents

As part of the One Million Futures insight series

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Foreword

For decades, policymakers and educators have struggled to find a solution to the problem of social mobility. Too many young people who live in low-income areas of the United Kingdom are unable to go to university after school. Those who do make it will continue to face considerable barriers to employment after graduation even if they perform as well as their more advantaged peers.

In this new research, we've found that the participation rate in higher education among young people from the most disadvantaged communities in the country can be as much as ten times lower than those in the wealthiest, and the professional employment rate is nearly 11 per cent lower.

As a consequence, a new 'social mobility pay gap' is emerging: the difference in starting salaries between the most disadvantaged and the most advantaged students is currently ten per cent, on average, but can be as much as 15 per cent, depending on the subject studied.

With new legislation and greater scrutiny of data, government agencies, higher education providers and employers are increasingly aware of the problem, and this is now driving positive change. In hiring, for example, greater use of contextual information, blind recruitment and better training for interviewers, are all starting to give more young people a chance.

But shifts are now occurring in our economy that threaten to stall these initiatives and add a new twist to the problem of social mobility. Technologies like robotics, big data and artificial intelligence are disrupting employment and altering what many businesses need from their workers. A recent Deloitte study estimated that as many as 35 per cent of jobs currently performed in the UK are at high risk of being automated in the next 10 to 20 years. As well as destroying significant numbers of low-paid, routine jobs, though, these technology-driven shifts are also helping to create millions of new vacancies in higher-skilled occupations. The challenge as I see it, then, isn't just one of improving access to education and employment, it is also about developing a future workforce with the right skills and talents to match the needs of these new jobs.

So how do we find and prepare the children and young adults of today for the world of work tomorrow? And how do we ensure that the much-needed talents of every young person aren't wasted? These questions underline the important role that I believe businesses now have to play in promoting access to education and nurturing the essential skills that the future economy will require. To remain competitive, businesses will need to ensure that they can recruit the right talents, no matter what the individual's background.

At Deloitte, we're spearheading a new five-year, responsible business strategy, "One Million Futures", which aims to help one million people overcome barriers to education and employment, developing skills and accessing opportunities in the classroom, workplace and boardroom. We firmly believe that it shouldn't be where you're from that's important; what counts is where you're going.

As our economy continues to adapt to political and technological upheaval, it has become more important than ever to align the aspirations and behaviours of individuals, educators, policymakers and businesses. Therefore, I'm pleased to present this second report in our One Million Futures series, which is intended to raise awareness of the challenges and unify the debates around social mobility and the future of work.

David Sproul
Senior Partner and Chief Executive, Deloitte UK

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Introduction

"We should not be apologetic about shining a light on injustices as never before. It is only by doing so we can make this country work for everyone, not just a privileged few."

Theresa May, Prime Minister

New opportunities for young people

Britain is undergoing what has been referred to by some people as an education and jobs "miracle".[1] Amid post-referendum uncertainty, it's easy to understand why many politicians and economists feel this way: the number of young people participating in higher education in 2015 set a new record and the provisional figures from the Universities and Colleges Admissions Service (UCAS) show that 2016 will be another bumper year for student entry.[2, 3] Added to this, there are now more people in employment in the UK than ever before.[4] Indeed, such is the growth in certain sectors of our economy that it is estimated the UK will need over two million more skilled workers by 2020 to satisfy the country's 'digital potential'.[5] Research has also found that over three-quarters of a million of these digital jobs will need to be created within the next five years.[6]

Evidence of these technology-driven shifts is increasingly apparent. Last year, for example, Deloitte's analysis of the job market in *From brawn to brains: The impact of technology on jobs in the UK* suggested that technologies like robotics, analytics and big data have contributed to the creation of nearly 3.5 million highly skilled jobs since 2001.[7] In fact, for at least the last 150 years, technology has been a great "job-creating machine" with associated increases in employment, productivity and wellbeing.[8]

As this latest industrial revolution continues to unfold, businesses will inevitably place even greater emphasis in the future on recruiting workers with appropriate skills and qualifications to ensure that their products and services remain innovative and competitive on the global stage. On the face of it, the growing number of young people entering higher education and going on into high-skills employment heralds a golden age of growth for the UK's economy.

Or does it?

There are two powerful forces that threaten to disrupt this utopian vision: the continuing problem of providing fair access to education and employment; and the impact of automation on jobs.

The problem of providing fair access to education and employment

For the families of many talented young people, the rising costs of higher education put degree-level qualifications beyond reach. It remains a sad truth that too many young people from disadvantaged backgrounds remain locked out of higher education.

The problem of fair access doesn't just stop at graduation, either. Those disadvantaged young people who do make it through their university or college course can face not just the daunting prospect of having to pay off their accumulated debt, but also continuing barriers to employment.[9] Research from The Bridge Group has shown that even when educational outcomes are comparable, young adults from disadvantaged communities still struggle to enter the professions – a class of occupations typically associated with doctors, lawyers, accountants and many other higher-skilled, highly paid types of work.[10] Too many businesses continue to make hiring decisions influenced by unconscious bias, by the status associated with a student's attendance at an elite university or school, or by recruitment processes that value polish over potential.[11, 12]

In 2012, a report from the government's Social Mobility & Child Poverty Commission acknowledged that graduate-level employment was the only form of employment that had increased over the course of the recession.[13] By contrast, employment rates for those holding no qualifications declined by nearly 12 per cent. During this period, employment rates for those holding degree-level qualifications were running at almost five times the rates for those with no qualifications.[14] As a blog from the Higher Education Funding Council for England (HEFCE) suggests, "this fits with other evidence that those who are better qualified and higher skilled tend to be less affected in economic downturns".[15] Further research from the Behavioural Insights Team in January 2016 suggested that young people who take part in social action initiatives, such as volunteering, can boost some of the most critical skills needed for employment, such as empathy, cooperation and problem-solving.[16] But while 51 per cent of young people from the most affluent backgrounds participate, just 31 per cent from the least affluent areas do so.

The impact of automation on jobs

And now, just as momentum is gathering behind both the prime minister's new social equality mandate and further reform of the education sector, a new more acute problem is emerging: neither degree-level qualifications nor a career in the professions are sufficient to guarantee workers immunity from the effects of automation.[17, 18, 19]

As our increasingly digital society ushers in a new era of smart machines, the long-established link between a good university degree and a good job is starting to crumble. Many of the routine manual or cognitive activities currently carried out by humans to varying degrees across different occupations can increasingly be performed by mechanical robots, artificial intelligence and other forms of software. Deloitte's 2014 paper, *Agiletown: The relentless march of technology and London's response* suggested that as many as 35 per cent of jobs in the UK may be at high risk of automation in the next 10 to 20 years as technology advances.[20] Compared with countries like China, India and even the US, the UK's level of risk is moderate.[21] Even so, industry sectors including retail, transportation and logistics, and manufacturing are set to be most affected – although no sector will escape the impact of these shifts entirely.[22]

Deloitte's recent research, *Talent for survival: Essential skills for humans working in the machine age*, highlighted the beginnings of an apparent paradox: in an increasingly digital economy, the skills considered to be most important for workers now and in the future are not necessarily technical in nature.[23] In fact, analysis of data from the Occupational Information Network (O*NET) and the Office for National Statistics (ONS) confirms that essential skills include reading, writing, speaking, active listening, deductive and inductive reasoning, critical thinking, judgement and decision-making, complex problem-solving, self-assessment and social perceptiveness; all quintessentially 'human' attributes. Although our economy does need a supply of workers with strong Scientific, Technology, Engineering and Mathematics (STEM) skills, such as programming and technology design, cognitive and 'soft' skills fulfil a more widespread economic demand, increase workers' adaptability and, ultimately, improve employability.

Are we failing to realise the full economic potential of young people?

In the midst of this technology-driven turbulence, the challenges for policymakers, teachers, vice chancellors and business leaders are thus somewhat more complex than they might at first appear. Providing fair access to higher education and employment is no longer simply about correcting a long-standing social injustice, it is also about unleashing the economic potential of all of Britain's talented workers. Arguably, this is becoming of critical importance as the tide of skilled job vacancies rises ever higher and the country is forced to become more self-sufficient in a post-Brexit world. But, simultaneously, higher education providers must adapt to ensure that everyone entering the workforce does so with the right mix of knowledge, skills and abilities that businesses will need.

Evidence suggests that the benefits of tapping into this core of latent talent could be substantial. James Zuccollo, a senior economist at HEFCE, says that, "using the skills of those from disadvantaged backgrounds more effectively could improve the graduates' wellbeing and unlock additional productive capacity for the UK".[24] And according to research conducted by the former Department for Business, Innovation and Skills, increasing the share of graduates in the UK's workforce by one per cent could lift productivity by 0.2 to 0.5 percentage points.[25]

There are two powerful forces that threaten to disrupt this utopian vision: the continuing problem of providing fair access to education and employment; and the impact of automation on jobs.

The hypothesis underlying Deloitte's new research is that the economic potential of disadvantaged young people is not being fully realised. But how much of an impact does background have on outcomes? How does subject choice in higher education differ, if at all, between students from disadvantaged and advantaged backgrounds? Are they paid differently? And what does it mean for the skills and abilities in the workforce and therefore the economy as a whole?

This report, which is published as part of Deloitte's One Million Futures insight series, follows on from previous Deloitte studies into the impact of technology on work and jobs. In it, we consider the issues surrounding access to and outcomes after higher education. We recognise that there are many important mechanisms for improving the social mobility and employability of young people. Some of these mechanisms start from a very young age. Others, such as apprenticeships, are a key component in helping to achieve the government's social equality strategy, but which we do not consider in our analysis. We also acknowledge that a considerable body of prior research exists on the subject of social mobility, which looks into the educational and employment outcomes of disadvantaged young people. Thus, in the following pages, we sharpen the focus towards building a picture of the knowledge, skills and abilities that these young people can bring to the workforce with the right support from policymakers, educators and businesses.

Using detailed data from O*NET, the ONS, HEFCE, UCAS and the Higher Education Statistics Agency (HESA), we first assess the difficulties faced by disadvantaged students in accessing education and employment. We then consider the differences in the choices that these students make when they go to university or college, and the impact this has on talents within the workforce and graduates' starting salaries. Finally, we discuss the ongoing challenges that all organisations are likely to face, and provide a set of recommendations for policymakers, educators and business leaders.

Summary of our main findings

Our research shows that, for disadvantaged students:

1. The participation rates in higher education are disproportionately low and at risk of falling

- According to UCAS, the percentage of 18 year olds attending university has nearly doubled since 1990. In 2016, participation rates in England, Scotland, Wales and Northern Ireland were 37.2 per cent, 32.8 per cent, 32.9 per cent and 48.2 per cent, respectively.

- However, on average, for every one per cent increase in households in the lowest socio-economic classes, there is a corresponding fall of 1.5 per cent in the higher education participation rate. If technology-driven inequality continues to rise in our society, participation rates have the potential to stall or even fall.

- In 2016, just 10.3 per cent of applications to UCAS were from the most disadvantaged students, compared with over 30% from the most advantaged. And acceptances onto university courses for the poorest two-fifths of students have only increased by two percentage points since 2010. Disappointingly, there are 29 higher education providers in the UK whose acceptance rates for disadvantaged students have fallen by as much as six percentage points in the last six years.

2. The most popular subjects are education and subjects allied to medicine

- The most disadvantaged students in the 2014-15 cohort were more likely to have studied education (14 per cent compared to 11 per cent of the most advantaged students) and subjects allied to medicine (15 per cent vs 10 per cent); they were also less likely to have studied the sciences (except biological science), engineering and other technology subjects than the most advantaged students.

3. The professional divide is widening

- Even where educational outcomes are similar, there is considerable variation in the professional employment rates between the most disadvantaged and most advantaged students. According to HEFCE, 40 months after graduation, the most advantaged graduates of the 2010-11 cohort were nearly 11 per cent more likely to be employed in professional occupations than their most disadvantaged peers, and the gap has widened by over three percentage points since 2008-09.

- Eighty per cent of the most advantaged students in the 2014-15 cohort were employed as managers, directors or senior officials, or in professional or associate professional and technical occupations 40 months after graduation. In contrast, 72 per cent of the most disadvantaged students were employed in the same set of occupations.

- The most disadvantaged students in the 2014-15 cohort were more likely to be employed in education (21 per cent of the most disadvantaged students) or human health and social work (25 per cent), and other areas of the public sector (six per cent), as well as in the wholesale and retail trade (11 per cent).

4. The social mobility pay gap is nearly 10 per cent

- The gap in starting salaries between the most disadvantaged and the most advantaged young people is 9.6 per cent. For graduates of law, computer science and social studies subjects, the gaps are 14.8 per cent, 13.8 per cent and 13.5 per cent, respectively. In contrast, the most disadvantaged students of medicine and dentistry, and engineering and technology subjects, typically earn more than their more advantaged peers.

- The most disadvantaged students of veterinary science, subjects allied to medicine, law and history are more likely to find full-time employment than the most advantaged students studying the same subjects.

5. Graduates are less likely to be impacted by automation and the most disadvantaged students are well-placed to develop essential talents required for the future workforce

- University graduates are much less likely to work in occupations threatened by the smart machines, with under 20 per cent at high risk of automation in the next 10 to 20 years, compared to 35 per cent of the UK's workforce in general. The risk for graduates from the most disadvantaged backgrounds is three percentage points higher than for those from the more advantaged backgrounds.

- However, the most disadvantaged students in the 2014-15 cohort were more likely to be employed in jobs that require essential talents. These are the broad platforms of basic skills, cognitive skills and abilities, and social skills that are increasingly in demand by employers and which will enable workers to adapt to further technology-driven shifts in the future.

The hypothesis underlying Deloitte's new research is that the economic potential of disadvantaged young people is not being fully realised. But how much of an impact does background have on outcomes?

What is the impact of where you're from?

"We know that students from... disadvantaged areas face worse outcomes. This remains the case even when accounting for factors such as entry qualifications which might affect your future prospects."

Professor Les Ebdon, Director of Fair Access to Higher Education

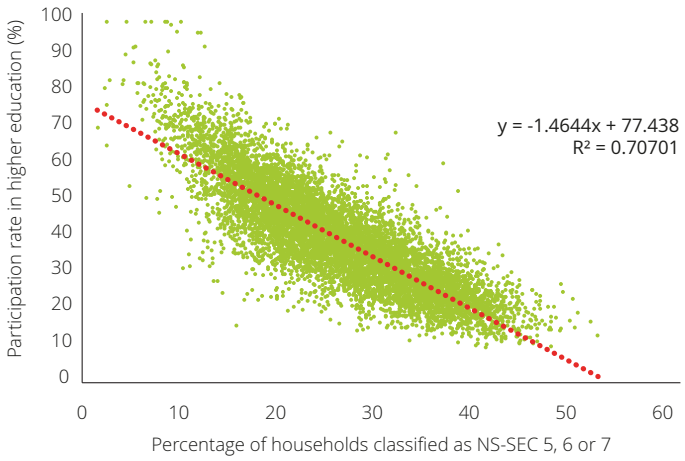
Participation in higher education

According to UCAS, a total of 674,890 people applied to start full-time courses at higher education institutions in the UK by the end of June 2016, marginally up on the same period of 2015.[26] The number of people applying from the UK also rose to 553,740. And, despite uncertainties remaining over Brexit, the number of EU applicants rose by six per cent compared to the same point in the admissions cycle in the previous year.

Whereas only 19 per cent of young people went to university in 1990, in 2016, this has increased to 37.2 per cent of 18-year-olds in England, 48.2 per cent in Northern Ireland, 32.8 per cent in Scotland and 32.9 per cent in Wales.[27, 28]

For young people from the most disadvantaged communities, though, participation in higher education remains much lower than the national averages.[29] Figure 1 illustrates the relationship that exists between the percentage of households in an area categorised as level five, six or seven of the National Statistics Socio-Economic Status (NS-SEC) and the 18-year-old participation rates in higher education in England and Wales.[30] For every one per cent increase in the percentage of households classified in this way, there is a corresponding 1.5 per cent drop in participation rate.

Figure 1. Relationship between socio-economic status and participation in higher education and in England and Wales



Source: ONS (Census 2001), HEFCE, Deloitte analysis

For young people from the most disadvantaged communities, though, participation in higher education remains much lower than the national averages.

Figures 2 and 3 illustrate how higher education participation rates vary across Britain compared with the proportion of the working age population in receipt of out-of-work benefits.

There is a clear relationship visible in Figures 2 and 3 between areas of the country with a high proportion of people in receipt of out-of-work benefits and the higher education participation rate. Indeed, participation rate is a good proxy for a wide range of factors suggesting poverty and other types of deprivation.

For the analysis of data in this report, we use POLAR3 (Participation of Local Areas, version three), which is a classification of small areas across the UK showing the participation of young people in higher education.[31] The POLAR classification draws on data from HESA, the Data Service, the Scottish Funding Council, UCAS and HM Revenue and Customs. The POLAR classification is formed by ranking 2001 Census Area Statistics (CAS) wards by their young participation rates for the combined 2005 to 2009 cohorts. This gives five quintile groups of areas ordered from '1' (those wards with the lowest participation, corresponding to communities with the most disadvantaged young people) to '5' (those wards with the highest participation, corresponding to communities with the most advantaged young people), each representing 20 per cent of the UK's young adult cohort.

Figure 2. Higher education participation rates in Great Britain

Source: HEFCE, Deloitte analysis

Figure 3. Proportion of the population in receipt of out of work benefits

Source: www.poverty.org.uk, Deloitte analysis

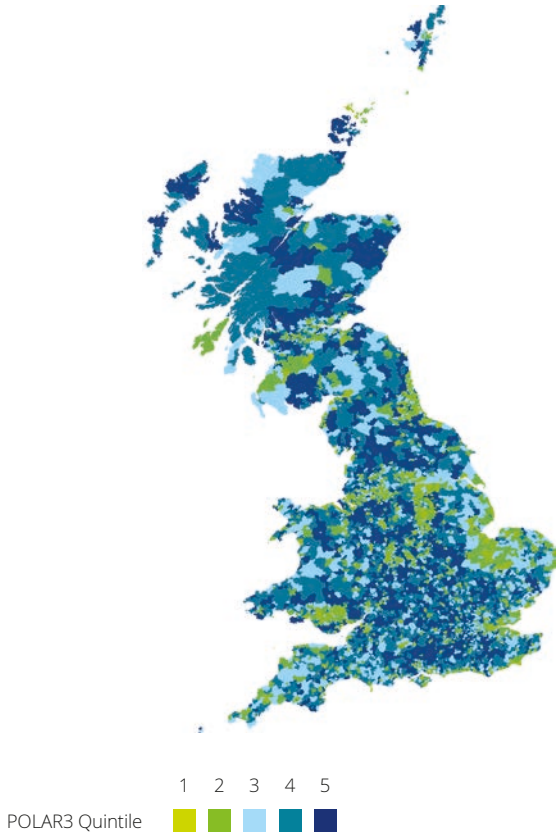
Figure 4 shows the POLAR classifications for census wards in Great Britain.

The geography of participation in higher education presented in Figures 2 and 4 highlights the challenges facing prospective students in many coastal and rural regions of Britain as well as in a number of inner city areas. These areas of the country have been recognised by the Social Mobility & Child Poverty Commission as facing a complex set of challenges.[32] Echoing one of the main findings of the Commission's Social Mobility Index, in parts of east London, we find that higher education participation rates are more than ten times lower than those of the Surrey suburbs just ten miles further west, where employment rates and household incomes are significantly higher.[33]

In 2014, The Office For Fair Access (OFFA) and HEFCE presented a national strategy for access and student success in higher education.[34] Their goal was that "everyone with the potential to benefit from higher education should have equal opportunity to do so."

How well are higher education providers doing in meeting this goal? In 2015, UCAS received a total of 1,167,520 applications for university and college places at its 'end of cycle', according to the first equality reports for individual universities, which it published in June 2016.[35] Of these applications, 10.3 per cent were from the most disadvantaged students in POLAR quintile 1 and 25.3 per cent were from either quintile 1 or 2. Acceptances from the first and second quintiles were 25.6 per cent of all places awarded in 2015, an increase of two percentage points compared to 2010. In other words, despite the fact that 40 per cent of the population of young people fall into these bottom two quintiles, they represent only around a quarter of the student population in universities in the UK.

Figure 4. POLAR quintiles in Great Britain



Source: HEFCE, Deloitte analysis

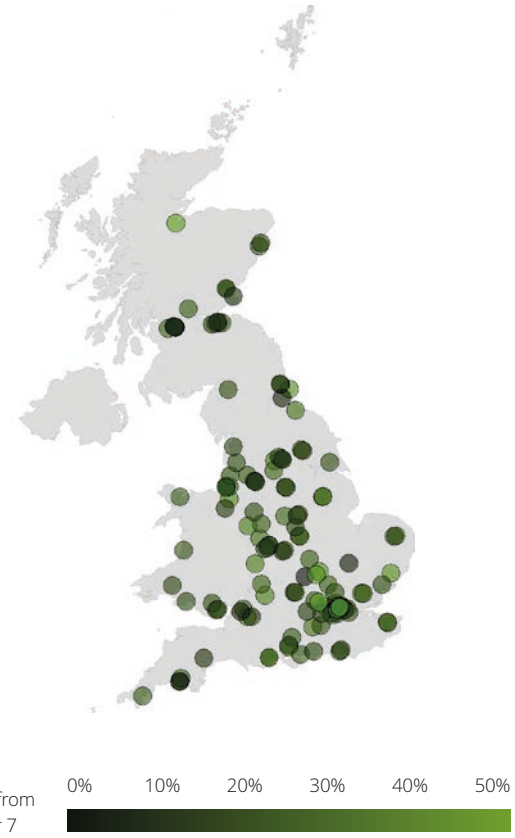
In 2014, The Office For Fair Access (OFFA) and HEFCE presented a national strategy for access and student success in higher education. Their goal was that "everyone with the potential to benefit from higher education should have equal opportunity to do so."

Figure 5 shows the representation at individual higher education providers by students from households classified as NS-SEC 4, 5, 6 or 7.[36]

On average, nearly 90 per cent of full-time students in higher education are from state schools and a third are from households classified as NS-SEC 4, 5, 6 or 7, but for some highly selective universities the proportions are much lower, despite consistent improvements over the years.[37]

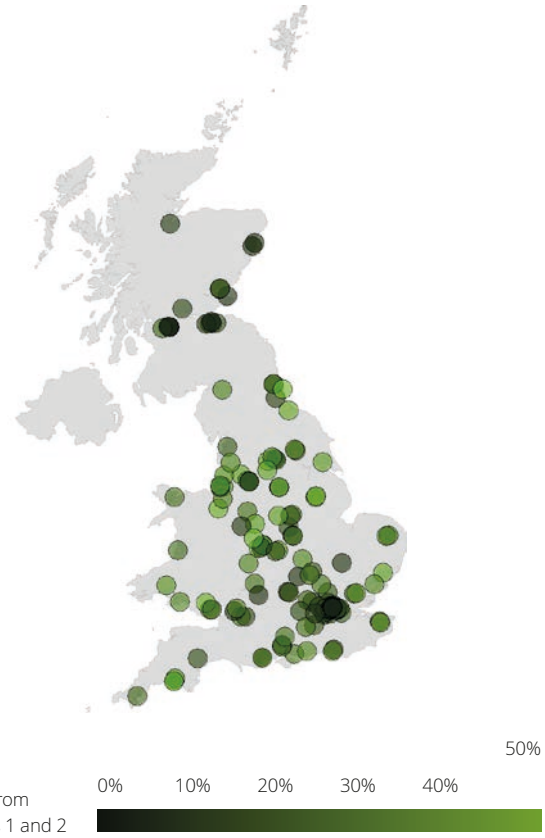
Universities and colleges which take a higher-than-average proportion of students from households with lower NS-SEC classifications are themselves located in areas of low participation in higher education. This is more clearly illustrated in Figure 6.

Figure 5. Representation at higher education providers by students from households classified as NS-SEC 4, 5, 6 or 7



Source: HESA (raw data published under Creative Commons Attribution 4.0 International License. See: https://creativecommons.org/licenses/by/4.0/), Deloitte analysis

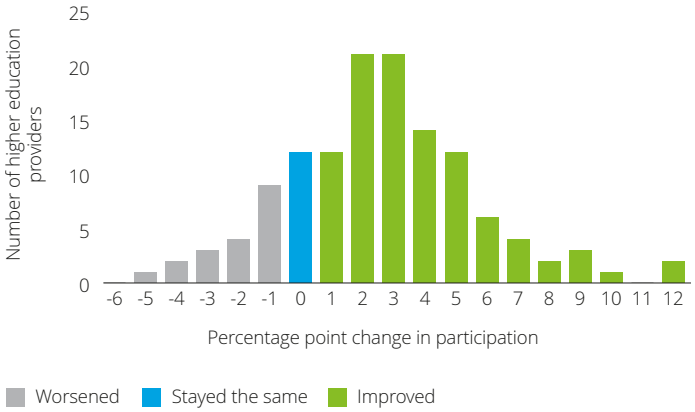
Figure 6. Representation at higher education providers by students from low participation areas



Source: HESA (raw data published under Creative Commons Attribution 4.0 International License. See: https://creativecommons.org/licenses/by/4.0/), Deloitte analysis

Since 2010, most higher education providers have improved the percentage of disadvantaged students from POLAR quintiles 1 and 2 they accept onto their courses, as illustrated in Figure 7. This figure shows that the average increase in the proportion of students from the lowest participation areas accepted onto higher education courses was two percentage points over the last six years. A total of 98 higher education providers increased their acceptance rates, with a handful of providers improving by ten percentage points or more. However, despite positive efforts elsewhere, at the other end of the spectrum there remain 29 providers for whom the proportion of disadvantaged students accepted onto courses has decreased by as much as five or six percentage points. As the national strategy for access acknowledges, "Considerable progress has been made in widening access and achieving student success in recent years. But there is still a long way to go".[38]

Figure 7. Histogram showing the percentage change in acceptances onto higher education courses for disadvantaged students from POLAR quintiles 1 and 2



Note: End-of-cycle equality data for UK-domiciled students covering all higher education providers for whom reports have been published on the UCAS website, cycle years 2010-15.

Source: ONS (Census 2001), HEFCE, Deloitte analysis

Participation in employment

For individuals who participate in higher education, the prospects for employment today are very good. Research published by HEFCE in August 2016 revealed that 93.9 per cent of graduates were employed six months after graduation and 97.1 per cent of graduates were in employment or further study 40 months after leaving higher education.[39] Significantly, after nearly three and a half years, a large proportion (68.9 per cent of all graduates) were employed in professional roles or were continuing with further study.

However, there are noticeable differences in employment outcomes for students from disadvantaged backgrounds, even, as Kirsty Johnson from HEFCE observes, if the exam results they have already achieved are the same as their more advantaged peers.[40] HEFCE's data shows that young people from POLAR quintile 5 (the most advantaged) are significantly more likely to be degree qualified, have a first or upper second qualification, have a graduate-level job or be in further study than young people from quintile 1.

The causes of these differences appear to include:

- the curricula and learning, including what is taught and how students learn
- the relationships between staff and students, and whether there is a sense of 'belonging' among students
- social, cultural and economic capital, including how students network and draw on external support, as well as students' financial situation
- psychosocial and identity factors, which include the extent to which students feel supported and encouraged.[41]

But perhaps the greatest differences in outcomes arise when employment by graduates among the professions is considered, as illustrated in Figure 8.

Figure 8. Professional employment rates 40 months after graduation by POLAR quintile

POLAR quintile	Observed professional employment rate for graduates in the 2008-09 cohort	Observed professional employment rate for graduates in the 2010-11 cohort
1 (most disadvantaged)	73.1%	69.9%
2	74.7%	72.7%
3	75.7%	74.6%
4	78.9%	76.9%
5 (most advantaged)	80.5%	80.7%

Source: HEFCE

The analysis by HEFCE shows two worrying and statistically significant effects: first, for the 2010-11 cohort, the gap between the most disadvantaged and most advantaged students in terms of their professional employment rate 40 months after graduation has increased from 7.4 to 10.8 percentage points; and second, professional employment rates at 40 months were lower for graduates in 2010-11 than 2008-09 for all quintiles except the most advantaged.

Although universities are, on average, accepting slightly more disadvantaged students, the professional divide between the most and least disadvantaged is widening, not closing. Early in 2016, The Centre for Social Justice observed, "As the British jobs miracle increases employment to record levels it is becoming increasingly clear that there are a small group of people who are still struggling to enter work and a larger number who are struggling to progress in it".[42]

Access to employment also appears to be affected by geography. For instance, more than three-quarters (76 per cent) of students from the most disadvantaged backgrounds are employed in the region in which they were originally domiciled compared with just 64 per cent of students from the most advantaged backgrounds, who are seemingly more mobile and willing to venture farther from home to find employment.

For a decade or more, the UK government has consistently made social mobility a priority. For example, the Welfare Reform and Work Act 2016 compels successive governments to publish a report annually on progress towards full employment, and provides a mandate to the Social Mobility Commission for promoting social mobility in England, providing advice to ministers and publishing a report setting out its views on the progress made towards improving social mobility in the UK.[43]

However, it is clear that the divide between the most advantaged and most disadvantaged is deeply entrenched, despite the good intentions of the national strategy for widening student access in higher education and the new welfare Act. Neither, though, have considered the impact that technology-driven shifts in our economy are already beginning to have on employment outcomes.

The decline in the professional employment rates between the 2008-09 and 2010-11 cohorts suggests that it is becoming harder for graduates to find jobs even in the highly skilled areas of the economy that are at the lowest risk of automation. This is backed up by the results of a survey, published in September 2016 by the Association of Graduate Recruiters, which found that even though the total number of vacancies reported by British employers is increasing, the number of jobs for new graduates had shrunk by eight per cent in a year.[44]

Persistent divisions in education could easily widen into employment chasms for graduates as the competition for human work intensifies over the next decade. The shifts we are beginning to see in employment trends highlight an imperative to build a workforce with a broad range of cognitive and social skills. At the moment, though, too many young people with the skills, knowledge and abilities needed in the future economy are being let down by a system of education and employment that places too much emphasis on where they study and from where they come.

How does it affect where you're going?

"The reality is that no matter the perceived or actual level of risk, unless the mix of skills, knowledge and abilities is right it will become increasingly difficult to sustain growth, and the UK's influence as a major economy will decline."

Talent for survival: Essential skills for humans working in the machine age[45]

If job opportunities are not accessible to all those with the requisite skills and talent, "efforts being made to improve social mobility will continue to stall," says the Rt Hon Alan Milburn.[46] We believe that if the requisite skills and talent are not accessed by the economy, efforts to improve growth and productivity will also stall. The topic of social mobility has thus become a double-edged sword. We need to increase the supply of educated young people to meet the increasing demand for vital skills and talent.

But what are the vital skills and talents? In our recent report, *Talent for survival: Essential skills for humans working in the machine age*, we analysed official data to rank 120 different skills, abilities and domains of knowledge according to their importance to the greatest proportion of the UK's workforce.[47] The top 25 talents are shown in Figure 9.

Our report highlighted the importance of human cognition, collaboration and social interaction above academic knowledge, technical skills and physical abilities. Yet the UK's education system – from early years to higher education – is designed primarily to impart knowledge and, increasingly, the technical skills like coding that are perceived to be important to the country's future economic and social progress. Even the terms 'knowledge-based economy' and 'digital economy' are biased towards a set of capabilities that smart machines are all the time more able to provide. This research may go some way to explaining why employment rates among graduates of Computer Science degrees are lower than those for all other subject areas.[48]

Through its analysis, *Talent for survival* also emphasised the importance of understanding the context in which young people perform. If knowledge recall and academic excellence are no longer the yardsticks that we will need to measure the contribution a young adult can make to the economy, is it right that higher education providers and businesses should set their entrance criteria to include limitations based on absolute exam grades? Instead, perhaps we should look for the potential to develop problem-solving ability, judgement, time management, listening and speaking skills, and all the other attributes listed in Figure 9, considering the environment in which young people achieve their grades.

This change is starting to appear in several universities and businesses. At the University of Oxford, for example, the School Liaison Officer recently commented, "Students think they have to have all A*s at GCSE. They don't realise that we use a lot of contextual data in our admissions, to see how they've done compared with their school's average".[49] Businesses like Deloitte, too, are increasing their use of contextualised information when hiring graduates, as well as engaging more closely with schools and universities to help education providers understand the changing demands for different skills.[50, 51] Ultimately, though, such recruitment approaches will only be fully successful if the students themselves are aware of them and are encouraged to apply.

Figure 9. The essential talents in the UK's workforce

Rank 2015	Talent	Category	Description
1	Oral comprehension	Cognitive	The ability to listen to and understand information and ideas presented through spoken words and sentences
2	Problem sensitivity	Cognitive	The ability to tell when something is wrong or is likely to go wrong
3	Oral expression	Cognitive	The ability to communicate information and ideas by speaking so others will understand
4	Near vision	Sensory	The ability to see details at close range
5	Deductive reasoning	Cognitive	The ability to apply general rules to specific problems to produce answers that make sense
6	Critical thinking	Process	Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems
7	Speaking	Content	Talking to others to convey information effectively
8	Information ordering	Cognitive	The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules
9	Monitoring	Process	Monitoring/assessing performance of yourself, other individuals or organisations to make improvements or take corrective action
10	Active listening	Content	Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting
11	Speech recognition	Sensory	The ability to identify and understand the speech of another person
12	Speech clarity	Sensory	The ability to speak clearly so others can understand you
13	Category flexibility	Cognitive	The ability to generate or use different sets of rules for combining or grouping things in different ways
14	English language	Arts & humanities	Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition and grammar
15	Coordination	Social	Adjusting actions in relation to others' actions
16	Inductive reasoning	Cognitive	The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events)
17	Written comprehension	Cognitive	The ability to read and understand information and ideas presented in writing
18	Reading comprehension	Content	Understanding written sentences and paragraphs in work-related documents
19	Social perceptiveness	Social	Being aware of others' reactions and understanding why they react as they do
20	Judgement and decision-making	Systems	Considering the relative costs and benefits of potential actions to choose the most appropriate one
21	Time management	Resource management	Managing one's own time and the time of others
22	Customer and personal service	Business & management	Knowledge of principles and processes for providing customer and personal services
23	Selective attention	Cognitive	The ability to concentrate on a task over a period of time without being distracted
24	Written expression	Cognitive	The ability to communicate information and ideas in writing so others will understand
25	Complex problem-solving	Complex problem-solving	Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions

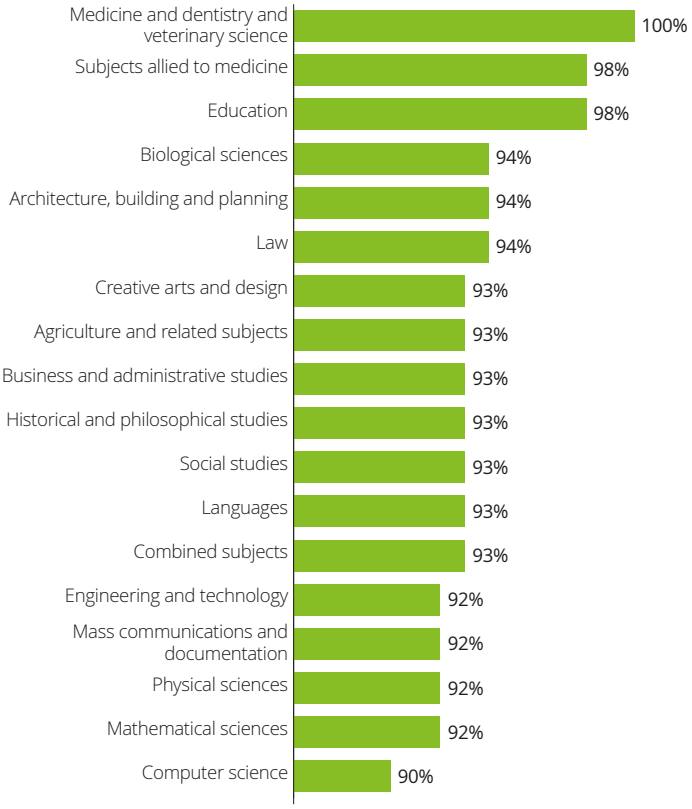
Knowledge Skill Ability

Source: O*NET, ONS, Deloitte analysis

From subjects to skills

The graduate employment rates for different subjects studied during higher education are shown in Figure 10.

Figure 10. Employment rates by subject of study 2014-15



Source: HESA (raw data licensed under a Creative Commons Attribution 4.0 International Licence. See: https://creativecommons.org/licenses/by/4.0/)

However, what Figure 10 also shows is that STEM subjects typically suffer from lower rates of employment six months after graduation than non-STEM subjects, like the arts and humanities. There is a sense that, underlying these top-level figures, different subjects enable different skills and talents to be developed – and perhaps that certain non-technical subjects might provide a better platform for employment as the economy continues to experience technology-driven shifts.

To explore this possibility, we have analysed the latest detailed data provided by HESA from the UK's Destination of Leavers from Higher Education survey.[52] For each subject, this data provides information on the number of graduates who went on to employment and the occupations they entered six months after graduation. By cross-referencing with the occupation and skills data derived from our *Talent for survival* research, we can establish, from the occupations graduates tend to enter, the relationships between subjects studied during higher education and the skills needed for work.

Figure 11 shows, for each subject area, the most important knowledge, skills and abilities in the occupations graduates typically enter.

If there's one striking correlation that becomes apparent from examining the data in Figures 10 and 11, it is that graduates in subjects with the highest levels of employment tend to enter occupations where the importance of customer and personal service knowledge is highly ranked – and in many cases is highest ranked. According to definitions from O*NET, customer and personal service knowledge encompasses "knowledge of the principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction".[53] *Talent for survival* found that customer and personal service knowledge was the most important attribute for the UK's workforce in terms of its absolute importance and was also ranked 22nd out of 120 attributes in terms of the proportion of the workforce for whom the attribute is of medium or high importance.

Figure 11. Important knowledge, skills and abilities contributed by different subjects

	Most important knowledge, skills & abilities in the occupations graduates typically enter									
Subject	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
(1) Medicine & dentistry	Medicine & dentistry	Oral comprehension	Inductive reasoning	Problem sensitivity	Customer & personal service	Oral expression	Psychology	Deductive reasoning	Reading comprehension	Written comprehension
(4) Veterinary science	Medicine & dentistry	Customer & personal service	Problem sensitivity	Biology	Inductive reasoning	Reading comprehension	Deductive reasoning	English language	Science	Oral expression
(2) Subjects allied to medicine	Customer & personal service	Psychology	Oral comprehension	Problem sensitivity	English language	Oral expression	Education & training	Reading comprehension	Active listening	Written comprehension
(I) Education	Education & training	English language	Oral expression	Oral comprehension	Speaking	Speech clarity	Learning strategies	Written comprehension	Active listening	Reading comprehension
(C) Law	English language	Customer & personal service	Oral expression	Oral comprehension	Written comprehension	Active listening	Speaking	Reading comprehension	Written expression	Critical thinking
(3) Biological sciences	Customer & personal service	Oral expression	Oral comprehension	English language	Active listening	Speaking	Written comprehension	Reading comprehension	Problem sensitivity	Speech clarity
(A) Architecture, building & planning	Oral comprehension	Oral expression	Customer & personal service	English language	Deductive reasoning	Reading comprehension	Written comprehension	Mathematics	Problem sensitivity	Critical thinking
(J) Combined	Customer & personal service	Oral expression	Oral comprehension	English language	Active listening	Written comprehension	Speaking	Reading comprehension	Problem sensitivity	Critical thinking
(F) Languages	Customer & personal service	Oral expression	English language	Oral comprehension	Active listening	Written comprehension	Reading comprehension	Speaking	Written expression	Speech clarity
(D) Business & admin studies	Customer & personal service	Oral expression	Oral comprehension	English language	Written comprehension	Active listening	Reading comprehension	Speaking	Critical thinking	Written expression
(G) Historical & philosophical studies	Customer & personal service	Oral expression	Oral comprehension	English language	Active listening	Written comprehension	Speaking	Reading comprehension	Speech clarity	Speech recognition
(B) Social studies	Customer & personal service	Oral expression	Oral comprehension	English language	Active listening	Speaking	Written comprehension	Reading comprehension	Problem sensitivity	Critical thinking
(5) Agriculture & related subjects	Oral comprehension	Oral expression	Customer & personal service	Active listening	English language	Problem sensitivity	Written comprehension	Critical thinking	Reading comprehension	Speaking
(H) Creative arts & design	Customer & personal service	Oral expression	Oral comprehension	English language	Active listening	Speaking	Near vision	Written comprehension	Speech clarity	Speech recognition
(7) Mathematical sciences	Oral expression	Oral comprehension	English language	Written comprehension	Customer & personal service	Active listening	Computers & electronics	Deductive reasoning	Mathematics	Critical thinking
(9) Engineering & technology	Oral comprehension	Oral expression	Mathematics	Written comprehension	Reading comprehension	Deductive reasoning	English language	Computers & electronics	Problem sensitivity	Critical thinking
(E) Mass comms & documentation	Customer & personal service	English language	Oral comprehension	Oral expression	Active listening	Written comprehension	Reading comprehension	Speaking	Near vision	Written expression
(6) Physical sciences	Oral comprehension	Oral expression	English language	Written comprehension	Customer & personal service	Active listening	Critical thinking	Speaking	Deductive reasoning	Problem sensitivity
(8) Computer science	Computers & electronics	Oral comprehension	Oral expression	English language	Written comprehension	Customer & personal service	Reading comprehension	Active listening	Deductive reasoning	Critical thinking

Knowledge Skill Ability

Source: O*NET, ONS, Deloitte analysis

We believe that if the requisite skills and talent are not accessed by the economy, efforts to improve growth and productivity will also stall. The topic of social mobility has thus become a double-edged sword. We need to increase the supply of educated young people to meet the increasing demand for vital skills and talent.

So which subjects provide the best platform overall for young people entering the world of work? One way of answering this question is to rank subjects according to how well the knowledge, skills and abilities used by graduates of those subjects match the full set of most important and widely applicable attributes in the economy as a whole. We show this ranking in Figure 12 for the top 50 subjects studied by more than 1,000 students in 2014-15.

The correct interpretation of Figure 12 is important: graduates of the subjects and subject areas listed in the table tend to enter occupations in which the important skills, abilities and knowledge domains are also universally important across the UK's workforce. In principle, therefore, graduates of these subjects are most employable because these talents are in most widespread demand. The table shows that students of nursing, teaching, law and a small proportion of STEM subjects, including certain branches of engineering, physics and computer science, appear to be most employable based upon the widely applicable nature of their talents.

By contrast, graduates of jazz performance, fish farming, private law, historical geography, public accountancy, livestock husbandry and other similarly specialised subjects tend to work in occupations requiring skills that are of only limited demand in niche areas of the workforce.

Of course, for certain 'controlled' subjects, such as medicine or nursing, the number of students enrolled on university courses is determined by the government to match the forecast needs of the workforce. Therefore, despite the eminent transferability of skills to other areas of the economy, graduates of these controlled subjects are much more likely to enter the occupations for which they have been trained.

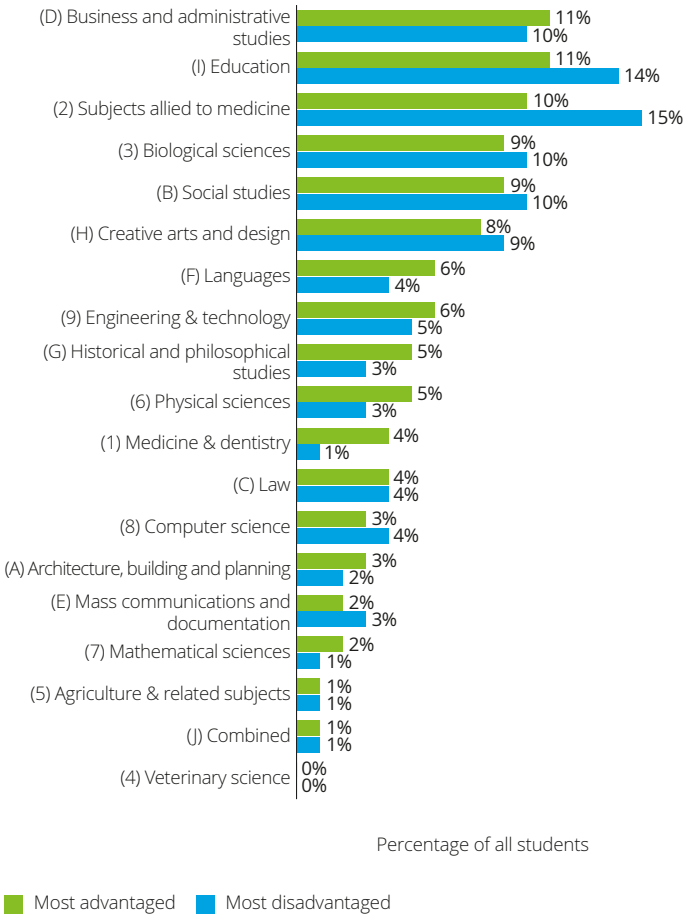
Figure 12. Subjects and subject areas that provide the best platforms for graduate employment in all sectors (2014-15)

Rank	Subject	Number of students (nearest 100)
1	(A400) Clinical dentistry	2,100
2	(B740) Adult nursing	16,700
3	(B710) Community nursing	1,500
4	(B230) Pharmacy	4,900
5	(B730) Children's nursing	2,600
6	(B720) Midwifery	3,600
7	(B760) Mental health nursing	4,700
8	(B700) Nursing	11,600
9	(M250) Legal practice	1,500
10	(L500) Social work	10,600
11	(B160) Physiotherapy	2,900
12	(B950) Paramedical science	1,700
13	(X120) Training teachers – primary	26,200
14	(X130) Training teachers – secondary	1,500
15	(X161) Training teachers – special needs	1,000
16	(X100) Training teachers	23,300
17	(N600) Human resource management	3,700
18	(X140) Training teachers – tertiary	1,100
19	(X141) Training teachers – further education	4,000
20	(B990) Subjects allied to medicine not elsewhere classified	1,900
21	(X370) Academic studies in education (across phases)	1,300
22	(H200) Civil engineering	4,600
23	(V600) Theology & religious studies	1,800
24	(B821) Radiography, diagnostic	1,900
25	(X900) Others in education	3,300
26	(B930) Occupational therapy	2,600
27	(K400) Planning (urban, rural and regional)	1,600
28	(K220) Construction management	1,600
29	(B940) Counselling	2,000
30	(L530) Youth work	1,200
31	(X300) Academic studies in education	16,200
32	(L520) Child care	2,000
33	(B900) Others in subjects allied to medicine	6,100
34	(F600) Geology	1,300
35	(I300) Software engineering	1,000
36	(R400) Spanish studies	1,400
37	(L510) Health and welfare	3,400
38	(F300) Physics	2,800
39	(R100) French studies	2,000
40	(X310) Academic studies in nursery education	3,300
41	(X320) Academic studies in primary education	1,400
42	(K230) Building surveying	1,200
43	(P500) Journalism	4,500
44	(I100) Computer science	9,800
45	(M200) Law by topic	8,400
46	(M100) Law by area	6,400
47	(Q100) Linguistics	1,100
48	(N820) Event management	2,600
49	(H300) Mechanical engineering	5,400
50	(K100) Architecture	5,400

Source: O*NET, ONS, HESA, Deloitte analysis

But how does where you come from affect subject choice and utility? Figure 13 shows the relative popularity of different subject areas for the most disadvantaged and most advantaged students, from POLAR quintiles 1 and 5, respectively.

Figure 13. Relative popularity of different subjects for graduates from the most disadvantaged and most advantaged backgrounds (2014-15)



Source: HESA, Deloitte analysis

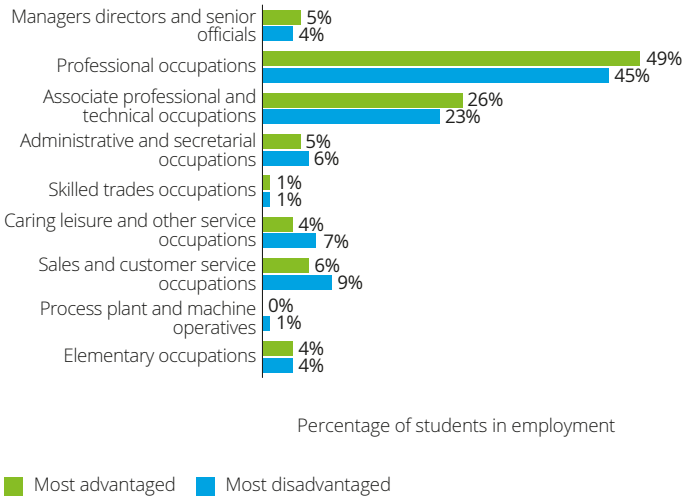
Although the differences are relatively minor, Figure 13 shows that a greater proportion of students from the most disadvantaged backgrounds study education and subjects allied to medicine than their more advantaged peers. Conversely, they are less likely to study medicine, a number of science and engineering-related subjects, languages and historical and philosophical subjects.

Employment rates for the most disadvantaged and most advantaged students also vary by subject area. For example, six months after graduation, 100 per cent of disadvantaged students studying veterinary sciences were in full-time employment, primarily working and also studying, or were due to start work. This compares with 88 per cent of the most advantaged students of the same subject. In fact, disadvantaged students were more successful than their more advantaged peers at finding employment if they studied subjects allied to medicine, law, historical and philosophical studies, or combined subjects. They were significantly less likely to find employment than their peers if they studied education, business and administrative studies, mass communication and documentation, or agriculture.

The subjects studied also have an impact on the occupations (and sectors of the economy) that graduates from different backgrounds enter. Figures 14 and 15, respectively, show the proportion of students from POLAR3 quintiles 1 and 5 entering the major occupational and industry groups six months after graduation.

…a greater proportion of students from the most disadvantaged backgrounds study education and subjects allied to medicine than their more advantaged peers.

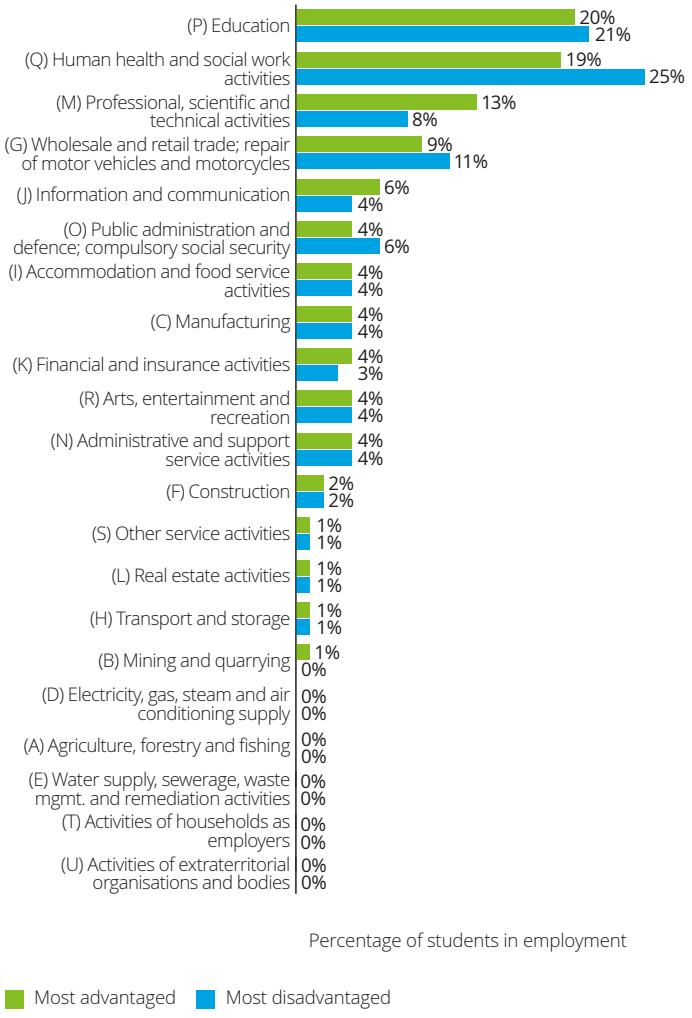
Figure 14. Top occupational destinations for the most disadvantaged and most advantaged students (2014-15)



Source: HESA, Deloitte analysis

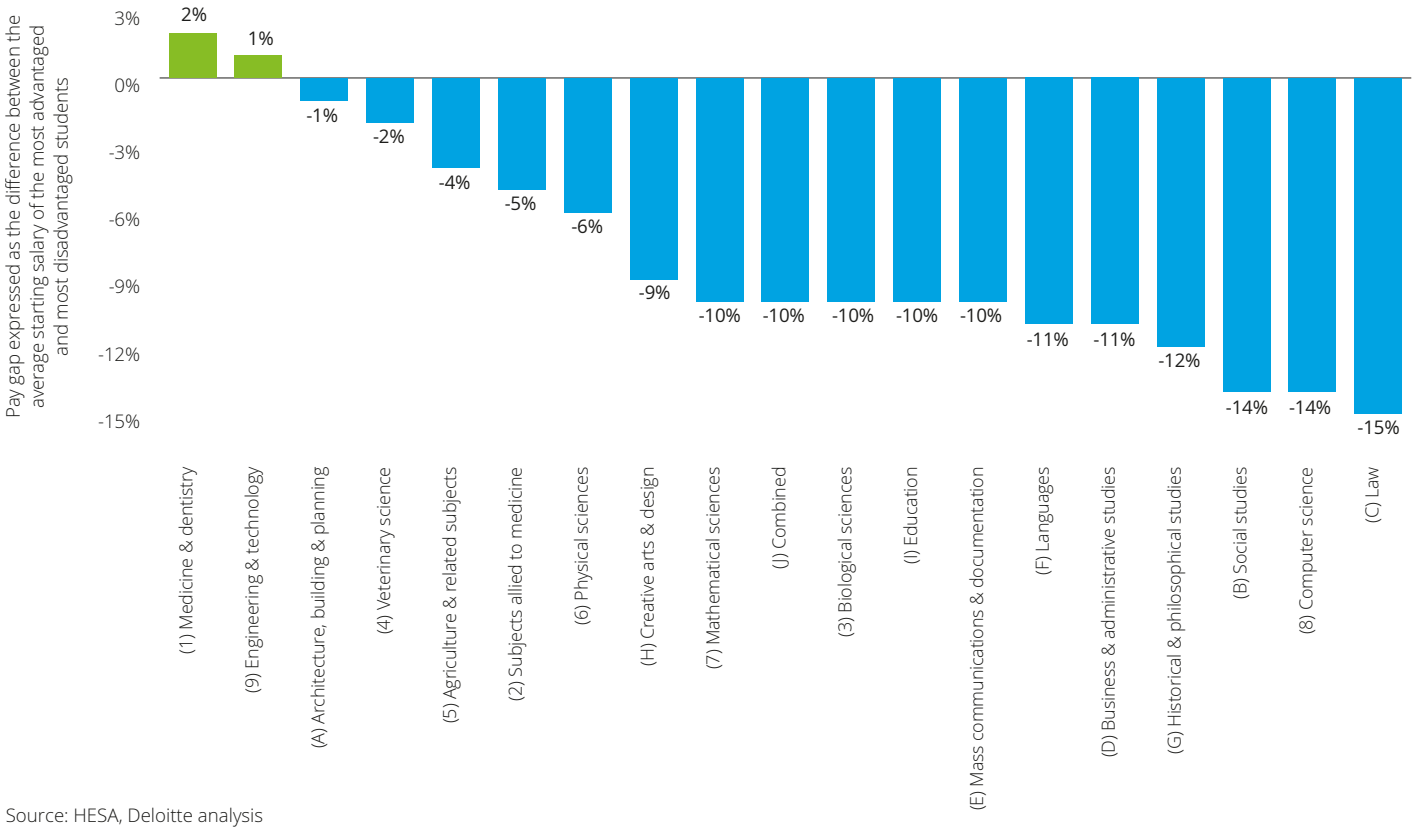
Figures 13, 14 and 15 highlight relatively significant differences in the nature of employment of young people from the most disadvantaged communities. The choice of subject also has a significant effect on salaries earned by graduates six months after graduation. Figure 16 (overleaf) shows the gap between starting salaries for the most disadvantaged and most advantaged students by subject area.

Figure 15. Top industry sector destinations for the most disadvantaged and most advantaged students (2014-15)



Source: HESA, Deloitte analysis

Figure 16. Gap in starting salaries between the most disadvantaged and most advantaged students by subject area (2014-15)



Source: HESA, Deloitte analysis

Our analysis of the 2014-15 Destination of Leavers Survey data suggests that the average gap in starting salary between the most disadvantaged and the most advantaged students is 9.6 per cent. However, for students of law, computer science and social studies subjects, the gaps are 14.8 per cent, 13.8 per cent and 13.5 per cent, respectively, in favour of students from more advantaged backgrounds. In contrast, the most disadvantaged students of medicine and dentistry, and engineering and technology subjects, typically earn more than their least disadvantaged peers – albeit that the differences are relatively minor, at 2 per cent and 1.4 per cent, respectively.

...the average gap in starting salary between the most disadvantaged and the most advantaged students is 9.6 per cent.

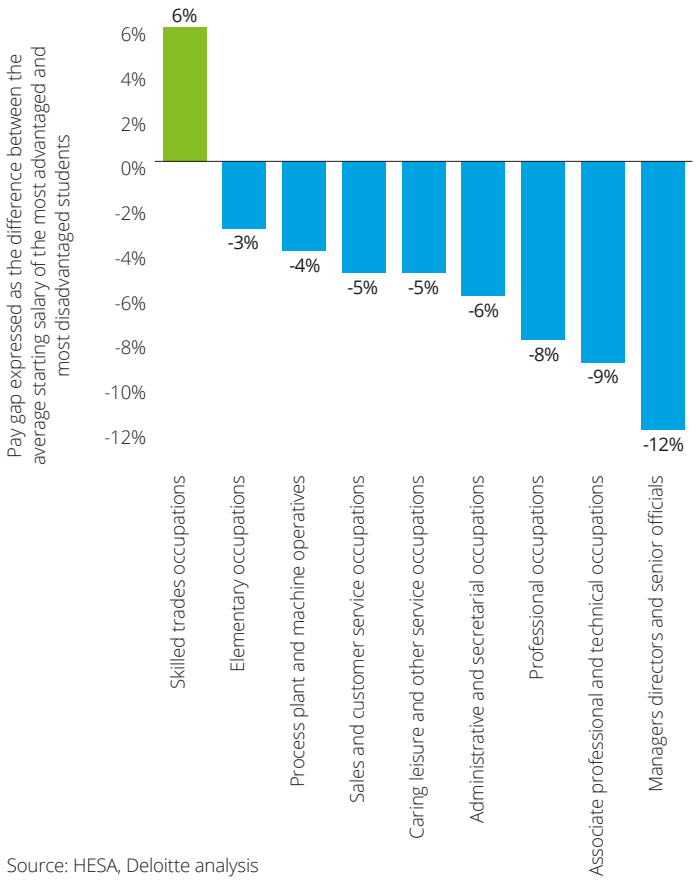
Significant pay differences occur across occupations, too. Figure 17 shows the difference in starting salaries for graduates entering each of the main occupational groups.

Once again, our analysis shows that remuneration for the most disadvantaged students is lower than for their advantaged peers in every occupational group except the skilled trades. For managers, directors and senior officials, the gap is 11.6 per cent, and in associate professional and technical occupations it is 8.8 per cent.

The most striking aspect of our analysis of the 'social mobility pay gap' is its consistency: in almost every case, the most disadvantaged young people who graduate from the same subjects and enter the same professions are paid less than their more advantaged peers. The results echo those of the London School of Economics (LSE) in 2015, which suggested that the difference in earnings between workers from 'elite occupational origins' and the 'long-range upwardly mobile' is approximately £130 per week.[54] As the LSE said in its report, "these findings indicate that even when the upwardly mobile are successful in entering the higher professions they often fail to achieve the same levels of success (in terms of earnings, at least) as those from more privileged backgrounds." And, just as we have found greater pay parity for students of engineering and technology, so too did the LSE find that the gap remained negligible for professional engineers.

...our analysis shows that remuneration for the most disadvantaged students is lower than for their advantaged peers in every occupational group except the skilled trades.

Figure 17. Gap in starting salaries between the most disadvantaged and most advantaged students by occupation (2014-15)



Source: HESA, Deloitte analysis

Perhaps the gap in pay is a reflection of a difference in skills between the most and the least advantaged students? If we consider all of the jobs taken by graduates in the 2014-15 cohort, we can quantify how well the occupations fulfilled by people from the most disadvantaged communities address the top 25 'essential talents' from Figure 9. This analysis is shown in Figure 18.

The simple fact remains, however, that the skills and talents exhibited by the country's most disadvantaged young people today are the same set of skills and talents that the economy as a whole will find increasingly important in the future. These are the skills that employers are looking for and are hardest to find.

Surprisingly, perhaps, Figure 16 demonstrates that the most disadvantaged young people tend to enter occupations in which the essential talents are more important than the occupations entered by the most advantaged people. Knowledge of customer and personal service, for example, is considered to be 2.6 per cent more important in jobs taken by the most disadvantaged people. Social perceptiveness is considered to be nearly three percent more important.

Despite these apparent benefits, our analysis shows that just over 21 per cent of the jobs taken by the most disadvantaged people in 2014-15 are at high risk of automation in the next 10 to 20 years, assuming that the graduates remain in their original employment for that long. This compares with approximately 18 per cent of jobs taken by the most advantaged graduates, and the UK economy-wide average of 35 per cent. For the time being, at least, having a degree qualification reduces the risk of automation considerably, but it appears that graduates from more privileged backgrounds have some additional immunity.

The simple fact remains, however, that the skills and talents exhibited by the country's most disadvantaged young people today are the same set of skills and talents that the economy as a whole will find increasingly important in the future. These are the skills that employers are looking for and are hardest to find. The testaments to this are the growing number of job vacancies in the UK – currently over 750,000 in July 2016, according to the ONS – and the difficulties that graduates of some subjects have in finding jobs.[55] The skills, abilities and areas of knowledge that seem to be exhibited by the most disadvantaged young people are precisely the ones that help to make workers adaptable to change, and will help to create a competitive advantage for businesses as technology continues to shift the nature of employment.

Figure 18. Importance of essential talents in the occupations entered by the most disadvantaged and most advantaged students (2014-15)

Rank 2015	Essential talent	Standardised importance score for POLAR quintile 1 (most disadvantaged)	Standardised importance score for POLAR quintile 5 (most advantaged)	Difference between standardised importance scores for quintile 1 and quintile 5
1	Oral comprehension	0.562	0.558	0.8%
2	Problem sensitivity	0.520	0.513	1.4%
3	Oral expression	0.563	0.559	0.7%
4	Near vision	0.496	0.494	1.4%
5	Deductive reasoning	0.506	0.508	-0.4%
6	Critical thinking	0.509	0.509	0.0%
7	Speaking	0.520	0.516	0.7%
8	Information ordering	0.474	0.471	0.6%
9	Monitoring	0.486	0.478	1.5%
10	Active listening	0.530	0.525	1.0%
11	Speech recognition	0.500	0.492	1.7%
12	Speech clarity	0.504	0.496	1.6%
13	Category flexibility	0.451	0.451	0.0%
14	English language	0.553	0.553	0.0%
15	Coordination	0.468	0.458	2.0%
16	Inductive reasoning	0.493	0.494	-0.3%
17	Written comprehension	0.526	0.528	-0.5%
18	Reading comprehension	0.521	0.524	-0.5%
19	Social perceptiveness	0.493	0.479	2.9%
20	Judgement and decision-making	0.466	0.469	-0.6%
21	Time management	0.446	0.443	0.6%
22	Customer and personal service	0.568	0.553	2.6%
23	Selective attention	0.421	0.414	1.7%
24	Written expression	0.504	0.506	-0.4%
25	Complex problem-solving	0.451	0.454	-0.8%

Knowledge Skill Ability

Source: O*NET, ONS, HESA, Deloitte analysis

Challenges yet to be overcome

"Universities have a critical role, but they do not hold the panacea to inequality in progression. In fact, the boundaries of universities' roles in combatting social immobility are rarely voiced; entrenched inequalities in the school and college sector are inherited and, unless employers make greater progress, gains in higher education policy risk being annulled after graduation."

***Inspiring Policy: Graduate Outcomes and Social Mobility*, The Bridge Group**[56]

Over the last decade, the social mobility debate has rightly focused on overcoming barriers to education and employment for disadvantaged young people. Now, the debate needs to shift into a new gear to ensure that the changes being wrought in our economy by technology – both in terms of job destruction and creation – do not create further obstacles to the UK's economic and social progress. In particular, we need to ensure that our future workers have the talents we will need, and that we are tapping into the potential that exists in all of the UK's young people – not just the most privileged.

The reality is that social mobility is driven by a very complex interplay of factors, some of which create inherent disadvantages for children and young people from a very early age. For example, research from Stanford University in the US and the Sutton Trust in the UK on the use of the English language – which represents one of the most critical talent areas for the workforce – shows that children can already be many months behind as early as aged only two or three.[57, 58]

Navigating this increasingly complex and difficult landscape demands as much engagement from businesses as it does from policymakers and educators. Below, we set out some of the challenges that these different stakeholders face.

Businesses

- Do businesses appreciate and understand the technology-driven shifts affecting their markets, and thus the demand for essential skills and talent?
- Are businesses doing enough to market themselves to young people from disadvantaged backgrounds? Our experience has been that if young people are not aware of a business, they won't apply for its jobs.
- For businesses using academic contextualisation as part of their recruitment approach, is more effort needed to promote students' understanding of what this technique is, and to dispel the myth that you need straight As and a first-class degree to access the top jobs?
- Should businesses invest more in outreach programmes, such as engaging students from younger age-groups, supporting school leavers, and providing university placements and apprenticeships to help young people understand and develop essential skills, including soft skills? Research by the Careers & Enterprise Company highlights the importance of providing better information and support at the key points at which young people make decisions.[59] How can businesses do more to support decision-making by young children, teenagers and school leavers from communities in low participation areas?

- Are businesses measuring and monitoring what they are doing in promoting and offering social mobility, so that they can drive improvements? How should this be linked to initiatives from the government, such as the Social Mobility Index?[60]

- Are businesses aware of the impact of unconscious biases and rigid selection criteria on the employment chances for disadvantaged young people? Are recruitment processes sufficiently sophisticated to identify the young people with the potential to develop essential skills to a very high standard?

Educators

- How can educators forge stronger relationships with businesses and future employers to provide opportunities for students to learn more about the careers and skills of employees?

- How can educators improve communication with students so that young people become better informed about the skills they will develop and the career paths they can follow as a consequence of the subject choices they make?

- Should higher education providers more clearly promote their use of contextual information in their application processes, to encourage more students from disadvantaged backgrounds to apply?

- Should higher education providers place more emphasis on general purpose and foundational skills, not just increasing academic specialisation?

- Can technology improve the way that essential talents are taught in schools, colleges and universities?

- Can higher education providers do more to provide pastoral support for disadvantaged students to increase the 'sense of belonging' and reduce drop-out rates?

Policymakers

- Should new regulations encourage greater use of contextual information in recruitment?

- How can the government build on existing good work to improve transparency around the recruitment and progression of disadvantaged young people?

- Should policy place greater emphasis on vocational education and employment for the professions rather than on academic qualifications?

In particular, we need to ensure that our future workers have the talents we will need, and that we are tapping into the potential that exists in all of the UK's young people – not just the most privileged.

Conclusion: Unleashing the employment potential

"For our economy, it is important that key sectors … use the full range of talent available to them, in order to ensure innovation and entrepreneurialism, and reduce the negative consequences of homogeneity."

Social Mobility Commission[61]

For many years, the imperative to ensure fair and equal access to education and employment has been fuelled by a desire to cure a social injustice rather than create an economic good. This view is changing rapidly, however, as it becomes increasingly clear that Britain's post-Brexit future depends upon continued growth in the workforce – and, in particular, ensuring that the supply of talent meets the demands of a more digital age.

Deloitte's new study highlights two inherent complexities in achieving this goal: first, despite ongoing efforts to improve access for disadvantaged young people, inequalities in access to higher education and professional employment remain persistent and deeply entrenched; and, second, technology-driven shifts in the economy are leading to what appears to be a paradoxical demand for non-technical skills and talents. Solving either one of these problems on their own may exacerbate the effects of the other.

If, for example, higher education providers are successful in attracting and enrolling more disadvantaged students onto their courses but do not change their focus on 'hard' technical skills, the students will not necessarily learn the essential talents needed for working in the machine age. Nor will it mean that those who do graduate will have any greater chance of employment in high-skills occupations or the professions. Equally, if higher education providers adapt their courses to help students develop the essential talents but do not improve participation among disadvantaged young people, then technologies like artificial intelligence, robotics and big data will eat even further into the non-graduate jobs that many people have no choice but to take. In either case, large swathes of the workforce will be left unable to adapt to work alongside the machines or to find fulfilling employment.

It is impossible to predict accurately the make-up of the economy in the future. But our new research suggests that we need to tackle participation and talent simultaneously. This means encouraging and supporting more young people from disadvantaged backgrounds to enter higher education, engaging with them throughout their study so they can develop an informed view of employment options and find answers to their fundamental questions. And, once they graduate, it also means providing them with fair opportunities for employment, which reward the essential human talents they will possess.

There is no question that there are challenges here to be addressed by educators, which reinforces the need for further debate and action among this stakeholder group. But we should not underestimate the positive contribution that both policymakers and businesses can also make. Indeed, it will be impossible to prepare the next generation of workers and business leaders without all three communities working together to effect change.

In a recent article for *The New York Times*, author and New York University Professor Arun Sundararajan wrote, "Eventually, whether technological progress will increase or diminish human employment has always been a race between education and technology. The benefits of digitally enabled automation can thus be amplified by a reinvention of our educational system. As the cognitive capabilities of machines expand, the economy will need less STEM education in its workforce, and more design thinking, entrepreneurship and creativity instead. And perhaps more caring, empathy and compassion as well, human qualities most likely to differentiate us from the machines we compete with for the jobs of the future."[62]

Ultimately, changing our policies, education system and business culture is not just about making access to education and employment fairer. It is also about tapping into the hidden sources of talent that already exist within the population of young people. Alongside technologies like robotics, big data and artificial intelligence, improving the supply of essential human talents will help to meet the shifting demands of our economy and position the UK for continued long-term growth. Whatever side of the debate you fall on, that is the one incontrovertible truth.

Ultimately, changing our policies, education system and business culture is not just about making access to education and employment fairer. It is also about tapping into the hidden sources of talent that already exist within the population of young people. Alongside technologies like robotics, big data and artificial intelligence, improving the supply of essential human talents will help to meet the shifting demands of our economy and position the UK for continued long-term growth.

Endnotes

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