

TASO

Transforming Access
and Student Outcomes
in Higher Education



Report:

What works to reduce equality gaps in employment and employability?

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1. INTRODUCTION

1.1 OVERVIEW OF THIS REPORT

Higher and further education providers are increasingly held to account for how their graduates fare in the job market. This evidence review explores the existing evidence on how education providers can improve labour market outcomes for graduates who belong to disadvantaged groups.

In this report we review evidence from three distinct sources to answer the following research questions:

- Data analysis to **understand the context**. What are the labour market outcomes for graduates from disadvantaged backgrounds and how do they compare to those for non-disadvantaged graduates?
- Literature review to gather **evidence of what works**. Which programmes does the technical and academic literature suggest are effective in improving labour market outcomes for disadvantaged graduates?
- Sector consultation to explore **insights from practice**. What do practitioners and experts working in the field of graduate careers and employment report about their experiences of delivering and evaluating programmes for students from disadvantaged backgrounds?

We begin by defining the key concepts used in this report and offering an executive summary of our findings. In Section 2, we describe and compare the labour market outcomes for disadvantaged graduates and offer tentative explanations for these outcome gaps. In Section 3, we set out the findings from our evidence review and the methodology we used. Section 4 covers our method for conducting consultations and the findings from these. Section 5 pulls together these different strands of data to provide an overall characterisation of the current evidence base and Section 6 concludes with recommendations for education providers and researchers.

1.2 CONCEPTUALISING DISADVANTAGE AND EMPLOYABILITY

Our report is focused on graduates from disadvantaged groups. We define these demographic groups following guidance from the Office for Students (OfS), which defines 'disadvantaged' young people based on their

rates of participation in Higher Education (HE) and their outcomes in the graduate labour market (OfS, 2020). Broadly, this categorisation includes graduates who are from:

- Families of low socioeconomic status
- Female gender
- Black, Asian and minority ethnic (BAME)
- Disability groups
- Low participation areas
- Among the first in their family to attend HE
- Overseas or with unsettled migration status
- Carers
- Care leavers
- Mature
- Lesbian, gay, bisexual, transgender or queer (LGBTQ+)

We recognise that disadvantage is complex and is not deterministic. A graduate who falls into one of these disadvantaged groups may, for various extrinsic and intrinsic factors, experience better labour market outcomes than a counterpart from a relatively advantaged group. However, our research focuses on average differences between groups of graduates as a means of tracking disadvantage.

Throughout our report, we use the term 'employability' to refer to an individual's ability to secure and prosper in employment. We acknowledge that myriad factors may influence an individual's employability, including the individual's personality traits, social networks and the overall level of demand for labour in the economy at a given time. Our report touches on these factors but is broadly focused on the relationship between membership of a disadvantaged group and labour market outcomes, as well as those activities undertaken by HE providers to improve these outcomes.

The report also investigates and includes evidence on programmes that support progression into further study, including postgraduate education. These findings are primarily summarised in Sections 3.3.2 and 3.3.4.

We recognise that education providers offer much that improves the careers and employability outcomes of their students even when this is not the explicit intention of those activities. For example, sports, volunteering opportunities, access to facilities to live away from home and academic attainment may all contribute to positive labour market outcomes. However, our report focuses almost entirely on programmes run with the specific intention of improving career and employability outcomes.

1.3 EXECUTIVE SUMMARY

1.3.1 Data Analysis – gaps in graduate outcomes

- Importantly, the dataset used does not include information on part-time work or unemployment. These potentially key factors in variations in earnings remain unaccounted for, which may disproportionately skew the earnings gap for some demographics.
- Earning gaps in graduate earnings emerge immediately after graduation and increase further over time. One year after graduation, there is an £11,300 gap between the lower and upper quartile. Ten years after graduating, this gap is equal to £24,100.
- Three years after graduation, there are significant differences according to the subject studied and the university attended. A £20,000 gap can be seen between the 10 higher education providers (HEPs) with the highest-earning graduates and the 10 with the lowest.
- There are also significant earnings gaps after three years between graduates from different ethnic groups, with a gap of around £4,800 between the group with the highest earnings (graduates of Indian background) and the group with the lowest earnings (graduates of Pakistani background). There is a £4,500 gap in earnings between graduates from London and those from the North East.
- Many of these gaps continue to widen in the 10 years following graduation. The gap between the highest- and lowest-earning ethnic groups increases from 16% one year after graduation to 24% nine years later. Similarly, the earning gap between graduates from London, the South East, the East of England and the rest of England grows from 10% to 16% over the same period.
- The trajectory of the gender earnings gap is particularly striking. In the year following graduation, male graduates earn 8% more than their female peers, but in the following nine years this grows to a gap of 32%.
- Existing research highlights the importance of course (subject and institution) choice in driving some of the earnings differences between groups. Differences in subject choices can explain a substantial amount of the gap by ethnicity, while provider choice is linked to the gap between

graduates from more and less disadvantaged backgrounds. Lower average prior attainment – e.g. at A-level and in General Certificates of Secondary Education (GCSEs) – also appears to be a driving factor behind the lower average earnings of graduates from disadvantaged backgrounds.

- Subject choice contributes to the initial differences in earnings between male and female graduates. However, as graduates age, a larger proportion of this gap is explained by other factors, such as differences in parenting responsibilities, hours worked, the propensity to ask for pay rises or apply for promotions, and labour market discrimination.

1.3.2 Evidence review – literature

- We searched suitable literature using the Education Resources Information Center (ERIC) to identify suitable literature on effective programmes run by HEPs to improve the career and employment outcomes of graduates.
- 35 papers were selected as suitable for our literature review, including:
 - 23 empirical studies
 - 10 narrative studies
 - 2 causal studies.
- Nearly all the studies provide ‘emerging evidence’, with a minority providing ‘medium-strength’ evidence. Just under one-third of studies were run with samples of students from disadvantaged groups.

Work experience:

- ‘Work experience’ covers a wide range of interventions that provide students with exposure to industry and employment. It includes ‘internships’ where students are placed in industry for a short period of time, ‘sandwich courses’ where students alternate between classroom instruction and placements in industry, and part-time jobs.
- Work experience is the most well-evidenced programme, with six quantitative studies showing a strong association between participation in work experience and better graduate outcomes.
- Multiple smaller work experience opportunities distributed throughout an HE course appear to be more beneficial than larger single blocks of experience. The strategic placement of work experience participants with employers seeking long term hires can also enable students to find employment at a placement organisation.

- The signalling power of work experience in CVs and applications means that graduates need to be supported to communicate the work experience they complete.

Information, advice and guidance (IAG):

- IAG is the provision of resources to students to help them understand their career options and make effective decisions. It can take many forms, including career counselling, talks, seminars or workshops related to employment and employability. IAG may also be offered through relevant documents, websites and online tools.
- Multiple papers argue for the positive impact of IAG.
- Importantly, a meta-analysis shows that a career counselling approach to IAG has a strong association with students' knowledge of and readiness for navigating the job market.
- One quantitative study provides evidence that the use of IAG to find job opportunities is positively associated with earnings and job satisfaction five years after graduation. However, it does not control for individual differences in motivation.
- Finally, a causal study shows that engagement in IAG improved the progression of disadvantaged students into postgraduate education by 22%.

Technology-based interventions:

- Our review identified four kinds of innovative technology-based solutions that HEPs may offer to improve career and employment outcomes. Most of these are early in their life cycle, but the studies offer proofs of concept that may be pursued for further research.
 - Work simulations create virtual environments that allow students to acquire the skills they would gain through work experience in a more controlled and directable environment and at scale.
 - Commercially available video games can improve students' employability skills, such as communication, teamwork and problem-solving skills.
 - E-Portfolios may help mature graduates 'show' rather than 'tell' their achievements and experiences to employers.
 - Automated curriculum vitae (CV) analysers can be developed and deployed for students in specific subjects to allow quality feedback on CVs to be given at a greater scale than if using academic staff for assessment.

Teaching employability skills:

- 'Employability Skills' are a range of competencies deemed necessary for success in securing and retaining employment. While the evidence indicates that these skills can be honed through HE, there is limited evidence of the link between these skills and improved career outcomes.
- A quantitative study finds that offering sports and volunteering opportunities can help HE students develop skills that make them employable; such as networking, information gathering, communication skills and self-motivation.
- Two quasi-experimental studies provide evidence that the explicit teaching of these skills is not effective in improving the career and employment outcomes of students. Some HEPs conduct a content analysis of job adverts or student surveys to identify the skills that will best support their students in the current job market. They then build their instruction around these skills. Subject-specific employability skills programmes can be effective in improving employment outcomes, although high-quality evidence on their impact remains lacking.
- Emerging evidence suggests that interventions delivered by HEPs can modify psychological competencies that are associated with positive careers and employment outcomes. For instance:
 - 'Career adaptability' may be improved to make graduates better at seeking and moving between jobs.
 - 'Psychological capital', defined as the ability to know and play to one's strengths and weaknesses, is associated with employability skills such as teamwork, communication and adaptability.

General interventions targeted at disadvantaged groups and delivery considerations:

- Stakeholder consultations with students with autism reveal their preference for work experience to prepare for the working world but also their concerns that employers may be hesitant to take them on due to their disability. Students with autism want their education providers to build close partnerships with employers and to act as champions in communicating their skills and value to facilitate offers of work experience. A combination of work experience with an employer and job simulation appears to be effective in improving their employment prospects, according to a systematic review.

- There is little evidence available for students with physical disabilities, although one study provides suggestive evidence that disabled students can also be supported into work through job simulation training. Being partnered with mentors with similar disabilities who are already in work can improve students' sense of self-efficacy and motivation in seeking employment after graduation.

1.3.3 Consultations

- We consulted 27 practitioners and experts working on careers and employability programmes. We summarised the survey findings with descriptive statistics and conducted a thematic analysis of the focus group findings.
- The majority of respondents were from post-1992/metropolitan universities or Russell Group universities. Our sample had low representation from the FE sector.
- The disadvantaged groups most likely to be targeted for career interventions are learners who are BAME, care leavers, disabled or from a low socioeconomic status background. Targeting is often conducted in conjunction with Widening Participation (WP) teams at a provider level, while some providers use a data-driven approach to identify groups in their student population to target.
- Several education providers express an interest in or a commitment to offering universal provision that is accessible to disadvantaged students, as opposed to targeted programming. This was due to concerns about ensuring equal opportunities, avoiding stigma and the low uptake of targeted programmes. Some providers already deliver mandatory careers programmes for all students or fold provisions into the wider academic curriculum.
- Work experience, employability skills workshops and IAG are the interventions most likely to be targeted at disadvantaged groups. However, providers indicate that less than half the number of students eligible to participate in targeted interventions do so. This is in line with uptake for careers programmes among the wider student population.
- Internships and work experience are believed to be particularly impactful interventions.
- Providers draw on a wide range of information sources (academic and technical literature, students' voices) to decide what programmes to

offer. Of our survey respondents, 82% indicated that their selection of programmes was based on the evaluation of previous interventions. Providers are confident in their knowledge of 'what works' to improve graduate employability, but also recognise that many of the factors that affect these outcomes are beyond their control.

- Providers overwhelmingly evaluate what they offer using student feedback and employment outcome data (typically, outcomes survey data captured around 15 months after graduation as part of the HESA Graduate Outcomes Survey). They use case studies to a lesser extent.
- Data collection after students graduate is a major challenge, making it difficult to capture data on concrete employment outcomes that can be associated with participation in particular programmes.
- The Covid-19 pandemic has forced many providers to innovate and adapt their provision, with many adopting practices such as remote provision that make their services more accessible to disadvantaged students. Practices that have long been considered ineffective, such as career fairs, have diminished in popularity.

1.3.4 Recommendations

Based on the available evidence, we are able to make tentative recommendations to education providers. We underscore that these recommendations are grounded in medium-strength evidence from the literature or from reports of effective practice from careers professionals that we have not rigorously tested. They do not represent the only effective ways of organising and delivering careers and employability provisions.

Overall, the evidence base is relatively weak in terms of causal evidence, particularly that which relates to improving employability outcomes for students from disadvantaged or underrepresented backgrounds. To improve this, we recommend that HE providers:

- Adopt a strategic approach to careers and employability provision that begins with a theory of change specifying desired employment outcomes for students and acknowledging that different groups may experience different barriers to achieving these outcomes. Theories of change should include both intermediate and longer-term behavioural outcomes, as well as subjective measures such as a sense of meaningfulness in work.

- Develop and evaluate employment and careers programmes (work experience, IAG, mock interviews and careers fairs) specifically targeted at reducing gaps in employment outcomes. Of particular focus for research should be graduates who are female, disabled, from certain ethnic backgrounds (Caribbean, White and Black Caribbean, Bangladeshi and Pakistani) or low participation areas. Closer relationships between WP and Diversity and Inclusion teams and their careers services could improve the identification and targeting of these programmes.
- Further explore the impact of sandwich courses and other types of work experience on labour market outcomes for disadvantaged and underrepresented students.
- Develop robust evidence of the impact of IAG provision that involves individuals from similar backgrounds to the students it targets and opportunities for interaction with teachers and lecturers who have spent time in industry. Involving disadvantaged and underrepresented students in the production process could help to ensure that the information provided is relevant to those groups.
- Develop and evaluate alumni or peer mentoring opportunities for disadvantaged and underrepresented students (including specific initiatives to support disabled students).
- Invest in trialling and evaluating innovative, technology-based approaches to careers and employability improvement.
- Design and evaluate the efficacy of approaches to support the uptake of and participation in career and employability services amongst students expected to benefit most from the support available.
- Where universal provision is preferred, HEIs should seek to ensure that they gather data on the social background of participants, and assess whether such programmes tackle equality gaps.
- Run robust trials of different careers and employability programmes across multiple candidate providers to develop the 'what works' evidence base. This increases the rigour of investigation and allows large volumes of comparable data to be captured.
- Support collective learning across the HE sector on what works to reduce employability gaps and, crucially, share new and emerging evidence.



2. DATA ANALYSIS – GAPS IN GRADUATE OUTCOMES

In this section, we consider the available evidence on the gaps in outcomes between different groups of graduates, and what is currently known about the drivers of these gaps.

We begin by describing the datasets used for our analysis and the general challenges faced in tracking graduate employment outcomes at scale. We then share a high level summary of our overall findings on the disparities in earnings between different groups of graduates by demographic, before summarising the findings on disability, gender, ethnicity, free school meal (FSM) eligibility and home region. For each of these groups, we consider how earnings outcomes vary at intervals of three, five and 10 years after graduation. At the end of the section, we review the research on the potential drivers of these gaps.

2.1 METHODOLOGY

The majority of the available data and research on graduate outcomes concerns differences in earnings or employment. This trend towards considering financial outcomes has increased in recent years with the availability of data linking education and tax records (and therefore income and employment). As Longitudinal Education Outcomes (LEO) data from the Department for Education is derived from large-scale administrative, rather than a survey, data sources, it provides a quantity of data unavailable to earlier research efforts.

The availability of the LEO data has enabled researchers to better understand the association between different educational and student background factors, and their subsequent employment outcomes. However, there are drawbacks to the LEO data:

- The data from HM Revenue & Customs (HMRC) that forms part of the LEO dataset does not include information on part-time work or unemployment. These potentially key factors in variation in earnings, therefore, remain unaccounted for. This is particularly important when comparing the earnings of groups who are not equally likely to work part-time (e.g. men and women) or be in employment (e.g. disabled and non-disabled graduates).
- Many other unmeasured factors influence earnings. For example, employers are known to value 'soft skills' such as an individual's ability to collaborate effectively. Factors such as access to social networks and labour market discrimination may also play a part.

- The LEO data currently only extends to around 10 years after graduation, which is only part way through the working life of most graduates. The relationship between earnings and certain educational and background factors may change the longer individuals spend in the labour market.
- The education system and the labour market will have changed since the young people in the LEO dataset graduated, with the changes likely to be more significant the longer they have been in the labour market. For example, the individuals included in the LEO earnings data 10 years post-graduation probably entered the labour market in the summer of 2008, completed their A-levels in the summer of 2005 and completed their GCSEs in the summer of 2003. Contextual factors that influence gaps for recent and future graduates will differ from those affecting past cohorts.
- The LEO data contains no information on broader outcomes such as job satisfaction, wellbeing, health or mental health.

To supplement the LEO data on employment outcomes, we also include published Higher Education Statistics Agency (HESA) statistics on gaps in life satisfaction and whether graduates find their current activity meaningful (for 2018/19 graduates). This data is derived from a HESA survey of graduates that takes place around a year and a half after graduation. This data has its own limitations, including limited breakdowns by different characteristics, smaller sample sizes and a lack of follow-up surveys to consider how these gaps change in the longer term.

Our analysis in the following section (2.2) is based on descriptive differences between groups of students. Unless otherwise stated, the analyses are based on the median earnings of each group in the 2018/19 tax year. UK-domiciled first-degree graduates from English HEPs, alternative providers and FE colleges are included, providing they were in sustained employment in the UK in the 2018/19 tax year. The earnings of unemployed students do not factor in the medians provided. This means that median earnings among demographic groups who experience higher rates of unemployment, such as disabled students, may be higher than if we were to look at the population as a whole.

The descriptive differences shown in Section 2.2 are not causal. For example, we cannot conclude that disadvantaged graduates earn less due to the impact of their disadvantage on their success in the labour market. Nor do we take account of other differences between the groups that may contribute to the gaps. For example, the fact that disadvantaged graduates

have lower prior attainment than non-disadvantaged students may contribute to the earnings gap between these groups.

In Section 2.3, we consider the factors that appear to contribute towards gaps in employment outcomes. We focus on published research derived from recently available LEO data, most of the key research for which was undertaken by the Institute for Fiscal Studies. Much of this research uses a regression approach in order to estimate the conditional gaps between groups once other factors have been controlled for.

2.2 AVERAGE GRADUATE OUTCOMES BY STUDENT CHARACTERISTICS

2.2.1 Graduate earnings after three years by student characteristics

The figures below show the variation in graduate earnings three years after graduation, by education history (Figure 1a) and socioeconomic background (Figure 1b). They demonstrate how certain characteristics are associated with larger gaps (or variation) in earnings than others. For example, the earnings gap between men and women (£2,600) is larger than that between graduates who received FSM while at secondary school (a proxy for economic disadvantage) and those who did not (£1,900). These are raw gaps in earnings, in that they do not control for other differences between groups that may also impact earnings.

There is a significant variation in earnings by provider attended, with a £20,000 gap between the 10 providers with the highest-earning graduates and the 10 with the lowest. Six out of 10 of the providers with the highest-earning graduates are Russell Group universities. Similarly, there is significant variation by subject, with an £18,000 gap between the top and bottom three subjects.

The results that students achieve prior to HE are also associated with broad variations in earnings. Three years following graduation, a student who achieved four or more A grades at A-level earns on average two-thirds (£15,000) more than a student who achieved Business and Technology Education Council (BTEC) qualifications but no A-levels. Variation in earnings by prior attainment will be highly correlated with variation by provider and subject, given that this prior attainment will be a key determinant of the providers and subjects that students are able to access.

There appears to be relatively little difference between the earnings of graduates who studied full-time and those who studied part-time. However, graduates who took a sandwich course, with some time in employment, went on to earn around £6,000 more than the average full-time student. In general, there is also little difference in the earnings of graduates by the age at which they started their studies. The exception is those graduates who were 55 or over, who earned around £10,000 less than their younger counterparts.

The variation in earnings by ethnicity appears similar to that by graduates' home region, with gaps between those with the highest and lowest earnings of £4,800 and £4,400 respectively. We consider these groupings in more detail on the following pages.

Figure 1a: Graduate earnings, after three years, 2018/19, by graduate education background

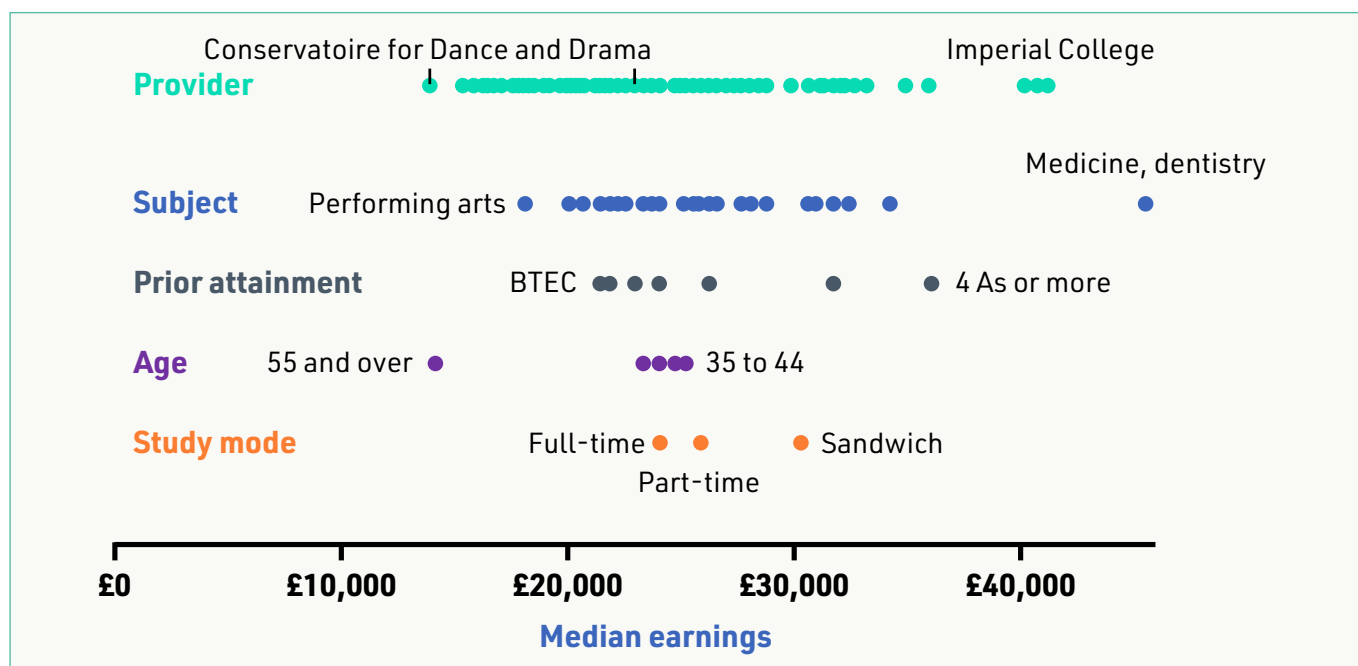
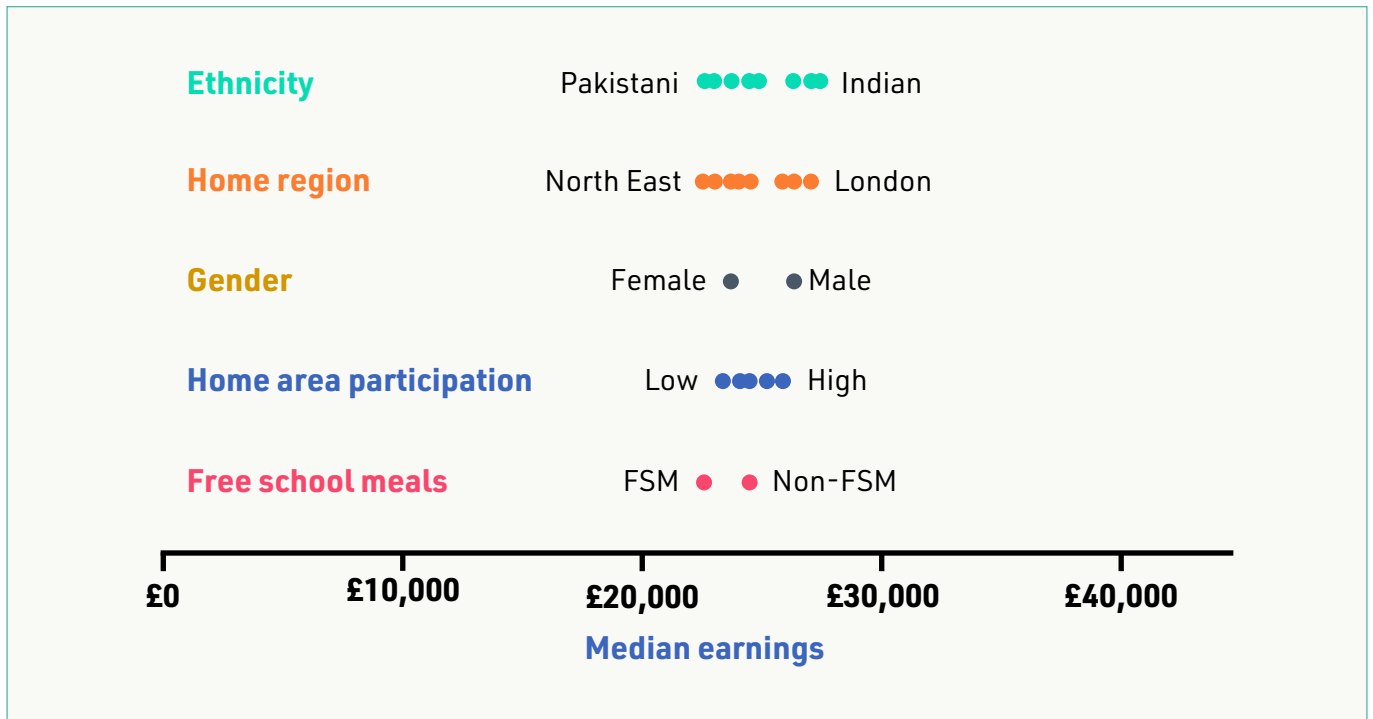


Figure 1b: Graduate earnings, after three years, 2018/19, by graduate socioeconomic background

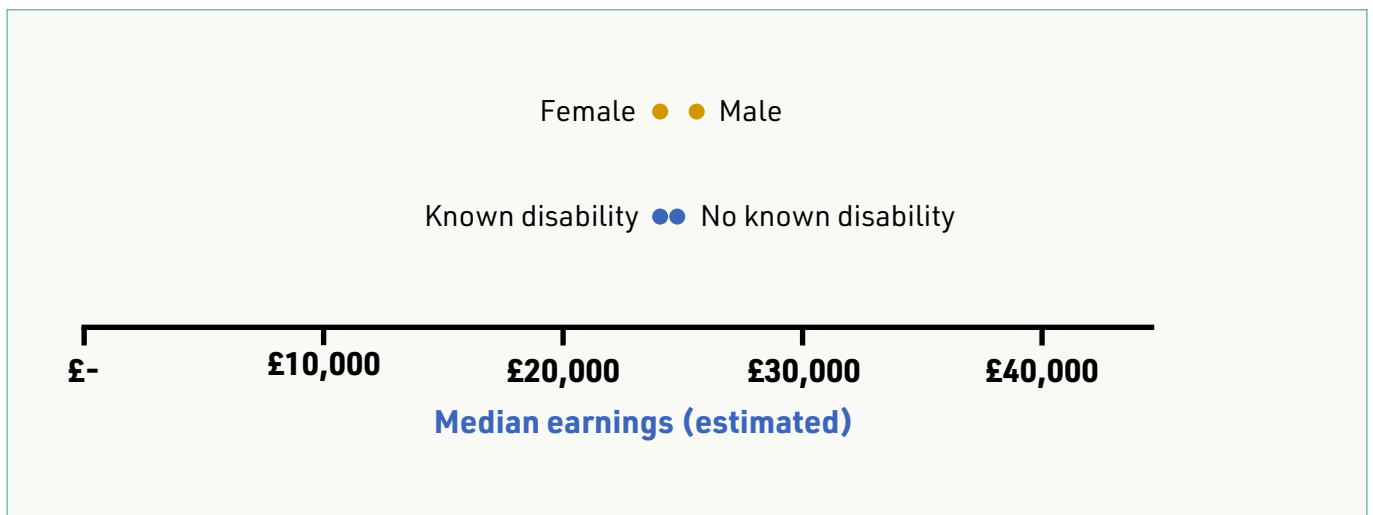


2.2.2 Graduate earnings after 18 months by disability status and gender

Figure 2 shows graduate earnings by disability status and gender. This data is not administrative, but is taken from the HESA survey of graduate outcomes conducted 18 months after graduation. It is therefore not directly comparable to the LEO statistics shown in Figure 1. The gap for male and female students is repeated here to allow the disability gap to be contextualised with the gaps between other groupings.

After 18 months, the earnings gap between graduates with and without a known disability is around £600, over 60% smaller than the gap between male and female graduates. However, it should be noted that these gaps are based on those in sustained employment, and graduates with a known disability are less likely to be in such employment shortly after graduation. Of graduates with no known disability, 78% were in full- or part-time employment 18 months after graduation, compared with 73% of graduates with a known disability. Graduates with a known disability were more likely to be undertaking unskilled activities, such as caring, voluntary or unpaid work.

Figure 2: Graduate earnings (HESA), after 18 months, 2018/19, by disability status and gender*



* The HESA statistics on which this chart is based do not include median earnings, but do include the proportion of graduates in different earnings brackets. The medians shown here are estimated based on an interpolation within the median earnings bracket.

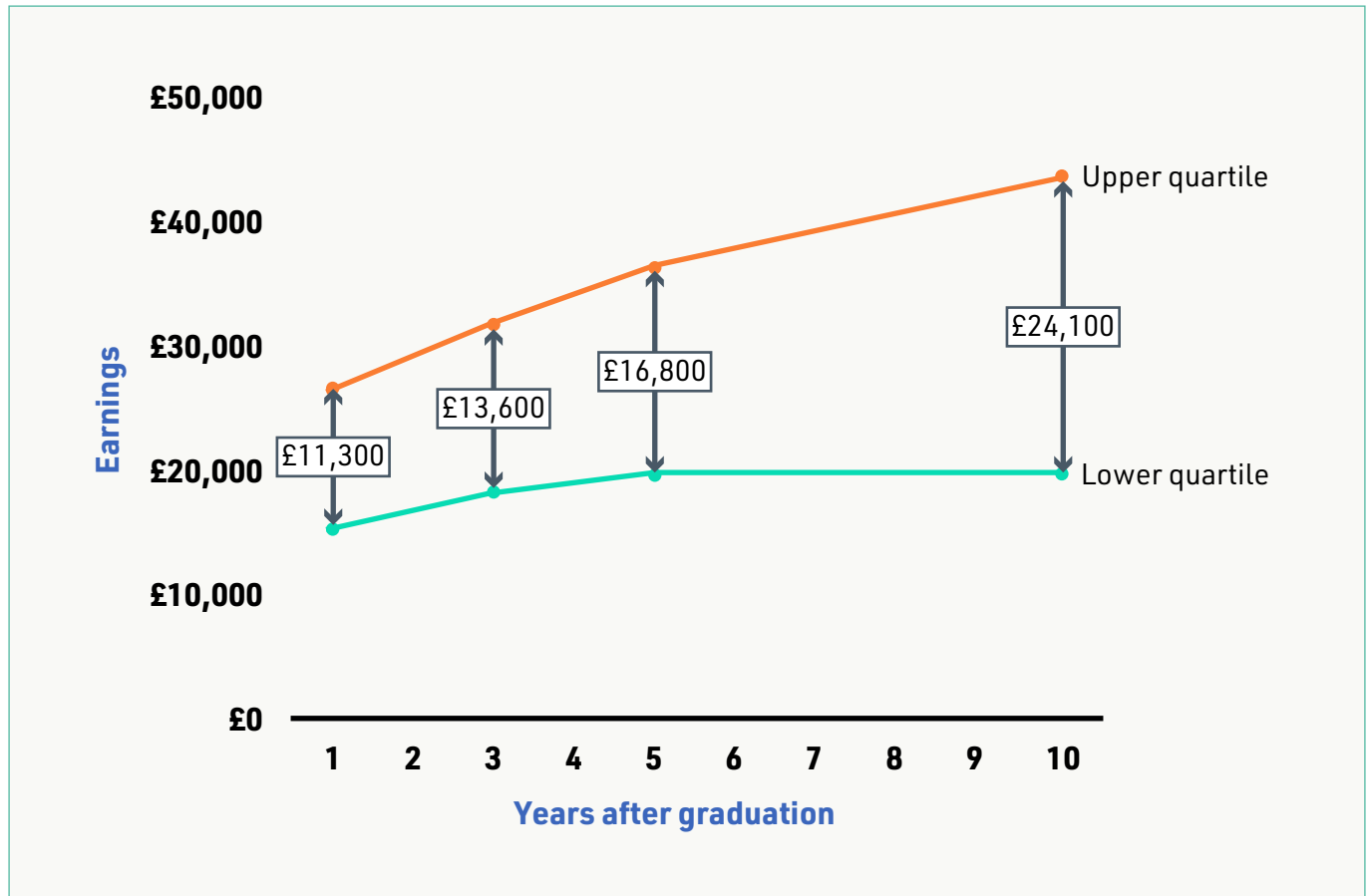
2.2.3 General variations in graduate earnings over time

As graduates spend more time in the labour market, not only does their average salary increase, but the difference between the highest and lowest earners also increases. Figure 3 shows how the distribution of earnings of the middle 50% (the interquartile range) of graduates widens over time. The upper quartile grows faster than the lower quartile in the first five

years following graduation, increasing the gap. This gap then increases still further between five and 10 years after graduation as the earnings of the lower quartile stagnate.

However, while it is true that variation in the earnings of all graduates grows as they spend more time in the labour market, the gaps for certain groupings – in particular, the gender, ethnicity and home region gaps – grow faster than others.

Figure 3: Variation in graduate earnings after one, three, five and 10 years

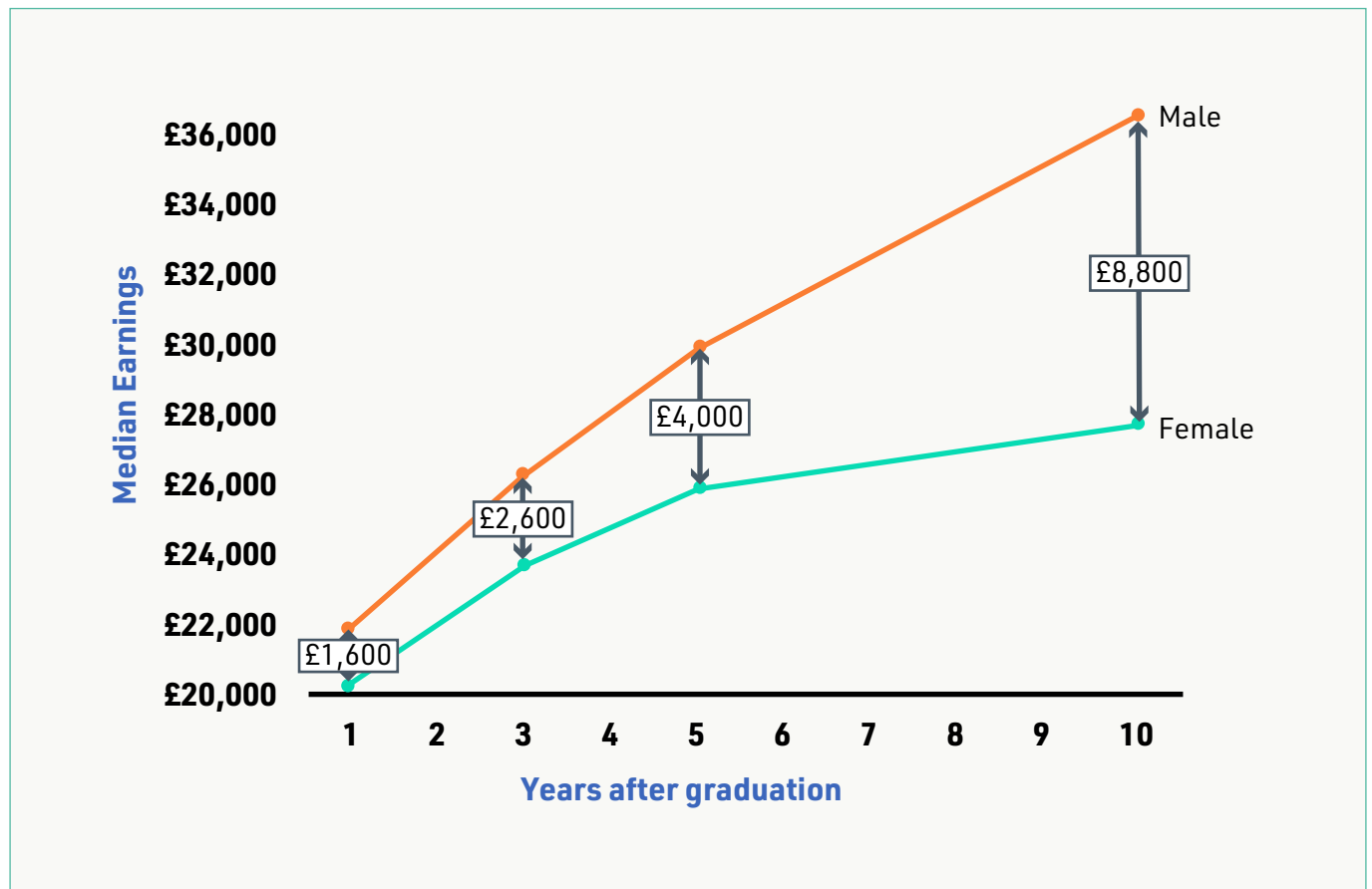


2.2.4 Variations in graduate earnings by gender

Figure 4 shows the evolution of the gap between male and female graduates in the years following graduation. The gap already exists just a year after graduation, with male graduates earning 8% more

than female graduates. It continues to grow in the following four years, with male graduates earning 15% more by five years after graduation and widens further between five and 10 years after graduation, by which point male graduates are earning 32% more than their female counterparts.

Figure 4: Graduate earnings, after one, three, five and 10 years, 2018/19, by gender

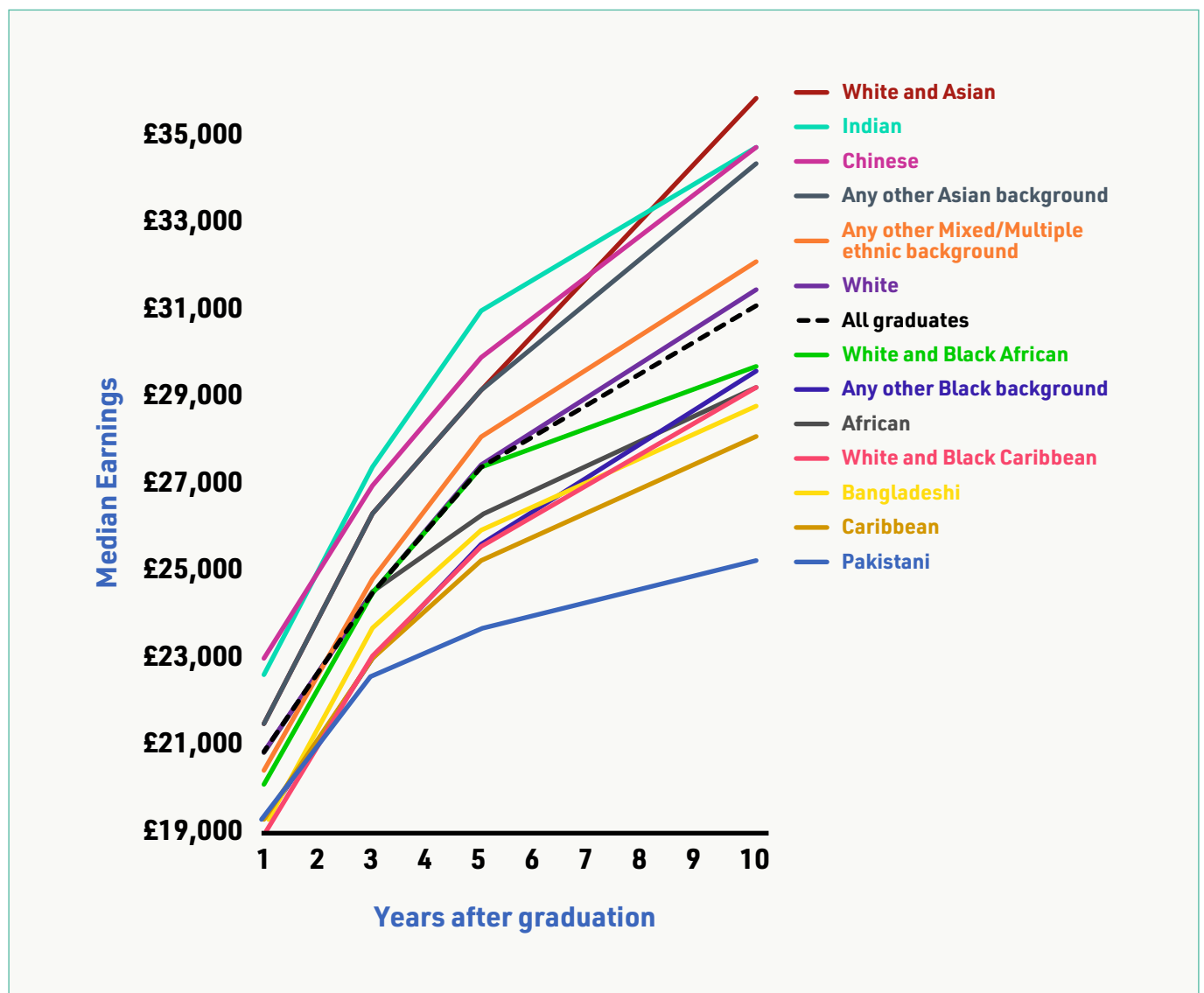


2.2.5 Variations in graduate earnings by ethnicity

Figure 5 shows the changes over time in median earnings by student ethnicity. Soon after graduation, the different ethnicities fall broadly into categories of low average earners (Pakistani, Caribbean, Bangladeshi, White and Black Caribbean and any other Black background), middle average earners (White, African, White and Black African and any other mixed/multiple ethnic backgrounds) or high average earners (Chinese, Indian, White and Asian or any other Asian background).

One year after graduation, the high-earning groups earn 16% more than the low-earning ethnicities. Ten years after graduation, the average earnings of the different ethnicities have diverged significantly. Indeed, the averages for graduates from both *African* and *White and Black African* ethnicities have diverged away from those of other groups who were previously middle earners (*white and any other mixed/multiple ethnic backgrounds*) and are more similar to those of the low-earning groups. The evolution of the average earnings of Pakistani graduates is particularly notable, falling well below even the other low-earning groups. Ten years after graduation, the high-earning groups are earning 24% more than the low-earning groups.

Figure 5: Graduate earnings, after one, three, five and 10 years, 2018/19, by ethnicity

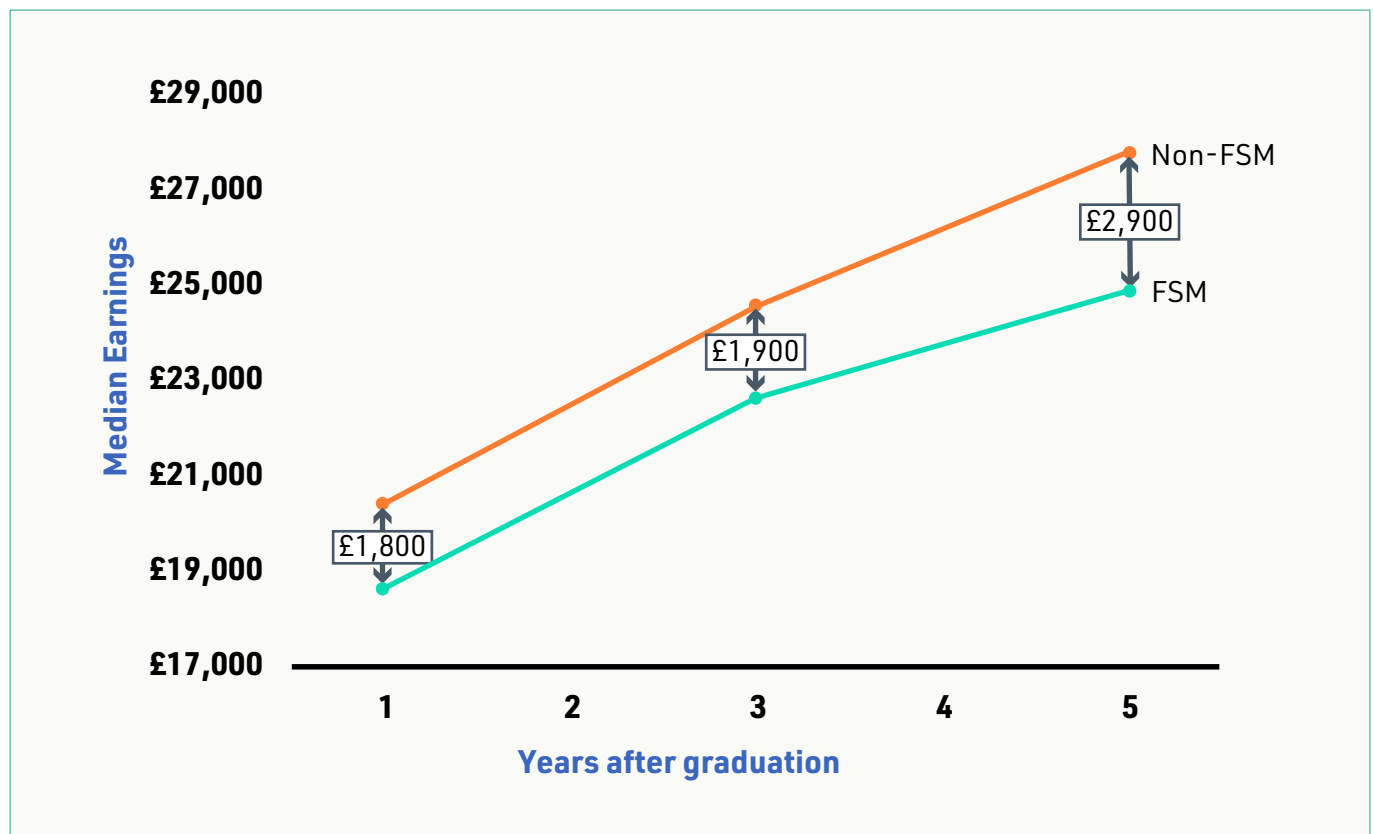


2.2.6 Variations in graduate earnings by FSM eligibility

Figure 6 shows the earnings gap in the five years following graduation between graduates who were in receipt of FSM while at secondary school and those who were not. Data on the earnings of FSM/non-FSM students 10 years after graduation is not published. The FSM/non-FSM gap does not widen as much as

the gaps based on certain other characteristics, such as gender. Indeed, it changes little between one and three years following graduation. In absolute terms, it increases by £100, but in percentage terms, non-FSM students go from earning 10% more than their FSM peers after one year to 8% more after three years. In the following two years, the gap increases by £1,000, such that non-FSM students are earning 12% more on average than their FSM counterparts.

Figure 6: Graduate earnings, after one, three and five years, 2018/19, by FSM eligibility

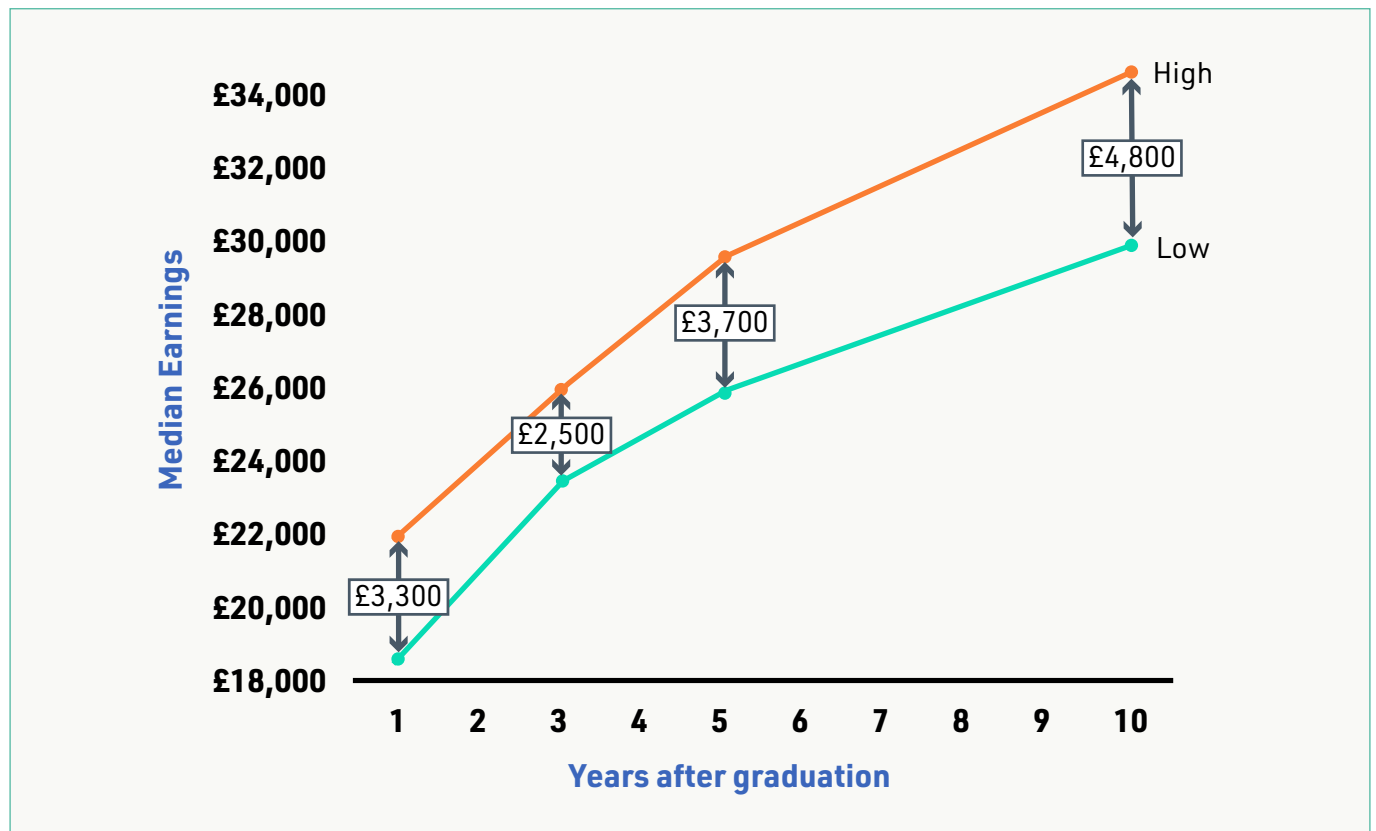


2.2.7 Variations in graduate earnings by home area HE participation (POLAR3)

Figure 7 shows the earnings gap over time between graduates from areas with low levels of participation in HE and graduates from areas with high participation, based on POLAR3. POLAR (Participation of Local Areas classification) is a UK-wide, area-based measure that groups geographical areas according to the proportion

of young people living in them who participate in HE by the age of 19. The gap between students from high and low participation areas decreases in absolute terms between one and three years after graduation. Moreover, although by 10 years after graduation the gap has grown by £1,500 since the year after graduation, in percentage terms it has shrunk: after one year, graduates from high participation areas earn 18% more, but after 10 years they earn just 16% more.

Figure 7: Graduate earnings, after one, three, five and 10 years, 2018/19, by home area HE participation (POLAR3)

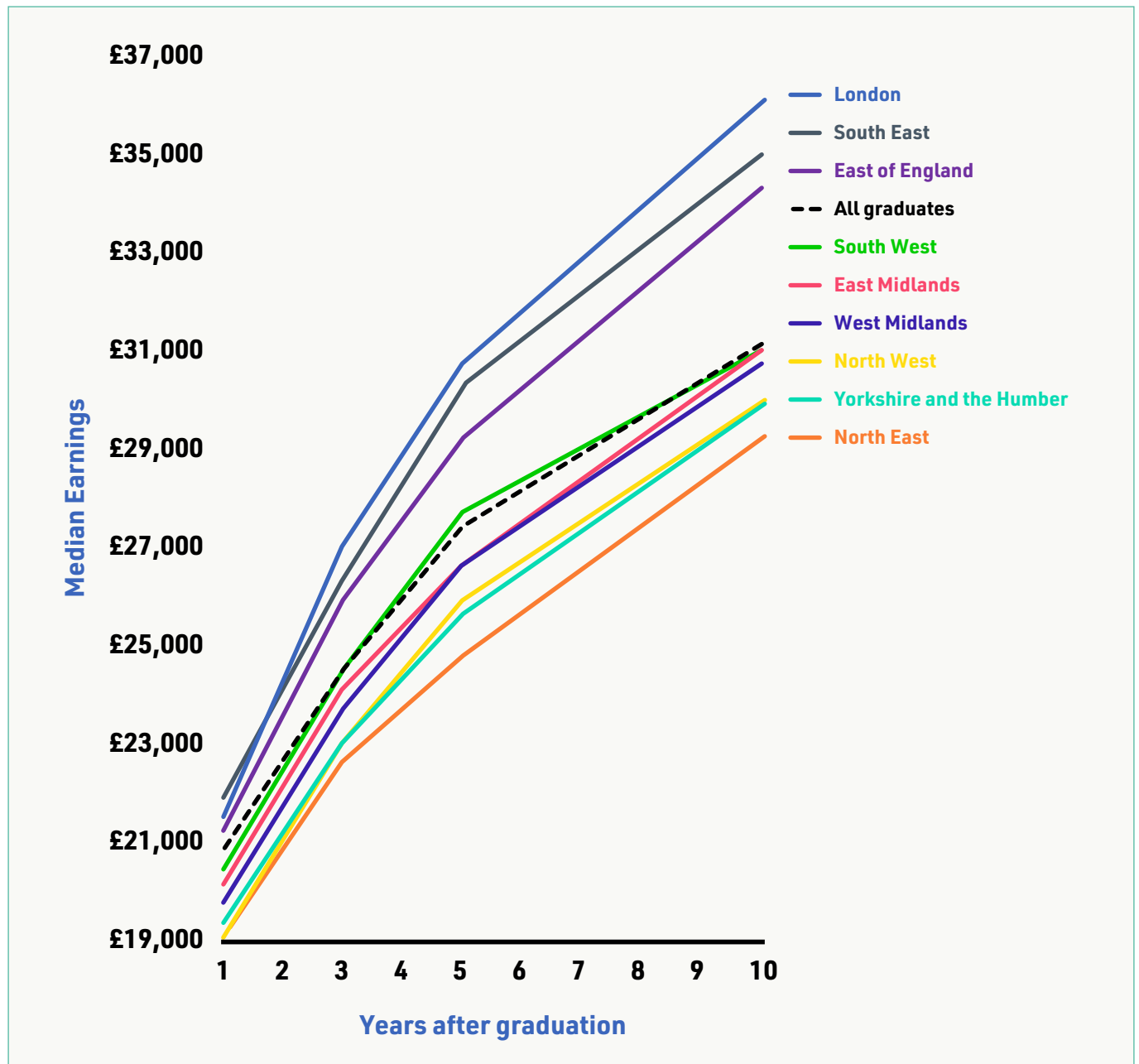


2.2.8 Variations in graduate earnings by region

Figure 8 shows the change in earnings in the years following graduation according to graduates' home region (where they lived prior to entering HE). From one year after graduation there is a clear divide between the earnings of graduates from London, the South East and East of England and graduates from

other regions of England. Weighted by the number of graduates in each region, graduates from London, the South East and East of England earn £2,000 or 10% more than other graduates. This gap only increases as graduates spend more time in the labour market. Ten years after graduation, graduates from London, the South East and East of England earn £4,900 or 16% more than other graduates.

Figure 8: Graduate earnings, after one, three, five and 10 years, 2018/19, by home region



These differences are likely to be driven by differences in the proportion of graduates returning to their home region, and the variation in earnings across different regions based on the current location of the graduates. Figure 9 shows that variation in

earnings according to graduates' current location is even starker. After 10 years, graduates living in London earn almost £12,000 (or 43%) more than those in the South West, on average.

Figure 9: Graduate earnings, after one, three, five and 10 years, 2018/19, by current region



2.2.9 Variations in life satisfaction

Figure 10 demonstrates the variation in graduates' self-reported life satisfaction by both gender and subject area. It shows the proportion of graduates responding to the question 'How satisfied are you with your life nowadays?' with a high or very high score 18 months after graduation. Male graduates are slightly more likely to report higher satisfaction than female graduates, but only by two percentage points. There is a relatively wide spread for subject areas, with a 25 percentage-point difference between

the highest and lowest subjects. In general, although the subject categories do not exactly match those in the LEO earnings data, the subjects at the extremes of the range appear similar. Those near the bottom of both lists include the *creative arts* (second from bottom in earnings after one year, out of 30 subjects) and *mass communications and documentation* (fourth from bottom in earnings). Those near the top include *medicine* (first in earnings), *education* (ninth) and *subjects allied to medicine* (nursing fourth, medical sciences eighth).

Figure 10: Life satisfaction, after 18 months, 2018/19, by gender and subject area

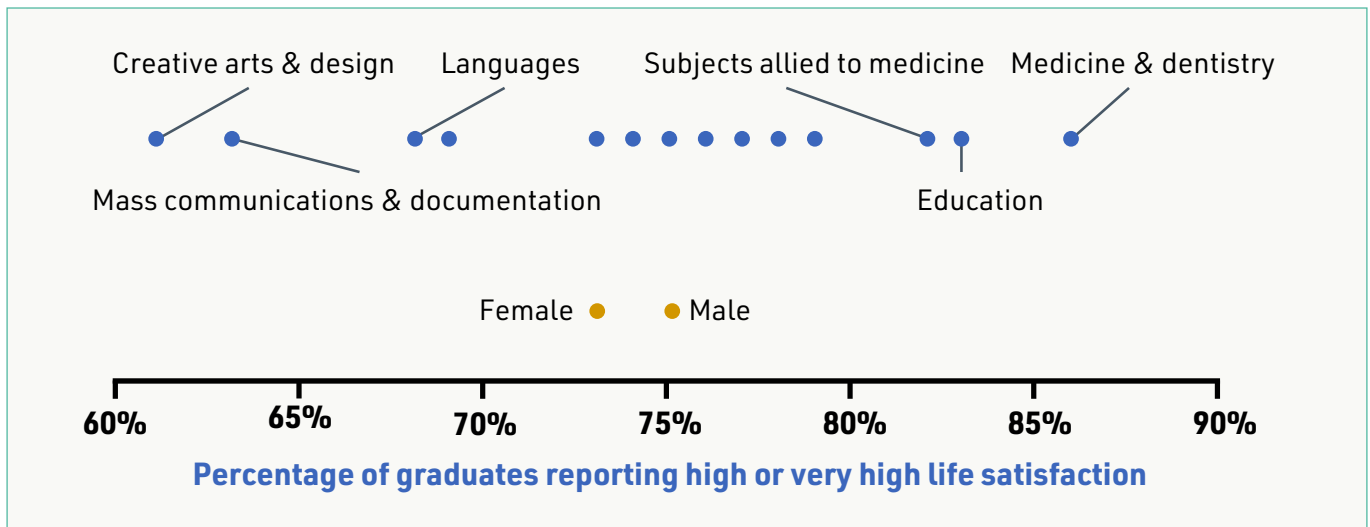
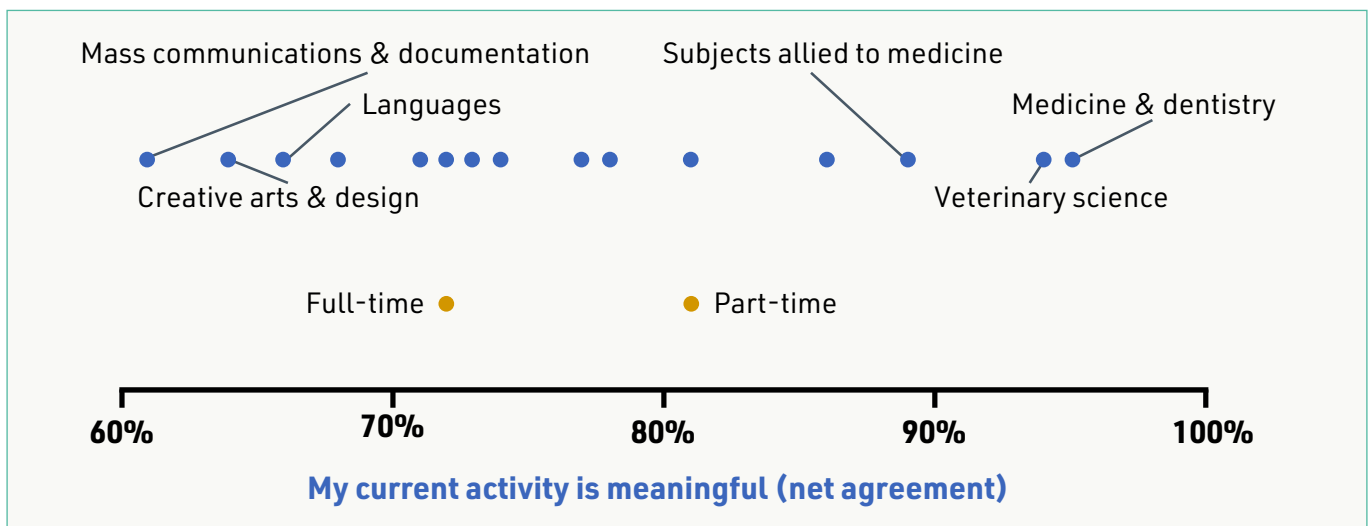


Figure 11 demonstrates the variation in graduates' self-reported views on the meaningfulness of their current activity (e.g. employment or continued study), across both subject area and study mode. It shows the net proportion of graduates who agree with the statement 'My current activity is meaningful' 18 months after graduation. Again, similar subjects appear at the top and bottom of the range. *Mass communications*

and documentation and *creative arts* appear towards the bottom of the range, and *medicine* appears at the top. Graduates who had studied part-time are also more likely to view their activities as meaningful. However, it is worth noting that part-time graduates differ in other characteristics such as age, and this may play a part in the observed differences.

Figure 11: Meaningful activities, after 18 months, 2018/19, by subject area and study mode



2.3 THE DRIVERS OF EMPLOYMENT GAPS

In this section, we briefly summarise recent evidence that goes beyond descriptive gaps. As well as considering the conditional gaps in the earnings of different groups (the remaining gaps once other factors have been controlled for), we also consider the gaps in returns gained from HE between different groups. In general, the returns gained are earnings compared with a similar person in the same group not attending HE.

The studies mentioned used a regression approach to isolate the change in earnings associated with attending HE. Note that the gap in returns between any two groups will not necessarily be the same as the gap in earnings between the same groups. This is because the returns for a group depend on the earnings of the members of that group who did not attend HE, whereas the gaps in graduate earnings do not.

As with the descriptive statistics in the previous section, the studies described generally consider only the earnings of individuals who are employed. Unemployed individuals are excluded from the analysis.

2.3.1 Subject and institution choice

Although the variation in earnings across subjects and education providers reduces once factors such as age, prior attainment and background are taken into account, the differences remain substantial. For example, males who had studied medicine or economics earned 20% more aged 29 than their counterparts with a similar socioeconomic background or A-level attainment who did not attend HE, while women studying these subjects earned 60% more than their non-HE counterparts. However, men who studied the creative arts, English or philosophy had lower average earnings than otherwise similar men who did not attend HE (Belfield et al., 2018).

Modelling suggests these gaps persist over a working life, with female creative arts and languages graduates seeing close to zero lifetime earning returns, after accounting for loans and taxes (Britton et al., 2020). This compares with returns of over £250,000 for law, economics or medicine. Similarly, men studying the creative arts have negative financial returns while men studying medicine or economics have average returns of more than half a million pounds.

There is also variation in the returns associated with different education providers. In particular, the 'elite' Russell Group universities are associated with notably higher returns than average after controlling for a

broad range of student characteristics and other factors. The returns for the remaining Russell Group universities are also positive, albeit to a lesser extent (Dearden et al., 2021).

2.3.2 Male-female gaps

By the age of 25, when the gender earnings gap is around 5%, the choice of degree explains just over half of this gap, while the choice of A-level subjects accounts for just one-20th of the variation (Waltmann, Dearden & Britton, 2021). At both A-level and degree level, the subjects that women are more likely to select offer lower returns, although it is unclear whether this is cause or effect. The remainder of the gap is unexplained by these factors and is likely to be due to some combination of gender differences in parenting responsibilities, hours worked, the propensity to ask for pay rises or apply for promotions and labour market discrimination (Goldin & Rouse, 2000; Bertrand, Goldin & Katz, 2010; European Central Bank, 2019; Kleven et al., 2019; Biasi & Sarsons, 2021).

While the absolute contribution that degree and A-level subjects make to the gap remains relatively constant between the ages of 25 and 30, the unexplained component grows significantly. At the age of 30, the gap has grown to 25%. By this point, A-level and HE subject choices explain only one-fifth of the gap, with the remainder explained by other factors, as listed above.

Gaps between the benefits of a degree for men and women persist over a working life. Modelling suggests that, once student loans and taxes have been taken into account, the lifetime returns from a degree are around £130,000 for men and around £100,000 for women (Britton et al., 2020).

2.3.3 Ethnicity

Different degree subject choices explain a substantial amount of the differences in earnings by ethnicity (Waltmann, Dearden & Britton 2021). For example, Asian and Black African students tend to choose subjects associated with higher returns, such as business, computing, law and pharmacology. Conversely, the choice of education provider does not appear to play a significant role. Differences in the attainment of graduates prior to HE also go some way to explaining differences in earnings and make a significant contribution to differences in returns between different ethnicities.

By the age of 30, earnings gaps have developed between White male graduates and males from all non-White ethnic groups that cannot be explained

by degree subject, the provider attended or other background characteristics (Waltmann, Dearden & Britton, 2021). Male graduates from Pakistani, Bangladeshi, Black African, Black Caribbean and Black Other ethnic groups earn between 10 and 18% less than their White counterparts.

There are also unexplained earnings gaps between female graduates from different ethnic groups. The gap is particularly stark between White female graduates and female graduates from a Pakistani or Bangladeshi ethnic group (around 18%). There are also unexplained gaps for women from Black Caribbean and Black African ethnic groups.

It is worth noting that all ethnicities see positive average returns from a degree. Compared with otherwise similar 30-year-olds who did not complete a degree, South Asian graduates see particularly high returns. In general, the groups with the lowest average graduate earnings also see some of the greatest returns. For example, Pakistani graduates have the highest returns of all ethnic groups, even though they have the lowest average graduate earnings at the age of 30, because the employment outcomes for this group are even worse in the absence of a degree. In this sense, gaining a degree helps to reduce differences between groups.

2.3.4 Socioeconomic group

Prior attainment appears to be a driver of socioeconomic earnings gaps, with disadvantaged graduates having lower prior attainment on average.

However, unlike ethnicity, HE subject choice explains little of the socioeconomic earnings gap (Waltmann, Dearden & Britton, 2021). In fact, disadvantaged young people are more likely to choose law, computing or business, all of which are associated with good returns on average. Conversely, the choice of education provider explains a little more of this gap, with disadvantaged students less likely to attend universities associated with higher returns than more advantaged students with similar prior attainment. This behaviour also goes some way to explaining why private school students get higher returns from university than those who attended state schools.

By the age of 30, there is a 7 to 9% earnings gap between graduates from the most and least disadvantaged backgrounds that cannot be explained by degree subject, education provider or other background characteristics. Furthermore, socioeconomic earnings gaps appear to continue to grow with age (Britton et al., 2019).

There are gender differences in the impact of HE on closing gaps between more and less disadvantaged people. For women, attending HE clearly reduces gaps between the more and the less disadvantaged: that is, these gaps are smaller for graduates than for non-graduates. However, although both more and less advantaged men benefit from HE, it does little to reduce the gaps between these two groups: the positive returns associated with HE are similar in size for both more and less disadvantaged men.



3. EVIDENCE REVIEW – LITERATURE REVIEW

In addition to our secondary data analysis of labour market outcomes for graduates, we conducted a rapid review of the technical and academic literature on programmes to improve these outcomes. Section 3.1 gives an overview of our approach to conducting this literature review; Section 3.2 provides an overall characterisation of the literature we reviewed and Section 3.3 offers detailed summaries of the reviewed literature.

3.1 APPROACH TO THE LITERATURE REVIEW

3.1.1 Overview approach

We searched for suitable literature using the ERIC. Our review was aimed at finding evidence to answer the following questions:

- How have measures aimed at improving careers and employability outcomes and delivered by post-secondary education providers been studied in the literature?

- What measures have had a positive impact on students' employment and HE progression?
- What measures have been especially effective with students from disadvantaged groups?
- What evidence gaps need to be filled?

As we predicted that at least some of this evidence would be drawn from studies conducted outside the UK, we also considered the following two research questions:

- How is the literature relevant to the UK context?
- How similar are the conclusions of research conducted within the UK and elsewhere?

Guided by these research questions, we followed the procedure outlined in Table 1 below. Search terms and inclusion and exclusion criteria are included in Annexes A and B respectively.

Stage	Activity
1. Establishing review parameters	We conducted initial desk research to clarify and confirm search terms (see Annex A), databases and screening criteria (see Annex B) that were relevant to the research questions.
2. Searches	We conducted searches for literature in the online database ERIC. We recorded the first five pages of results for each search to produce an initial longlist of evidence. The keywords used for the search are detailed in Annex A. In total, we conducted three searches using all the keywords from each row. Each set of keywords in each column was combined with the adjacent set of keywords using a Boolean 'AND' operator. We also conducted five less comprehensive keyword searches, which yielded papers included in the final review.
3. Screening	We read the titles and abstracts of the longlisted studies and applied the inclusion and exclusion criteria (see Annex B). This produced a final shortlist of literature to be summarised and synthesised.
4. Cataloguing	We recorded full metadata for the final set of literature, including study design, study population, study sample and quality of evidence as categorised by TASO's evidence classification scheme.
5. Analysis	We summarised and synthesised the shortlisted literature, organising by type of programme for improving employment and career outcomes. We also used the catalogued metadata to produce an overall characterisation of the evidence base (see Section 3.2).

3.1.2 Limitations

This rapid evidence review was conducted in a relatively short time frame. As a consequence, our survey of the literature is not as comprehensive as a thorough systematic review and we may have omitted some relevant studies. Our review is also naturally constrained by our use of exclusion criteria.

While we acknowledge these limitations, we do not believe that they represent a significant challenge to the generalisability or utility of our review's conclusions.

3.2 OVERVIEW OF THE LITERATURE

Our initial search produced a longlist of 248 pieces of literature. Of these, 231 came from the comprehensive search strategy outlined in Table 2 in Section 3.1.2, while a further 17 were produced by more targeted keyword searches. A first application of the inclusion and exclusion criteria produced a shortlist of 95 studies. A further screening based on relevance to the research questions, evidence quality and evidence strength was used to reduce this list to 35 papers.

The remainder of this section gives a general characterisation of the literature we summarised for this review. The summaries in Section 3.3 of each programme reviewed also include a brief table giving the main characteristics of the evidence for that programme.

3.2.1 Studies by evidence type

We applied TASO and the OfS taxonomy of evidence to the screened literature, classifying studies as narrative, empirical enquiry or causal. These terms are defined in Annex C.

Of the literature we studied, two studies met the criteria for causal studies, 23 for empirical enquiry and 10 for narrative. This distribution indicates that the evidence base is generally lacking in studies proving that specific programmes have a demonstrable causal impact.

3.2.2 Studies by evidence strength

We applied the OfS taxonomy of evidence strength to the screened literature, classifying studies as offering 'emerging evidence', 'medium evidence' or 'strong evidence'. Table 2 below gives examples of common study protocols that would fall into each category, depending on the evidence type.

	Emerging evidence	Medium evidence	Strong evidence
Type 1: narrative	Capturing qualitative data through interviews or focus groups with a small, targeted sample	Capturing qualitative data through interviews or focus groups with a medium-sized sample and some thematic analysis of findings	Capturing qualitative data through interviews with a medium-sized sample, conducting thematic analysis to extract latent themes and using methods to ensure the validity of findings (e.g. inter-rater testing; participant verification)
Type 2: empirical enquiry	Using quantitative data collection (e.g. surveys) to capture attitudes to a programme	Using quantitative data to capture attitudes or experiences before or after a programme, but without a control or comparison group	Using pre- and post-intervention quantitative data to assess change in a validated instrument, but without the use of a comparison group
Type 3: causal	A quasi-experimental study design with a small sample, quantitative pre- and post-intervention data and a result that is only statistically significant after multiple corrections	A randomised controlled trial design with a small sample, quantitative pre- and post-intervention outcome data on a relevant construct and a statistically significant result with a small to medium effect size Alternatively, a systematic review that shows a general trend towards the positive effects of a particular programme	A randomised controlled trial design with a large sample, quantitative pre- and post-intervention outcome data captured for a relevant construct and a statistically significant result with a large effect size Alternatively, a meta-analysis or systematic review showing statistically significant results with medium to large effect sizes

The majority of studies included in our evidence review provided emerging evidence of programmes' effectiveness. Ten studies offered medium-strength evidence and one offered strong evidence.

From our analysis, a lack of programme outcome data or a lack of comparison groups undermined the strength of the evidence. Where programme outcome data was captured, baseline data was often lacking. Many studies also had small sample sizes.

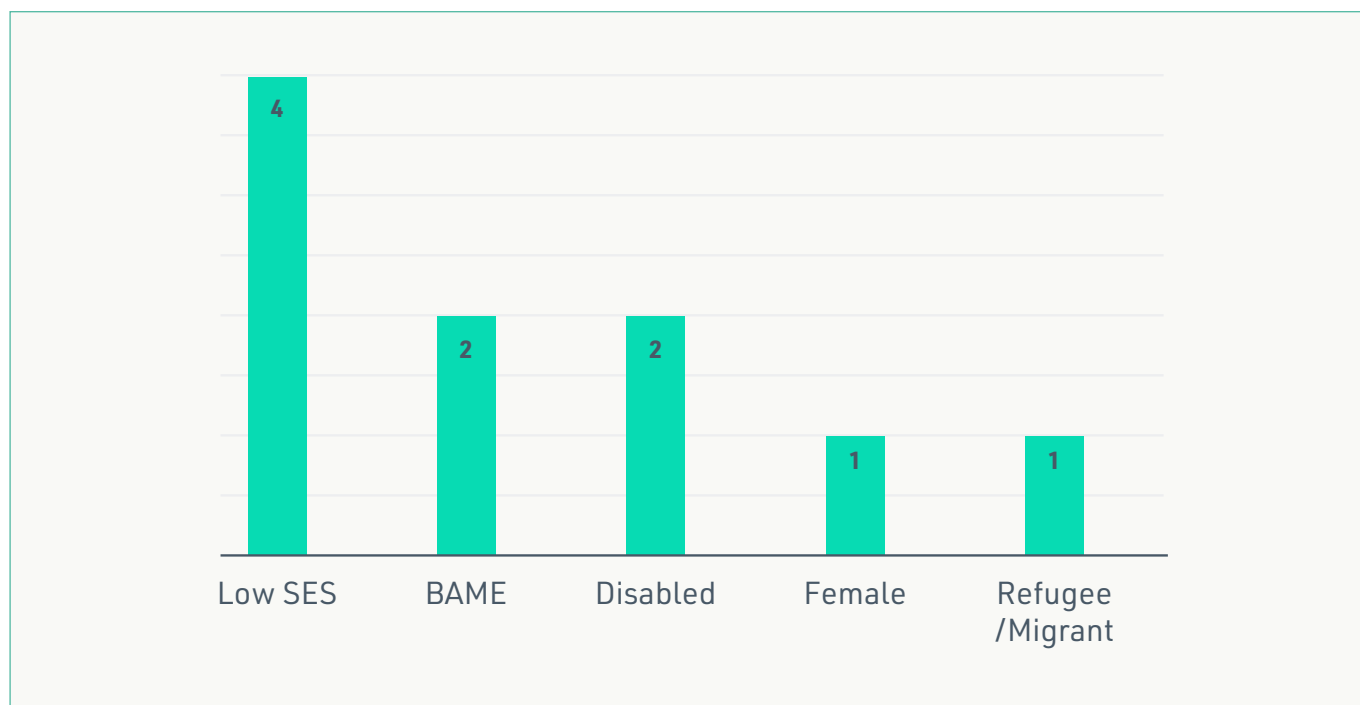
3.2.3 Studies by population

Our review started with the goal of understanding which interventions are effective in improving career and employment outcomes for students from

disadvantaged groups. However, only around one-third of the papers we reviewed met this specification. The majority of papers focused on general student populations with no targeting towards individuals from disadvantaged backgrounds.

In total, 10 studies uncovered in our review related to students from disadvantaged groups. The majority of these were conducted with students from low socioeconomic backgrounds, while the remainder were spread across other disadvantaged groups. Of these studies, five are narrative in design, five are empirical enquiries and one is causal. Figure 12 below provides a breakdown of these groups and the number of studies included in our review featuring these populations.

Figure 12: Number of studies in the evidence review by disadvantaged group study population



The relative paucity of studies on programmes that improve career and employment outcomes for students from disadvantaged groups reflects the lack of research into effective programmes for students in

general. It also may reflect the challenges that some researchers and providers face in identifying the backgrounds of students to include them in targeted programmes.

3.3 SUMMARY OF THE LITERATURE

This section summarises the literature we reviewed for this report. Our findings are organised primarily by the type of programme aimed at improving career and employment outcomes for graduates. Section 3.3.5 summarises literature that is not programme-specific but relates to interventions that are potentially effective for students from disadvantaged groups.

3.3.1 Work experience

The intervention

'Work experience' covers a wide range of interventions that all involve providing students with exposure to industry and employment. The primary aim of these interventions is typically to allow students to develop skills, knowledge and experience that improve their employability. These may be difficult for students to develop in the classroom and therefore require direct experience of the workplace.

Work experience can take many forms in FE and HE; for each study, we specify the type of experience offered.

'Internships' place students in industry for a relatively short period – such as three months or over a summer – and can be paid or unpaid. Internships can be a mandatory course commitment or an optional programme that students pursue of their own volition.

'Sandwich' courses are structured degree programmes where students alternate between classroom instruction and placements in industry. 'Thick' sandwich courses involve a single lengthy placement, such as a year, while 'thin' sandwich courses involve several shorter work placements spread through the course of a degree.

Students may also choose to have a part-time job in parallel to their degree studies. Although this may not be a mandatory course commitment, it can contribute to developing skills and knowledge relevant to employability.

Before reporting the findings, it should be noted that our evidence review excludes vocational degree programmes such as medicine, teaching and veterinary science, which involve structured work experience opportunities.

Findings and implications

- There is strong evidence to support the impact of internships and sandwich courses on students' employment outcomes. These outcomes include a higher probability of being invited to interview, a higher salary and a lower likelihood of unemployment from at least six months after graduation.
- Stakeholder consultation shows that employers and students value work experience and both believe it makes graduates more employable.
- While there is little direct research on the positive impact of work experience on outcomes for disadvantaged students, there is emerging evidence in this direction. There is also research suggesting that disadvantaged students may face unique challenges during internships that need to be considered during the design and delivery of work experience programmes.
- While the evidence base on work experience programmes is more complete and indicates a greater impact than the evidence on any other intervention we studied, there are good reasons to believe that further research is needed in the UK context to understand the impact of such programmes on disadvantaged students. There is also a need for studies able to show the effects of sandwich courses and internships on graduate outcomes, independent of students' motivation to secure work.

How secure is the evidence?

We reviewed 12 papers on work experience. Four of these papers examined sandwich courses as an intervention, while four examined internships, both voluntary and mandatory. One study looked at 'work taster' experience days exclusively and three studies collected data on the full spectrum of work experience from the stakeholder perspective.

Overall, the evidence base is more mature and secure than the evidence on any of the other interventions we studied. Table 3 below provides an overview of the characteristics of the studies we surveyed.

Table 3: Work experience: evidence type and strength of the evidence

Strength	Evidence type			Total
	Narrative	Empirical enquiry	Causal	
Strong evidence	0	0	0	0
Medium evidence	0	6	0	6
Emerging evidence	3	3	0	6
Total	3	9	0	12

Most of the quantitative studies that we reviewed identified an association between participation in work experience and improved employment outcomes. However, our review highlights a lack of studies that show not only association but also causation. We also note that only two studies uncovering these associations were conducted within the UK, with the remainder taking place in continental Europe or the United States (US).

What does the evidence say?

We begin by summarising five papers that provide medium-strength, quantitative evidence on the impact of work experience on graduates' employment outcomes. We then review three papers that report survey data on employer and student attitudes towards the duration, location and type of work experience. Following this, we summarise and discuss four papers on the experience and impact of work experience on students from disadvantaged backgrounds.

Reference	Type of evidence	Methodology
Mason, Williams and Cranmer, 2009	Empirical	Regression analysis
HE Funding Council for Wales, 2012	Empirical	Regression analysis
Silva et al., 2015	Empirical	Regression analysis
Saniter and Sielder, 2014	Empirical	Regression analysis
Nunley et al., 2016	Empirical	Regression analysis
Irwin, Nordmann and Simms, 2019	Empirical	Mixed methods
Ferns, Dawson and Howitt, 2019	Empirical	Survey data analysis
Rook and Sloan, 2021	Narrative	Interviews
Kerrigan, Manktelow and Simmons, 2018	Empirical	Regression analysis
Dickinson and Griffiths, 2017	Narrative	Qualitative case study
Garcia, 2009	Narrative	Interviews
Choi, 2018	Empirical	Regression analysis

3.3.1.1 Quantitative evidence on the impact of work experience on employment outcomes

A 2009 study in the UK found that sandwich courses have a strong association with positive employment outcomes for HE students (Mason, Williams & Cranmer, 2009). This effect extends to securing work upon graduation as well as employment in a role that draws on graduate-level skills.

The study was conducted with eight universities across the country, with an even split between pre- and post-1992 institutions. A total of 60 staff from five subject areas and 10 careers staff were interviewed to determine what their department does to support student employability. This data was used to assign a score to each department for their explicit teaching of employability skills, use of employability skills in undergraduate assessment, innovation in approaches to employability, involvement of employers in course design and the proportion of students undertaking work placements as part of their degree.

These scores were then correlated with data from the First Destinations survey on graduate outcomes. Data was available on 3,859 students who had passed through the 34 university departments involved in the study. The study found a strong positive correlation between participation in sandwich courses and employment six months after graduation ($r=.55$). This also extended to the quality of employment, with sandwich courses also correlating with high-quality 'graduate-level' work as a student destination. This strong positive relationship endured even after controlling for students' demographic characteristics, degree choice and academic achievement. In contrast, the paper failed to identify any significant positive relationship between the teaching and assessment of employability skills or the involvement of employers in course design and positive graduate employability outcomes. This suggests that sandwich courses are a more effective method of improving graduate employment outcomes than other routes.

A second study of GO Wales found a similar positive relationship between optional, paid internships and positive employment outcomes. GO Wales is a programme operated by a partnership between the Higher Education Funding Council for Wales and a network of HEPs to improve Welsh graduates' employment outcomes. A 2012 evaluation of the first two years of the programme concluded that the optional internships and work taster aspect of the programme were associated with a higher likelihood of securing employment and a higher salary upon graduation for participating students (HE Funding Council for Wales, 2012).

In total, 2,327 students participated in the work placement programme. Each student's HEP found them a paid internship with a local employer outside term time. A telephone survey was conducted with 1,063 of the participants and a comparison group of 303 graduates who did not participate in the GO Wales programme. No corrections were made in the data analysis to control for self-selection bias.

Graduates who had participated in an internship were significantly more likely to be in work than those in the comparison group and had a starting salary that was, on average, 20% higher. Surveys of employers found that 75% believed that the programme had been beneficial in teaching students key graduate skills, leading two-thirds of them to offer further employment opportunities to students who had completed GO Wales work experience with them.

GO Wales also organised one-week work taster programmes for students, which were effectively very short, unpaid internships. Of the work taster participants, 80% reported that they had acquired skills they believed would help them to secure work in the future, with the same proportion of employers echoing this sentiment. Of the work taster participants in employment six months after graduating, 35% reported a salary uplift they believed to be related to their work taster experience. However, the control group used for comparison in this strand of the research was self-selected and very small (with only 20 participants), making it impossible to justify causal claims.

A third quantitative study conducted in Portugal found a similar positive relationship between structured work experience programmes for students and employment outcomes (Silva et al., 2015). The researchers surveyed 1,158 undergraduate programmes across Portugal and identified 556 of them as sandwich courses. The relevant courses were categorised based on the length and distribution of work placements across the duration of a degree. For example, courses with one large placement at the end of a degree ('thick sandwich') were distinguished from those that involved several smaller placements spread out over a student's time in HE ('thin sandwich'). The researchers also eliminated vocational degrees with legally required work experience – such as medicine, nursing and teaching – from their analysis.

A national database was then used to compare graduate employment outcomes for students whose degrees involved work placements and those whose degrees did not. The study found a statistically significant difference in favour of courses involving work placements. Their regression model further identified that 'thin sandwich' approaches have better

graduate employment outcomes than 'thick sandwich' courses. The researchers speculated that several smaller placements allow students to gradually and cumulatively increase the knowledge and skills that improve their employability. Working with several different employers may also offer students the opportunity to develop a broader network of contacts. Students on single large blocks of work experience may be more vulnerable to unfortunate workplace matching, possibly being allocated to an employer with whom they are unable to work productively.

All three studies summarised so far struggled to disentangle differences in student motivation from the impact of work experience on employment outcomes. Since students choose to enrol on sandwich courses or voluntary internships, the associated positive employment outcomes identified in these three studies may reflect higher levels of motivation to secure work. Consequently, they do not necessarily show that mandatory internships or sandwich courses guarantee improved employment outcomes for any given student.

A fourth study conducted in Germany used a similar methodology to Silva et al. (2015) but was able to analyse the differential employment gains of mandatory versus voluntary internships, helping to shed light on the issue of motivation. Using survey data from 13,630 randomly sampled graduates one year and five years after graduation, the study's authors built a regression model that highlighted a relationship between internship experience and early career earnings (Saniter & Sielder, 2014).

The researchers distinguished between mandatory and voluntary internships, treating them as separate variables. They identified that students were 58% more likely to complete an internship if it was a mandatory part of their course. This difference was found to be statistically significant and persisted even when controlling for demographic characteristics of students. Aside from this participation rate, the authors found no significant differences in labour market outcomes between graduates who participated in mandatory internships and those who completed optional ones.

The researchers also found that graduates who had completed an internship had 6% higher earnings on average than their peers who did not complete such work experience. This relationship was statistically significant. The study also reported that the uplift in earnings and likelihood of being in full-time employment were greater for graduates in subjects typically associated with weaker labour market outcomes – such as creative arts subjects and humanities. In contrast, the researchers found no

significant differences in the impact of the intervention on students by socioeconomic status, prior academic achievement or parents' educational attainment.

A fifth study reported evidence that completing an internship increases the likelihood of being invited to an interview for jobs related to that work experience. In a study conducted in the US, 9,400 fictional CVs were produced and randomly submitted in response to adverts for jobs in the business administration sector (Nunley et al., 2016). Of these CVs, 25% included a reference to an internship completed three months prior to graduation in an industry relevant to the job advert. CVs also varied in the degree courses claimed, with some more ostensibly related to the job applied for.

The researchers found that CVs with internship experience were just over 2% more likely to be invited to interview than those with no reference to such experience. This effect was found to be statistically significant and especially strong for CVs with degree subjects unrelated to the job vacancy. In this latter category, internship experience made the CV-holder 19% more likely to be invited to interview.

The researchers concluded that completing an internship signals certain characteristics to which employers are receptive. However, they noted that the study's fictional CVs all described individuals who had just graduated from university. The impact of this work experience signal may depreciate over time and be of less value several years after graduation.

3.3.1.2 Stakeholder attitudes towards work experience

Research into stakeholder attitudes can help providers to plan work experience programmes for maximum engagement and impact. For example, a 2019 study in Scotland found that the type of work experience that students have undertaken can make a meaningful difference to employers' recruitment decisions (Irwin, Nordmann & Simms, 2019).

The study showed 175 participants (split into roughly equal groups of students, employers and university academics) excerpts from CVs with varying types and levels of work experience and invited comments on attitudes and preferences. Some of this qualitative data was then scored to convert it into quantitative data for easier analysis and summary. Overall, employers preferred work experience that had been undertaken outside a degree over mandatory internships and sandwich courses. Some reported that this undertaking was used as a proxy for self-motivation and self-organisation skills. Employers also reported finding work experience more compelling when it was relevant to their organisation and in a 'high level

graduate role'. However, overall, employers reported very positive attitudes towards work experience in general and ranked it as more important to recruitment decisions than academic achievement or aptitude.

An Australian study of graduates, employers and teaching sheds light on how careers and employability services can adapt their programmes to the needs of students (Ferns, Dawson & Howitt, 2019). The researchers surveyed 476 graduates who had experienced structured work experience programmes as part of their course. They found a unanimous preference for work experience that is distributed throughout a course ('thin sandwich') as respondents believed this allowed them to combine theoretical and academic instruction with practical, workplace learning. Graduates also expressed a preference for being taught by academics who have relevant and recent work experience in industry. They reported positive attitudes towards course curriculum and assessment co-designed by academics and relevant industry experts. The 34 teaching staff interviewed for the study shared these beliefs.

Another Australian study uncovered a more critical attitude towards work experience from employers (Rook & Sloan, 2021). Using interviews with nine employers who had hosted students on human resource management degrees as interns, most noted that students had poor generic decision-making skills. Students also lacked knowledge of how to complete basic human resources tasks, which restricted the types of activity and the level of responsibility they could be given as part of their work experience and limited their opportunities to grow and develop. Although this was a small-scale study conducted outside the UK, it highlights the value of including employers in the design of courses that will feed them work experience students.

Impact and disadvantaged students

All the studies on work experience reported so far used samples from the general student population and, thus, failed to identify whether students from disadvantaged groups have a different experience of work placements and the impact this may have on their academic and employment outcomes. This section reports on four studies that focused on these issues.

Kerrigan, Manktelow and Simmons (2018) conducted secondary data analysis of the HESA Graduate Outcomes survey for three academic years from 2011 to 2014, to understand how WP sandwich degree graduates fare in the job market. Analysing data on 350,000 graduates, the researchers found that sandwich degree graduates were 10% more likely to

be in professional-grade employment six months after graduation than their peers who completed a typical taught degree. This result was statistically significant.

More importantly, the researchers found that sandwich degrees produce lower levels of disparity in employment outcomes between WP and non-WP graduates compared to traditional taught degrees. While WP graduates of taught full-time degrees were 10% less likely than their non-WP peers to be in professional-grade employment six months after graduation, the difference between the two groups was only 2% for sandwich degrees. It appears that sandwich degrees can be effective at closing the gap in employment outcomes for disadvantaged students.

However, despite this finding, the authors noted that WP young people were less likely to enrol in sandwich degrees. To understand why they conducted 16 semi-structured interviews with WP and non-WP sandwich degree graduates from Nottingham Trent University. They found that WP young people were often concerned about the length of the single work placement block on 'thick' sandwich degrees and worried about the opportunity cost of a year away from studies. WP young people who enrolled in sandwich degrees also highlighted awareness of the greater difficulties often faced by disadvantaged groups in securing work experience, typically due to the inability to afford to support themselves during unpaid internships or due to a lack of family connections to gain work experience opportunities.

A qualitative study examined students' experiences of a two-day work taster experience in London (Dickinson & Griffiths, 2017). Ten students from a post-1992 university and first-generation, low-income backgrounds attended a focus group to offer their reflections and feedback on the work taster and uniformly reported feeling anxious and intimidated about attending the work taster. While it is likely that students from many demographic groups would experience anxiety in the same situation, several participants reported that coming to London and being required to arrange their own travel while in the city were the main causes of their anxiety. Other participants found the environment of an international law firm uncomfortable. Students also reported that a practice session was held at their university before the taster to allow them to practise introducing themselves and networking helped to make them feel less anxious. Students concluded that they felt more positive about applying to similar opportunities in the future. They also suggested that future taster-day sessions could provide clear application guidance for students from their backgrounds, such as specific routes to securing relevant work experience.

Another study conducted semi-structured interviews with 33 female accounting and finance undergraduates in the middle of their year-long sandwich course placements (Gracia, 2009). All participants were from groups underrepresented in HE, whether due to age, ethnicity, disability or social class. Although the study was conducted over a decade ago, the results highlight the challenges that female and disadvantaged students engaged in work experience may face. Several interviewees reported being given more administrative and clerical work – especially photocopying – than their male work experience peers. Interviewees also reported vividly experiencing how males from wealthier backgrounds heavily dominated their work experience offices. They reported that this had given them a deeper sense of pessimism about their ability to progress through the corporate ladder to senior roles. A small number of students stated that they now believed that they would need to behave in a more ‘masculine’ manner in order to advance their careers.

While this was a small study, the researchers identified challenges that can manifest for work experience students from disadvantaged backgrounds. They also highlighted how work experience can unintentionally reproduce values and attitudes that are not necessarily desirable. This may indicate a need for greater input from education providers into the work experience programmes that employers offer.

Finally, Choi (2018) conducted secondary data analysis to uncover a relationship between work experience and college dropout rates in the US. The researcher analysed the trajectories of 9,000 young people from the age of 16 onwards using the 1997 National Longitudinal Survey of Youth. This survey includes detailed information on student transitions into post-secondary education and, subsequently, the labour market. The researcher focused on the relationship between the socioeconomic status of students enrolled in HE, their engagement with extracurricular work and the likelihood that they will withdraw from their studies. The researcher found that the higher the intensity of engagement in work (measured in terms of hours spent working per week), the higher the likelihood of dropping out of university. This effect was especially large for first-year students.

Surprisingly, these effects were also more pronounced for students from wealthier backgrounds. This group of students were more likely to withdraw from or suspend their studies while engaged in intense work than those from poorer households. However, the study failed to include ‘intensity of academic engagement’ as a

variable, leaving open the explanation that students from non-disadvantaged groups may work harder outside university while being less engaged in their course. This may explain the effects observed in this study. While this complicates the relationship between demographics and outcomes, Choi’s paper indicates the need for providers to moderate their enthusiasm for work experience with students, given that excessive engagement with work may increase the likelihood of students withdrawing from their education provider.

Which features seem to be important?

Our review identifies sandwich courses as a structure for work experience with a relatively strong evidence base. Such mandatory work experience requirements are more likely to result in the completion of the work experience. They can also be particularly supportive to students from disadvantaged groups, who may otherwise struggle to access the social networks and financial support required to pursue work experience independently.

Two studies suggest that ‘thin’ sandwich courses, where multiple shorter work experience placements are distributed throughout a degree, are more effective than ‘thick’ sandwich courses with one lengthy placement. These ‘thin’ courses allow students exposure to a wider range of workplaces, producing a richer understanding of the workplace and broader professional networks than a single lengthy placement. Equally, thin placements can be more attractive to students who report being apprehensive about the length of placements in ‘thick’ courses, and who are therefore drawn to the opportunity to synchronise classroom learning more closely with workplace experience in ‘thin’ courses.

For voluntary or mandatory internships, the GO Wales study suggests that placing students with employers who are open to hiring successful interns can be an effective way of converting placements into positive graduate outcomes.

Finally, it is worth noting that, as work placements can have signalling power to employers, it may benefit students who complete such placements to be guided by providers in how to communicate them effectively in CVs and job applications. Equally, students’ experiences in work placements can be used as an anchor for guiding effective IAG. This can potentially use students’ learning from workplace exposure to help structure more effective career planning, supporting some of the positive IAG effects highlighted in the next section (Section 3.3.2).

3.3.2 Information, advice and guidance (IAG)

The intervention

IAG is the provision of resources to students to help them understand their career options and make effective decisions around these. As may be expected from this broad definition, IAG can take many forms.

Some IAG involves career counselling, where a student experiences one-to-one or small group discussion with a trained careers professional about their personal ambitions and the steps necessary to achieve them. Equally, IAG may be organised through organising talks, seminars and workshops that provide this guidance to students. This IAG may draw on experts, figures in industry and talent generally external to an education provider to provide this information. The content of these sessions varies widely, but can involve exposure to a particular career pathway, guidance on applying for specific roles or work in specific sectors or general guidance on developing a strategic approach to meeting professional goals.

IAG services may also be offered through documents, websites and online tools that provide insights on potential careers and the necessary steps that students need to take to pursue them. This can include connecting students directly with work and training opportunities, for example through student jobs boards.

Findings and implications

- Some meta-analytic evidence suggests that one-to-one and small group career counselling is effective at improving attributes related to employability, such as students' knowledge and readiness to navigate the job market.
- Evidence also suggests that effective IAG delivered by individuals from a similar background to recipients and aimed to provide personalised advice or support relating to key concerns can aid the progression of disadvantaged students into further study.
- Some disadvantaged students may prefer to receive IAG from their course instructors, rather than from a distinct careers department.
- Certain design principles can be applied to online IAG tools and resources to increase their accessibility to disadvantaged students.
- Further research is needed to understand the impact of IAG on concrete graduate employment outcomes, especially in relation to disadvantaged students.

Strength of the evidence

We reviewed one meta-analytic study that provided strong evidence for the effectiveness of IAG on constructs related to students' ability to make effective career decisions. We also reviewed one study that used a causal design to determine the impact of IAG on disadvantaged students' progression into postgraduate education. Aside from these two studies, the remainder of the evidence we reviewed provides weaker evidence using less robust study designs (see Table 4 below).

Table 4: Information, advice and guidance (IAG): evidence type and strength of the evidence

Strength	Evidence type			Total
	Narrative	Empirical enquiry	Causal	
Strong evidence	0	1	0	1
Medium evidence	0	0	1	1
Emerging evidence	4	2	0	6
Total	4	3	1	8

What does the evidence say?

We first review evidence of the impact of IAG on behaviours and abilities that can support positive graduate outcomes. We then consider research on

the relationship between IAG and positive material graduate outcomes (such as salary and employment rates). We finally examine other evidence on effective IAG and student attitudes towards it.

Reference	Type of evidence	Methodology
Whiston et al., 2017	Empirical	Meta-analysis
Percy and Emms, 2020	Empirical	Regression analysis
Gaskell and Lingwood, 2021	Narrative	Case study
Shaw, 2012	Narrative	Focus group
Andrewartha & Harvey, 2017	Empirical	Survey data analysis
Pickering, 2021	Narrative	Focus group
OfS, 2019	Causal	RCT
Hofer, Zhivkovikj & Smyth, 2020	Narrative	Case studies

3.3.2.1 Quantitative evidence on the impact of IAG on employment outcomes

A 2017 meta-analysis by Whiston et al. pooled 55 papers on IAG interventions to provide strong, empirical evidence of a reliably positive association between these interventions and recipients' ability to make effective career choices. While the review included some studies that fall outside our inclusion criteria (by study location and study population), the authors noted that 50% of all papers in the review used HE students and 90% were conducted in Europe or the US. The reviewers concluded that their findings 'apply mainly to [HE] college students' (Whiston et al., 2017, p.179).

Summarising over 30 studies that used intervention and control groups, the review found that one-to-one career counselling has a strong impact on graduates' ability to make effective career decisions and their belief in their ability to determine the course of their career ($d=.83$). The impact of group-based career counselling was also found to be moderate ($d=.53$). The authors also found a statistically significant relationship between the amount of time spent experiencing career counselling and the size of the intervention's impact. However, the meta-analysis involved no mediator analysis to uncover whether student motivation may provide an alternative explanation for this relationship between time spent engaged in an intervention and eventual outcomes. The authors also noted that the studies surveyed did not support the impact of IAG on more material graduate outcomes such as employment rates or salary size.

A second paper, by Percy and Emms (2020), examined 7,400 responses to the annual HESA survey conducted in 2013 to build a regression model of

graduates' perceptions of the career interventions they believed had helped them most. This empirical, emerging evidence uncovered that, six months after concluding their studies, graduates who found their current role through their university's career IAG services were earning more on average than those who had not found their role in this way. This positive relationship persisted even when graduates' academic achievement, socioeconomic background and general demographics were taken into account, although the study did not report significant differences between these graduate characteristics. The researchers also noted indirect evidence in support of IAG, with career satisfaction and salary being highest among graduates who reported that they were in a job that 'fits into their wider career plan'. As career counselling is often used to develop these career plans, this is indicative of a positive association between IAG and employment outcomes.

Despite compelling evidence in favour of IAG, we should consider that the paper also reports that only 8% of graduates surveyed found their current roles through IAG. It is possible that, in a competitive labour market, higher uptake of IAG services may reduce the strength of these effects on labour market outcomes.

3.3.2.2 Other evidence on IAG and employability outcomes

Gaskell and Lingwood's (2021) report for Universities UK captures some of what they characterise as 'best practice' in improving employment and progression outcomes for students from disadvantaged groups. We underscore that this is a narrative record of emerging evidence, and only one reported programme has any outcome data. This data is presented in a case study of

Work With Common Purpose, a programme run by a non-governmental organisation that creates opportunities for young people from disadvantaged backgrounds to acquire international experience that can boost employability. It is centred around the notion of cultural intelligence. The programme features online learning that supports students to develop their leadership skills, as well as short-term experiences abroad. An evaluation found that 94% of the 510 participants surveyed found themselves better able to adjust their behaviour in culturally diverse situations, to work with culturally diverse teams and to contribute to their university or community. These self-reported behavioural changes could support improved employability outcomes, although the report has no data to this effect.

3.3.2.3 Student attitudes towards IAG

Shaw (2012) conducted a focus group with a small group of foundation degree sports therapy students at an FE college in the north of England. The study aimed to better understand how students make decisions around careers and progression and how this relates to the IAG services offered by their college.

The study found that course tutors were often students' preferred source of information and inspiration in relation to progressing to further study in HE. Much of this information was indirect and picked up gradually from informal conversations. In contrast, the students found the formal IAG service to be vague and were unsure how it might help them to progress in the future. The paper concluded in favour of involving teaching staff in IAG design and delivery. This was argued to be especially important for providers with a high level of pastoral contact between teaching staff and students. It also seems plausible that these findings are most applicable to courses where teaching staff have a high level of industry experience, as in the case of this study site.

A 2017 study conducted in Australia surveyed 164 student representatives from across the country on their attitudes towards IAG services in their university (Andrewartha & Harvey, 2017). The respondents claimed that IAG was often specific to particular careers and expressed a preference for larger careers fairs where students could learn about a range of jobs and meet many different employers. Students also reported a strong awareness of how graduate employment depended on connections and a consequent need for IAG to provide guidance on effective networking. This included opportunities to practise networking skills through alumni mixers. The representatives also worried that insufficient IAG was targeted specifically at disadvantaged groups and suggested the need for greater investment in this

area. While it is unclear how this Australian study is applicable in the UK context, it nevertheless suggests some pathways that providers may include in surveys of their respective student populations to determine their next steps in optimising their IAG services.

Evidence of disadvantaged graduates

Pickering (2021) evaluated a programme led by an English post-1992 university to provide four sessions of IAG to students from underrepresented, disadvantaged groups.

The participating students were all classified by the FE college as homeless or at risk of homelessness, with a quarter identifying as having a physical disability. Two of the sessions were delivered at the FE setting while the other two were delivered on the university campus. The sessions covered how to decide on an HE course, skills and techniques for making a successful application, guidance in navigating the Universities and Colleges Admissions Service (UCAS) and an overview of student life and finances.

Using a focus group with 12 participating students to gather feedback on the programme, the researchers found that the programme primarily helped cement the decision to attend HE for those already planning to do so. While the students reflected that they did not necessarily learn anything new through the programme, they were able to ask questions and clarify misunderstandings. The participants reported that the programme could be improved by being tailored to specific subjects that students wanted to pursue at degree level alongside more step-by-step guidance around student finance. Although this was a small narrative study, these findings could aid HEPs in calibrating their FE outreach work.

A 2018 project funded by the OfS targeted undergraduate students from BAME backgrounds and neighbourhoods with low levels of participation in education for an IAG programme on progression to postgraduate study (OfS, 2019). Conducted at five Russell Group universities, the programme recruited 6,000 students for the study, which used a causal design and provided medium-strength evidence in favour of IAG's impact on BAME learners' postgraduate progression.

Study participants attended two IAG workshops led by alumni from respective providers who had progressed to postgraduate education and were also from disadvantaged groups. The first workshop involved information on applying for postgraduate courses and student finance options. The second session was subject-specific, with students participating in a taster lecture relevant to what they reported wanting to study at a postgraduate level.

A 2019 evaluation of the programme described how the participating providers randomly assigned eligible students to intervention groups who received the IAG and control groups who did not. Baseline survey data were collected on 1,200 students, although this figure decreased to 600 by the endpoint when students graduated. This quantitative data collection was triangulated with focus groups and case studies to develop a picture of students' experiences of the programme.

Comparing progression, the study found that students in the control group had a 9% higher rate of enrolment in postgraduate education than those in the intervention group at baseline. Factoring in attendance at both IAG sessions, the researchers found that the individuals in the intervention group were 22% more likely to progress to postgraduate education.

Despite the robust study design, the experiment suffered from a large loss of data between baseline and endpoint. This was especially the case in the control group, meaning that comparisons between the two groups were undermined by attrition. However, the study also has qualitative data on those features of the programme that students found to be effective.

Students in the focus groups reported finding interaction with postgraduates from similar backgrounds to themselves to be helpful. The insights on student finance were described as especially revelatory as students often found standard IAG on the subject confusing. This was especially the case in relation to the general cost of postgraduate education and the availability of loans.

More speculatively, an OECD Working Paper surveyed how information on labour market outcomes is included on IAG websites across OECD Member countries (Hofer, Zhivkovikj & Smyth, 2020). In particular, the paper was interested in how this information can be included – and, more generally, digital materials can be designed – with a disadvantaged audience in mind. As part of its analysis, the paper used case studies to distil lessons for how centralised 'self-serve' IAG services could be improved.

The researchers adopted a theory-led approach with no impact data, making the study a narrative account of emerging evidence. That said, the guiding theory is grounded in robust findings in behavioural economics and conventions in best practice in interface design. Led by the theory, the authors set out specifications for what they believed an effective IAG website should look like. They then examined websites run by governments and education providers in all 38 OECD countries, selecting examples of effective and ineffective practices, with a particular focus on the IAG provided for disadvantaged student groups.

Examples of good practice observed included:

- Adding granular, provider-specific data on progression rates into particular jobs to help students make decisions that are more accurately tied to their likely labour market outcomes.
- Offering precise step-by-step guidance for mature students, as well as a self-assessment toolkit for progression to postgraduate education.
- Including specific IAG targeted at women, for instance, specific case studies of women succeeding in typically male-dominated professions.
- Offering a 'virtual welcome service' providing information on living and working in the country, targeted at recent migrants.
- Making IAG accessible and useful for disabled students by providing options to increase text size, text-to-speech and specific guidance directed at students with a wide range of disabilities.

Overall, while the study lacks outcome data on the effectiveness of any IAG portal, it makes several light-touch and easy-to-implement suggestions as to how education providers can improve their career websites. Sites can then easily evaluate these modifications for engagement and feedback with students via A/B testing.

Which features seem to be important?

IAG captures a broad spectrum of programmes, making it difficult to distil general features of effective practice. The evidence reviewed makes no systematic comparison of different IAG features within the same type of programme, for example through factorial study designs.

Nonetheless, our review tentatively suggests some common features of effective IAG. For career counselling, one-to-one guidance appears more effective than group sessions. There is also apparent value in this counselling being delivered by individuals from a similar background to the recipients of the IAG who have gone through a journey relevant to that in which the students are interested. For example, a BAME counsellor who has successfully progressed to postgraduate education may be best placed to provide IAG to a BAME learner looking to the same end. There is also suggestive evidence that developing a 'career plan' can be a good use of counselling time. This may involve providing clear signposting on financing options for training and direct guidance on roles and organisations to apply to.



Students report that written IAG, for example on careers portal websites, is more effective when it connects them to specific employment and training opportunities rather than providing generic employability advice. Similarly, there is suggestive evidence that IAG is of more value to students from disadvantaged groups when it offers case studies of graduates from the same groups who have succeeded professionally, as well as stepwise guidance on processes such as applying for particular vocational roles or accessing financial support for postgraduate education.

3.3.3 Technology-based solutions

The intervention

Some of the literature reviewed covers innovative applications of technology to improve graduate employment outcomes, including:

- work simulations
- video games
- e-Portfolios
- CV analysers

While evidence for the effectiveness of these innovations is limited, they provide proofs of concept for how education providers can develop novel solutions to improve graduates' employment outcomes. It should also be noted that each programme can be delivered at scale for relatively little cost. Investment in further research or in start-up costs for these programmes could potentially

generate large net savings for education providers while also improving the impact of their careers and employability services.

Findings and implications

- Work simulations can help students accrue some of the benefits of work experience in a controlled environment and at a low cost.
- The use of video games to improve employability skills may be supported by one study, but the intervention may struggle to obtain the necessary buy-in among staff and students in many education providers.
- e-Portfolios offer promise both as a method of improving careers and employment outcomes for young people and as a data stream for education providers to evaluate their careers and employability programmes.
- CV analysers are speculative technology but can be developed and calibrated to provide critical labour market insights to support providers' decision-making around career programmes offered.
- Overall, there is potential for education providers to leverage their resources in research and development to produce their own proprietary technology-based employment-improving careers programmes.

Strength of the evidence

This section primarily discusses emerging evidence for technology innovations discussed (see Table 5 below). The one study we identified with a causal design had a small sample size. We should interpret the evidence

in this section as suggestive of promising avenues for future research as well as offering direction for providers seeking to produce their own proprietary innovative technology to improve careers and employment outcomes.

Table 5: Technology-based solutions: evidence type and strength of the evidence

Strength	Evidence type			Total
	Narrative	Empirical enquiry	Causal	
Strong evidence	0	0	0	0
Medium evidence	1	0	1	2
Emerging evidence	1	2	0	3
Total	2	2	1	5

What does the evidence say?

Reference	Type of evidence	Methodology
Asiri, Greasley & Bocij, 2017	Narrative	Systematic review
Strachan, 2016	Empirical	Survey data analysis
Barr, 2017	Causal	Regression analysis
Mitchell et al., 2021	Empirical	Evidence review
Green, Liu and Murphy, 2020	Narrative	Data analysis

3.3.3.1 Work simulations

Work simulations use software to enable participants to acquire and practise the skills required for a particular job. They are common in vocational training – especially where real-life practice would involve a high level of risk. For example, student pilots use flight simulators to practise flying planes under a range of weather conditions, while trainee surgeons use surgery simulators to practise challenging procedures. However, we use this section to focus on simulations that can be used to develop more generic employability skills.

Aside from improving safety, work simulations have other theoretical advantages. Programmers can create virtual environments that allow users to concentrate on improving a specific skill without competing demands on their attention. This virtuality also allows training activities to be adapted more readily to the needs of learners, helping to advance their learning at a pace that is engaging and manageable for the user. Simulations can be delivered at scale at relatively low cost and are more accessible to students learning remotely or with access issues.

Our evidence review identified two papers that provide suggestive evidence on the effectiveness of work

simulations in improving employability outcomes for non-vocational roles. First, a systematic review of the use of simulation games to improve employability among business and management students (Asiri, Greasley & Bocij, 2017) surveyed 12 papers from the 2000s that were mostly narrative in their study design. The review provides medium-strength, narrative evidence that work simulations are used to develop a range of more generic interpersonal skills (e.g. teamwork and negotiation with difficult clients) while also developing industry-specific skills (e.g. working collaboratively to solve a mathematical puzzle). Students typically reported positive experiences of simulations, finding them an engaging way to trial skills and strategies they learn about in lectures. Students also reported a preference for learning skills from simulations rather than internships, as virtual, supervised tasks allow them to receive immediate, tailored feedback on their performance. For example, in a mock business negotiation, a tutor can immediately tell a student how to improve.

Careers staff also reported finding simulations especially useful as a way of providing imitated work experiences when actual work experience was hard to organise. Nevertheless, the authors conceded that

good evidence in this area is limited and more research is required before the approach can be strongly recommended. Importantly, work simulations may not have the same signalling power to employers as in-person work experience.

The second paper reports survey data taken from students at Southampton Solent University after they had played a business simulation game (Strachan, 2016). The work simulation, SimVenture, presented students with tasks that prompted them to exercise customer awareness and knowledge of processes and procedures in business and teamwork. A sample of 96 students with business and social science degrees used the software for a short course. 68% reported that the simulation had improved their 'overall business awareness', while 57% reported that they had engaged more with learning from the simulation than they would have done from a traditional lecture on the same skills. Qualitative analysis of students' free-text responses highlighted that they commonly claimed that the simulation had allowed them to learn about running an actual business, as well as developing skills in managing time and focus. However, the study's reliance on self-reported data, and the lack of a comparison group and pre-intervention data collection highlights a general issue with the literature on business simulations for improving employability: more robust research is required before providers can recommend them for more than piloting.

3.3.3.2 Playing video games

Commercially available video games are popular with students. Some researchers have speculated that these games can develop 'soft' skills that employers value – such as communication, teamwork and problem-solving skills. Our review pulled one study that tested this theory, concluding with positive results in favour of video games as an effective intervention for improving employability.

The study used an experimental design to randomly assign 72 HE students in Scotland to evenly sized treatment and control groups (Barr, 2017). Those in the treatment group were required to attend drop-in sessions in a controlled laboratory environment where they would play one of four commercially available video games for as long as they were interested and able to. The games used in the study included Minecraft, Borderlands 2 and Portal 2. Students were able to attend as much or as little as they desired, resulting in a wide range of engagement with the intervention.

Both groups were given a psychometric test battery at the start of the study and after three months had elapsed. The test assessed performance in various 'graduate attributes', including teamwork, communication skills and problem-solving. The study found a statistically significant improvement in the video game group's scores in communication, adaptability and resourcefulness compared to the control group. Although no effect size was reported, the author concluded that the study provides promising evidence of a low cost intervention that can generate high levels of engagement from students, while simultaneously improving skills that can improve employability outcomes. However, the study used a small sample (n=72), and allowing participants in the treatment group to select their level of engagement with the intervention may also have skewed the data to suggest that playing video games is more effective on average than is, in reality, the case. Therefore, future research and evaluation of this approach should draw on larger sample sizes and have higher levels of fidelity control over the video game intervention.

3.3.3.3 e-Portfolios

Some technological career innovations move services historically used offline into the digital realm: a widely used example can be seen in e-Portfolios – web-based substitutes for paper-based records of achievement that may be presented to employers.

We reviewed one paper that provides evidence suggesting the effectiveness of e-Portfolios as an employability-improving intervention, using a systematic scoping review to identify how prospective employers perceive e-Portfolios.

The systematic scoping review (Mitchell et al., 2021) surveyed 17 studies of attitudes to find that the majority of students reported a preference for e-Portfolios over paper versions. These digital records are easier to modify over time and easier to share with large numbers of employers at once through mass emails or by including them in a profile on recruitment websites.

The employers surveyed in the collected studies reported a preference for e-Portfolios because online records can be more comprehensive and include examples of written work, allowing employers to make more informed decisions in differentiating between candidates. Employers also reported that e-Portfolios allow students to demonstrate skills rather than simply claiming to possess them. However, these reported preferences need to be weighed against the fact that, despite any reported preferences, graduates are more likely to be required to submit a CV or written application than an e-Portfolio when applying for a job.

3.3.3.4 CV analysers

Students often seek feedback on their CVs as a way of improving their employability outcomes. However, this is extremely labour-intensive work for HEPs' careers and employability services. Our evidence review yielded one study that provided a narrative account of the development of an electronic CV analyser and summarised feedback from the university faculty on the outputs of the analyser. The initial evidence looks promising, albeit far from complete.

Green, Liu and Murphy (2020) describe a narrative, emerging evidence study into the creation of an Electronic Resume Analyser Portal (e-RAP) at a US university. This tool was developed to support computer science students in improving their employability. e-RAP scans the words in a student's CV before comparing it to job adverts on the most commonly used job websites for computer science graduates. The comparison is used to suggest particular job types to which a student is especially well-suited, based on matches between keywords in the CV and job adverts. The tool also scores how well students' CVs meet the specification of job adverts based on words included in both. e-RAP also identifies keywords that are common in job adverts but missing on a CV, suggesting new courses a student may pursue or skills they may develop to align their personal profile with particular professions.

The researchers tested e-RAP against a successive set of 62 CVs from final-year computer science students. The computer science faculty then analysed the output suggestions to determine whether the tool was producing recommendations as good as or better than teaching staff. The paper summarises comments from two reviewers, who note the utility of the tool in clearly marking out potential career pathways and making tangible suggestions for skills to acquire (e.g. one output recommended gaining operations and customer services experience for a career in cybersecurity). However, the study does not provide any detailed comparison of the approach with traditional methods of CV feedback, making it difficult to show that it is superior. The detailed account of the development of the platform also indicates the labour- and capital-intensive process involved if providers establish such a tool, especially as they may require different tools for different subject disciplines. Nevertheless, the higher initial costs may be offset by substantial savings in time and energy for faculty and career staff. More robust research is required to identify whether tools such as e-RAP can deliver this suggested impact.

Evidence on disadvantaged graduates

As the studies in this section are largely proof of concept for further research, they focus on general populations of students and graduates. As such, we found no specific evidence on disadvantaged groups and technological innovations to improve graduate outcomes. Future research should consider studying these groups if and when the evidence base for the non-disadvantaged population provides support for this investment.

Which features seem to be important?

This section covers a wide range of interventions, largely with emerging evidence to support their impact. It is therefore not possible to distil common features of technological innovations that impact graduate outcomes.

However, it is evident that students can self-administer the majority of the technological solutions discussed, which can be deployed with minimal oversight by careers and employability staff. If future research identifies that these technological interventions are effective in improving graduate destinations, then they can be rolled out as a cost-effective and efficient approach to closing gaps in labour market outcomes.

3.3.4 Teaching employability skills

The intervention

Surveys of employers routinely highlight that the latter look for specific skills and qualities when recruiting. Many education providers have sought to explicitly teach and develop these qualities in their students to improve their graduate employment outcomes.

Teaching these employability skills can take many forms. First, there are many different typologies of the skills that employers consider desirable. Programmes may involve such 'life skills' as teamwork and communication. Equally, they may aim to modify participating students' psychological attributes to prepare them better for the world of seeking and securing work. Programmes may be mandatory, folded into a degree course, or optional. They may also be delivered internally by a provider or by external partners.

Given this diversity of employability skills programmes, we clearly signpost in this section the specific skills on which each study focuses. We also exercise caution in aggregating interventions in summaries.

Findings and implications

- Research connecting employability skills programmes to concrete employment outcomes is relatively limited. The research is dominated by the use of proxy constructs as performance indicators (e.g. networking, communication skills, self-motivation) rather than labour market data.
- Student feedback suggests that transferable skills, which can be explicitly taught through employability programmes, are related to career satisfaction and earnings.
- However, some evidence suggests that employability skills programmes are relatively ineffective when compared to interventions such as work experience. This variation points to the importance of course content in employability skills programmes and employers' perceptions of these programmes in supporting changes in outcomes.
- Academic departments and careers services can conduct their own data-driven research to understand the skills their graduates require to succeed in the job market. This can guide their programming for current students.

Strength of the evidence

No studies with a causal design were included in the employability skills evidence we reviewed (see Table 6 below). Only four papers drew explicitly on labour market outcome data, with the papers using proxy outcome variables or student feedback on their experience of the programmes. The evidence base on employability skills is of mixed reliability. This issue is exacerbated by the wide range of bespoke programmes studied in the literature, making the aggregation and comparison of studies challenging.

Table 6: Teaching employability skills: evidence type and strength of the evidence

Strength	Evidence type			Total
	Narrative	Empirical enquiry	Causal	
Strong evidence	0	0	0	0
Medium evidence	0	3	0	3
Emerging evidence	3	5	0	8
Total	3	8	0	11

What does the evidence say?

Our evidence review produced 11 studies on teaching employability skills. Two papers described how university departments could adapt their employability skills instruction for the labour market their graduates will enter. Three other papers analysed large datasets to uncover the relationship between being taught employability skills during education and securing employment upon graduation. One study adopted a similar longitudinal and quantitative approach but analysed a specific programme in employability skills instruction. Another evaluated the impact of

subject-specific employability skills instruction, aimed at careers that the students were likely to pursue after their studies. A further paper captured students' reflections on a generic employability skills programme, suggesting how these courses could be modified for effectiveness. A formal report shared case studies of effective employability skills teaching from across Europe. A final set of two studies assessed the extent to which education providers can improve the psychological competencies theoretically (though not empirically) associated with graduate employability.

Reference	Type of evidence	Methodology
Stewart, 2021	Narrative	Content analysis
Shah, Pell and Brooke, 2004	Empirical	Survey data analysis
Percy and Emms, 2020	Empirical	Regression analysis
Eimer and Bohndick, 2021	Empirical	Regression analysis
Valdes, Santa Sorano and Alvarez, 2017	Narrative	Case study
Scott and Willison, 2021	Empirical	Survey data analysis
McSweeney and Zhang, 2021	Narrative	Case studies
Koen et al., 2012	Empirical	Regression analysis
Calvo and Garcia, 2020	Empirical	Regression analysis
Mason, Williams and Cranmer	Empirical	Regression analysis
HE Funding Council for Wales, 2012	Empirical	Regression analysis

3.3.4.1 Identifying desirable employment skills

Most approaches aiming to determine what makes a graduate 'employable' depend on surveys of employers. Stewart (2021) modelled an alternative approach, conducting a content analysis of 130 online job adverts relevant to environmental sciences students in Australia. The analysis identified several recurrent keywords and associated skills such as knowledge of Geographical Information Systems, project management and report writing. These skills appeared just as frequently in adverts for more senior roles as they did for more junior and entry-level roles. The researcher's university department adapted its course structure to promote the development of these specific employability skills. While there was no outcome data on this change, the paper captured how a data-driven approach to determining employability skills can ground its instruction in actual labour market demand.

Shah, Pell and Brooke (2004) highlighted a more conventional approach toward gathering intelligence to inform employability skills instruction. A survey sent to 204 recent graduates of the BSc in Environment Protection or Conservation at Bournemouth University asked what skills they were exercising most in their current occupations. Responses indicated that numerical reasoning, business awareness and fieldwork research were the skills they depended on most but had been undereducated in while studying. Of the respondents, 55% suggested that these skills should be integrated into teaching in the departments. This also points to another way that universities can iteratively match their employability skills provision to the labour market.

3.3.4.2 Employability skills programmes and employment

Percy and Emms (2020) used longitudinal survey data from 7,400 graduates captured one year and five years after completing their studies (see Section 3.3.2.1 for a full description of the methodology). From the data captured at five years, the students who were most likely to report having gained transferable skills during their degree were also the most likely to report high levels of career satisfaction. This relationship was found to be statistically significant. A significant relationship was also found between the acquisition of transferable skills as part of a degree programme and salary upon graduation, although this association was relatively weak. It should be noted that the study did not capture data on how transferable skills were taught, making it difficult to attribute the observed effects to mandatory or optional employability skills programmes. The data in the study also depended on student recollection, self-assessment and self-reporting of what the students had learnt at university five years after they had graduated.

A less positive association between instruction in employability skills and labour market outcomes is found in a paper by Mason, Williams and Cranmer (2009) which correlates the teaching of employability skills and graduate employment outcomes (the full methodology is described in Section 3.3.1.1). With a relatively robust design that produced medium-strength evidence, the study used survey data on the employment outcomes for 3,859 graduates who had been students in a wide range of subjects in 32 university departments. For each of these departments, the researchers conducted fieldwork

to assign each a score on the extent to which they prioritised and provided direct instruction in employability skills. Their analysis concluded that there was no relationship between the teaching, learning and assessment of employability skills and labour market outcomes for students. This extended beyond merely obtaining employment to the quality of employment in roles requiring 'graduate-level skills'. The researchers concluded that employability skills may be best learnt through internships and work experience opportunities rather than through direct instruction.

A 2021 study in Germany conducted a similar association-based data analysis and concluded that giving students opportunities to participate in sports and volunteering can improve their employability (Eimer & Bohndick, 2021). We classify this evidence as emerging, empirical enquiry. The researchers surveyed 429 HE students in law and education. The survey battery collected demographic data, information on extracurricular activities and data from a sequence of psychometric tests measuring knowledge and skills in areas associated in prior research with employability, such as networking, information gathering, communication skills and self-motivation. Analysing the relationships between the different variables, the researchers found that both volunteering and participation in sports were associated with greater employability skills. They concluded that providers can encourage the development of employability skills through these activities. This effect endured after they had controlled for demographic characteristics – such as ethnicity, gender, household wealth and whether the students were the first from their family to attend university. While the study offers valuable insights, it did not link to actual employment outcomes. Equally, it did not reveal whether these employability skills are developed through activities (such as sports or volunteering) or whether a higher aptitude in employability skills increases the likelihood of students engaging in these activities. We should therefore be cautious in applying these findings directly to practice.

The GO Wales programme (outlined in more detail in Section 3.3.1.1), aimed to improve graduate employability and featured a course in employability skills that was evaluated in a 2012 study (HE Funding Council for Wales, 2012). The scheme recruited 225 students to participate in a 'Graduate Academy', where participants were taught employability skills (focused on developing management and leadership skills) at a two-week residential course. In total, 81 of the participants were surveyed six months after graduating. A further 41 students who did not

participate in the Graduate Academy were surveyed at the same time as a comparison group. Comparing the groups, those who had participated in the employability skills programme were more likely to be in work and, on average, were earning £3,300 more than their control counterparts. However, the relatively small size of the control group and the lack of methodological correction for self-selection into the programme may explain some of these differences. Only 31% of students in the programme reported a belief that participation had improved their leadership skills. It may therefore be difficult to derive a strong conclusion in favour of employability skills instruction.

3.3.4.3 Narrative studies on employability skills programmes

Valdes, Santa Sorano and Alvarez (2017) evaluated a programme aimed at developing industry-specific employability skills in students studying fashion, events and public relations. The programme taught students about personal branding, the use of social media and online networking. Students were surveyed before and after the course. Upon completion of the programme, the number of students engaging in behaviours that the researchers believed increased their likelihood of employability – such as searching social media to build contacts for networking – had doubled. The number of students engaging in general internet searches to find individuals to email for work opportunities increased fivefold. The study is only a narrative account of emerging evidence and provides no insights on whether these behavioural changes led to actual improved employment outcomes. However, it suggests that well-targeted, subject- and career-specific employability skills may be effective in modifying behaviours that can lead to improved performance in the labour market.

A study by Scott and Willison (2021) gathered survey data on a generic employability skills module delivered in the UK and Australia to undergraduate chemistry students. The programme was entirely voluntary and included modules on self-promotion, social media, workplace culture and crisis management. After the course, 108 students in the UK and 85 in Australia provided feedback via a survey, broadly showing that students had found the techniques learnt during the workshops to be useful. The study underscores the importance of using student feedback to iteratively improve employability skills courses so that they are well adapted to students' needs and make the best use of limited resources.

The European University Association's report on how universities across the continent offer employability skills includes relevant narrative

case studies (McSweeney and Zhang, 2021). For instance, University College Cork (in Ireland) has a strong centralised employability skills strategy. All departments are required to use a standardised self-evaluation tool to reflect on the extent to which they teach employability skills and the quality of this provision. The tool also suggests paths to improvement, such as assessing employability skills through activities outside the classroom. Jyväskylän University in Finland also uses a standardised, centralised curriculum, which includes mandatory learning in problem-solving and the culture in modern Finnish workplaces. The Tbilisi State University in Georgia conducts surveys of employers and analyses of the job market to determine the skills its students need to develop to prosper in the labour market. Its employability skills teaching is then modelled in response to these findings (see Section 3.3.4.1 for more on this approach).

3.3.4.4 Employability skills, career adaptability and psychological capital

'Career adaptability' is characterised in the literature as a readiness for both the predictable and unpredictable aspects of changing job or career. Koen et al. (2012) evaluated a programme in the Netherlands to teach career adaptability to 93 students. The students were evenly and deliberately assigned to intervention and control groups (using a quasi-experimental design) and surveyed before and after the programme. The researchers found that, at the endpoint, there had been a statistically significant improvement in the intervention group's sense of control over their careers, their curiosity about finding out about different careers and their concern for effective performance in a career when compared to the control group. With all these qualities nested under career adaptability, the researchers concluded that the programme was successful in improving career adaptability. However, although an empirical enquiry study, the paper is theory-driven and provides no direct evidence that career adaptability is correlated with improved employment outcomes.

'Psychological capital' refers to an individual's understanding of their strengths and weaknesses and their ability to articulate and play to these characteristics. Previous research has theorised that psychological capital is associated with employability skills. An empirical enquiry study by Calvo and Garcia (2020) deployed a psychometric

test battery with 236 business administration and management students in Spain to determine whether measures of psychological capital correlate with typical measures of employability skills such as teamwork, communication and adaptability. The study found a medium correlation between these skills and psychological capital, leading the researchers to believe that education providers should further investigate interventions that can promote the latter's development.

Evidence on disadvantaged graduates

Our review identified no studies conducted to understand the impact of employability skills programmes on disadvantaged students. It is also difficult to infer the effects of such programmes on disadvantaged populations from the results of studies conducted on the general student population, as the content of each employability skill course varies greatly. Although more research is needed into employability skills instruction and disadvantaged students, the weak support for the effectiveness of such interventions in the existing literature suggests this should not be a pressing research priority.

What features seem to be important?

There is a high degree of variation in the content of employability skills programmes in the literature we reviewed. Combined with the mostly emerging evidence base, it is difficult to identify precisely the most impactful employability skills programme content or delivery methods.

Nonetheless, the studies we reviewed suggest some common success factors. Coordination between taught skills and the skills required in the labour market appears to be key. As a consequence, a strategic approach to identifying these skills – through surveys of previous student cohorts or studying job adverts – may be an effective antecedent to the delivery of employability skills programmes.

This may be further supported by taking a subject-specific approach to teaching employability skills, based on the careers that graduates are likely to pursue and the skills they will require. There is mixed evidence for generic employability skills workshops, suggesting that a more strategic approach to understanding demand in the labour market and responding accordingly is a more effective way of improving graduate outcomes.

3.3.5 General interventions targeted at disadvantaged groups and delivery considerations

As described in Section 2, students from some demographic groups have poorer career and employment outcomes than others. Our literature review uncovered relatively few papers assessing the impact of specific interventions to support these groups. Where they were retrieved, they are summarised as part of the section describing the particular intervention they investigated.

This section summarises three additional pieces of evidence which identify a particular disadvantaged group and examine the interventions that are effective for that group or the attitudes of the group towards such interventions.

Findings and implications

- 'Work simulations', internships and mentoring can be effective approaches to supporting disabled students into work.
- Students with autism report wanting their education provider to support them during internships.
- While there is little evidence on 'what works' for students from linguistically diverse migrant and refugee backgrounds, one case study describes finding internship opportunities for this group of students that leverage their unique skills (e.g. lived experience and speaking languages other than English).

Strength of the evidence

A meta-analysis in this section provides medium-strength evidence on programmes that can support disabled students (see Table 7 below). However, the other two pieces of evidence collected in this section did not involve testing the effectiveness of programmes. Instead, they aimed to capture the attitudes and experiences of disadvantaged groups in order to inform the planning of careers and employability programmes by education providers. While one study drew on a British population and, thus, may accurately reflect the experiences of some disabled students in the UK, it is important to note that the other paper's findings on the experiences of migrant students in Australia may not necessarily be transferable. These findings should therefore be treated cautiously, as a prompt for further investigation rather than providing direct insights into the experiences of the same disadvantaged group in the UK.

Table 7: Stakeholder consultation of disadvantaged groups: evidence type and strength of the evidence

Strength	Evidence type			Total
	Narrative	Empirical enquiry	Causal	
Strong evidence	0	0	0	0
Medium evidence	1	0	0	1
Emerging evidence	0	2	0	2
Total	1	2	0	3

What does the evidence say?

The three papers we reviewed did not evaluate specific interventions. Instead, they provide stakeholder insights into how careers and employability services can be improved for disadvantaged groups.

The first study interviewed 30 young people with autism in Finland, France, the Netherlands and the UK to understand their experiences of their provider's careers and employability services (Pesonen et al., 2021). The young people reported finding career-specific IAG useful, but explained that this provision needed to be especially well advertised to secure their attention and attendance. Students appreciated that interview practice was useful, but worried that the simulated environments that careers and employability services offered were often too different from real work environments to help them feel prepared and confident when attending interviews. Students generally expressed a preference for work experience as a fitting preparation for the working world but worried that employers would be hesitant to take them on due to their disability. They reported wanting their education providers to build close partnerships with employers and to act as champions in communicating their skills and value to employers, to increase the likelihood of their being accepted for work experience.

A systematic review of programmes supporting disabled people into work corroborates some of these stakeholder insights. Smith et al. (2017) reviewed 46 articles and found three studies showing that programmes that use internships or job simulation training are effective in supporting students with autism into work. In particular, Project SEARCH, run in the US, consisted of a nine-month programme in which participants rotated through numerous internships. Statistically significant differences in employment were found between the intervention group and a control group, with participants in Project SEARCH showing significantly higher rates of employment one year after participation. However, it should be noted that participants self-selected to take part in the programme, making motivation a potential cause of difference between the control and treatment groups. Another study found a combination of work

experience with an employer and job simulation to be effective in improving employment for young people with autism. Participants described this as an opportunity to trial behaviours in a safe environment before deploying them in a real-world setting.

The review conceded that there is very little evidence on how to improve employment outcomes for students with physical disabilities. However, one summarised study provided suggestive evidence that connecting students to employed individuals with similar disabilities to act as mentors can improve students' sense of self-efficacy and motivation in seeking employment after graduation.

A third study conducted surveys and interviews with 32 careers staff across Australia to understand how to improve employment outcomes for students from culturally and linguistically diverse migrant and refugee (CALDM/R) backgrounds (Dunwoodie et al., 2021). Overall, four challenges to improving practice were identified: difficulties in identifying in-need students and engaging them; a lack of targeted resources and programmes; difficulties faced by students in engaging with employers; and a lack of work readiness.

Universities typically reported a lack of partnership between careers staff and equity and diversity staff, leading to problems in identifying CALDM/R students in need of support. They also reported difficulty in communicating issues relating to visa status and work permits to potential employers of CALDM/R students for internships.

In consequence, careers staff claimed that collaboration between careers and equity and diversity teams in identifying CALDM/R students for support and preparation for work-visa-related conversations could improve employment outcomes for this disadvantaged group. One university also reported developing a specific partnership with an employer to support CALDM/R students in internships. By identifying a non-profit organisation that would benefit from the language skills and lived experience of CALDM/R young people, the university was able to persuade the employer to enter into a mutually beneficial partnership.



4. CONSULTATIONS

4.1 METHODOLOGY

4.1.1 Rationale and research questions

The previous sections of this report explored the extent of disparities in labour market outcomes and potential solutions. This section considers the measures that education providers in the UK are currently taking to close employability gaps for disadvantaged students, as well as the successes, challenges and delivery considerations for education providers when engaging in this work.

To generate these insights, we conducted a consultation with 27 relevant leaders across FE and HE. We adopted a mixed-method approach, using surveys and focus groups to gather insights. The following research questions guided our investigation:

- What careers and employability programmes do providers target at disadvantaged groups and how is this targeting conducted?
- What is the uptake for careers and employability programmes among disadvantaged students, including targeted programmes?
- What are the successes and challenges of targeted careers and employability programmes among disadvantaged students?
- How do education providers evaluate their targeted programmes and what are the challenges they experience in doing this?
- What are providers' and organisations' attitudes towards evidence and innovation in careers and employability practice?

4.1.2 Sample

We purposely recruited consultation participants to represent a wide range of practices from a variety of different types of providers. To do this, we established the following sampling frame, with the aim of recruiting at least six participants working in careers, WP or employability strategy from each type of provider or organisation:

- Russell Group universities
- FE colleges
- Post-1992/metropolitan universities
- Small, specialist providers
- Other organisations working on careers/employability outcomes for disadvantaged students (including think tanks as well as professional bodies and associations)

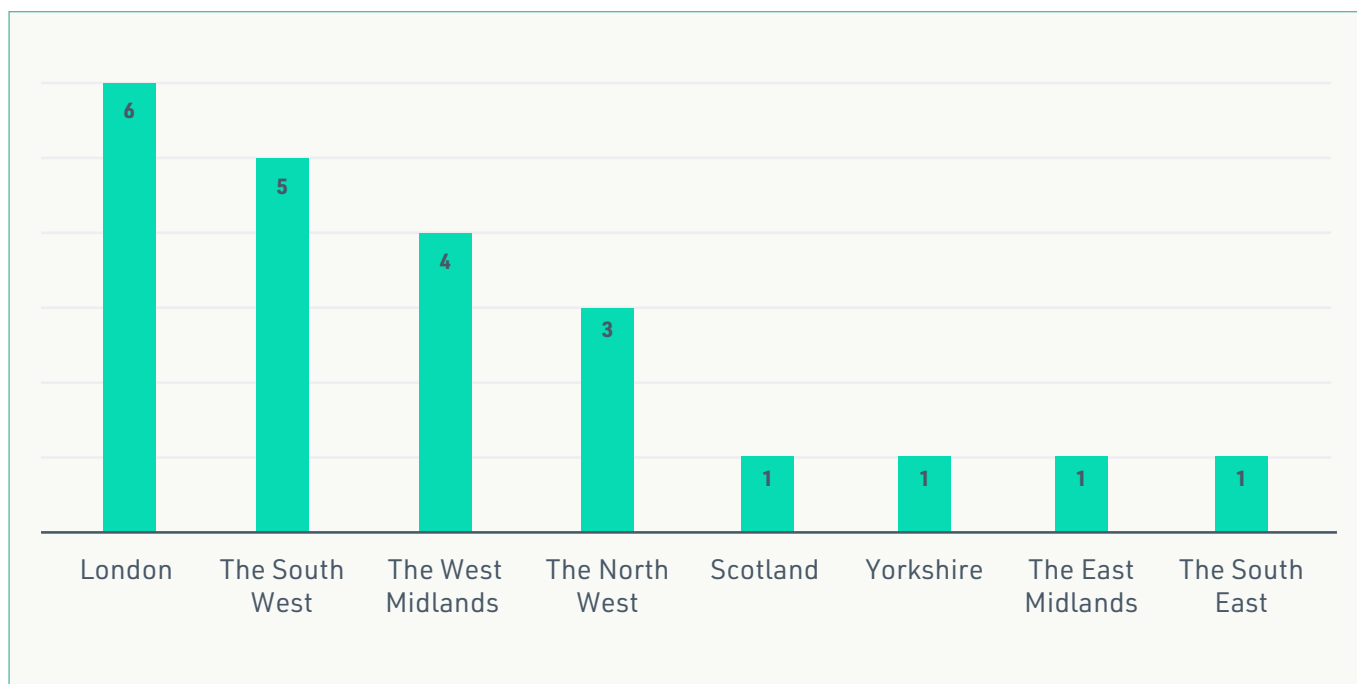
We also conducted desk research to identify and list providers engaged in distinguished or innovative practice in improving the career and employment outcomes of disadvantaged students. This list was combined with a long list of education providers from across the UK, drawn from our own network. This blended list allowed our sampling strategy to capture both typical and atypical practices in the sector. All providers and individuals on the longlist were contacted by email with an invitation to participate in our consultation.

We recruited 30 participants for the consultation. Three participants completed surveys but were unable to participate in the full consultation. Four participants took part in the roundtable component of the consultation but were unable to complete surveys. Three participants withdrew entirely from the research due to scheduling conflicts; this gave us a total sample of 27 participants. Of the participants, 70% held leadership roles in their provider or organisation, with the remainder comprising researchers or support staff. The table and figure below provide, respectively, information on participants' provider type and regional location.

Table 8: Number of participants by provider type

Type of provider or organisation	Total number of participants
Russell Group universities	6
FE colleges	2
Post-1992/metropolitan universities	11
Small, specialist providers	2
Other organisations	6

Figure 13: Number of participants by region in the UK*



Before participating in the consultation and completing a survey, participants provided informed consent and were given the opportunity to read our data and privacy policy.

4.1.3 Methods

Participants were invited to one of five remote consultation sessions based on which of our five target groups they worked in. A sixth consultation was held for those unable to attend their designated session.

Each session began with a briefing on the research and a recap of our consent and right to withdraw protocol. We then adopted a 'captive audience' approach to collecting survey data, asking participants to spend the first 10–15 minutes of the session completing a short online survey (see Annex X). This ensured that any questions from participants could be fielded and guaranteed the collection of quantitative data to supplement our wider consultation. Survey themes included:

- specific interventions offered by providers and the groups of disadvantaged students targeted;
- experience of delivering interventions targeted at disadvantaged groups, including their uptake, successes, challenges and cost;
- providers' approaches to evaluation and innovation.

After completing the survey, participants then engaged in a focus group guided by a set of questions and discussion points based on our research themes. Discussion themes included:

- how providers had adapted their careers and employment provision to COVID-19 public health measures and the impact this had on students;

- the complexity and drawbacks of targeting interventions at disadvantaged students;
- the successes and challenges involved in conducting evaluations of interventions aimed at disadvantaged students.

We also utilised a digital whiteboard tool to allow session participants an alternative method of recording their responses to questions. Each session typically lasted between an hour and 90 minutes.

Survey data was aggregated for quantitative analysis. Focus group sessions were recorded and then professionally transcribed for analysis.

4.1.4 Data analysis

The survey data was cleaned and analysed using Microsoft Excel. Transcripts from the sessions were analysed using inductive thematic coding to allow us to be reactive to the themes that participants raised, rather than prefiguring them. The themes identified in the transcripts were also triangulated with the survey findings to produce the detailed characterisations of practice found in Section 4.2.

4.1.5 Limitations

While we were able to recruit one-quarter of all Russell Group universities and one-sixth of all post-1992/metropolitan universities, we had limited participation from FE colleges in our consultation and are therefore less likely to have captured the full spectrum of practices present within this type of provider.

4.2 FINDINGS

4.2.1 Disadvantaged groups targeted by education providers

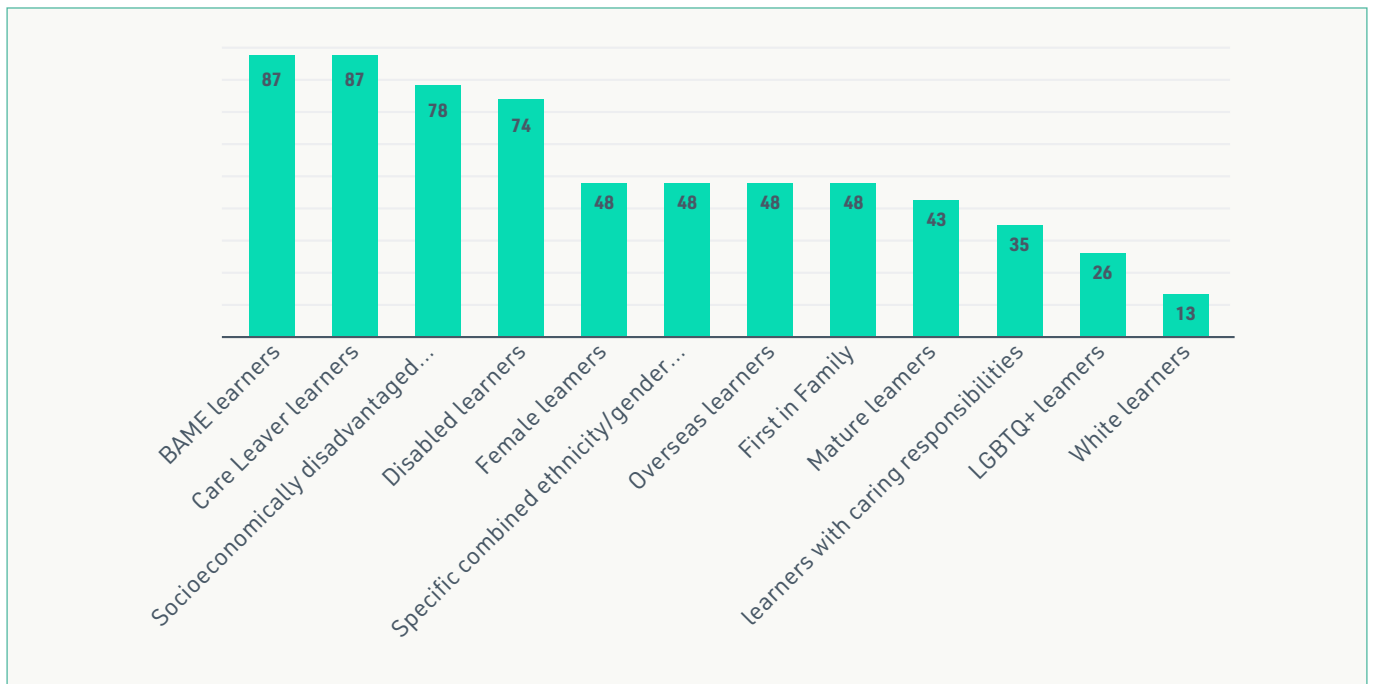
4.2.1.1 Targeted groups

The respondents to our consultation were most likely to target careers and employment interventions at learners who are BAME, care leavers, socioeconomically disadvantaged or disabled (see

Figure 14 below). They were least likely to target interventions at learners who are mature, LGBTQ+, White or hold caring responsibilities.

Some types of provider appeared to be more likely to target particular groups of disadvantaged students. Five of the six Russell Group consultees targeted interventions at LGBTQ+ learners and overseas learners, while the post-1992 and small, specialist providers in our sample were much less likely to target these groups.

Figure 14: Disadvantaged groups by the percentage of consultees who target careers interventions at them



4.2.1.2 Approaches to identifying target groups

Providers described a wide range of approaches to deciding which disadvantaged groups to target for intervention. Five providers described a top-down strategic approach, where their target groups are derived from their provider's Access and Participation Plan. These plans, required by the OfS, detail a provider's vision and proposed strategy for improving the participation and progression of disadvantaged students.

This relationship between careers services and WP teams was common to several providers. Two providers described an approach to targeting in which anyone who enrolled and was identified as disadvantaged by the WP team would be approached with the offer of an IAG session that would develop an individual career plan including further programmes. Another provider reported ringfencing places on all their careers programmes for students flagged as WP

by the relevant team. Two careers teams work directly with the WP society at their university to offer targeted programmes, such as internship programmes and IAG talks targeted at BAME students. They described being able to cover a broad range of disadvantaged students without focusing on individual demographic groups.

A high-tariff university offered an overview of how their careers department works with their WP team to conduct outreach in their local community. This approach builds relationships between career practitioners in the university and the WP students who are likely to enrol in the university. It also provides information on the specific WP individuals the careers department should target and which programmes they should offer.

Four institutions adopted a more data-driven approach to targeting. One FE college, participating in the OfS-funded 'Future Quests' programme, described using student data on postcodes to target students from low

participation areas in their community for additional interventions on progression to HE. One Russell Group university uses data on graduate outcomes to identify disparities between demographic groups, targeting future interventions at those groups which have relatively worse outcomes. These interventions included messaging about internship opportunities and invitations to demographic-specific IAG seminars. A post-1992 university conducts an annual survey on students' career confidence at the start of the academic year and uses the findings to target programmes at particular demographic groups who have especially low career confidence and readiness.

4.2.1.3 Preference for universal provision and whole-institution approaches

Our consultation participants generally preferred to create a careers and employability offer provided universally and made as accessible as possible for disadvantaged groups, rather than targeted at specific disadvantaged groups. They also favoured whole-institution approaches in order to make positive employment outcomes for students a priority in departments other than careers, including in subject faculties, WP teams and beyond.

Providers offered several reasons for this preference for universal provision. One Russell Group university claimed that targeting is based on a 'student deficit' model of education, which assumes the support that students need without thorough consultation. A post-1992 university and a Russell Group university respectively noted that over 75% of their intake are members of one or more disadvantaged groups. They argued that it is economically more effective for them to invest in a high-quality universal offer rather than attempting to spread limited resources over multiple targeted programmes. The same reasoning was applied to justify whole-institution approaches.

Two providers highlighted limitations to the demographic data they use for targeting. In particular, they found POLAR4, ethnicity and FSM status to be crude proxies for whether individual students may benefit from targeted careers and employment support. Both providers worried that reliance on these measures resulted in the misdirection of resources from other in-need students with different characteristics.

Five providers described concerns about how targeted programmes could stigmatise disadvantaged students, acting as a barrier to engagement. One provider explained that many of their disadvantaged students do not necessarily think of themselves as disadvantaged in the labour market and that it was difficult to persuade

them of the importance of engaging in targeted programmes. An online post-92 university described how an awareness of stigma had motivated them to reconsider their messaging on universal programmes.

Several providers flagged that the students they most want to reach are frequently the hardest to engage. Five providers reported a low uptake for programmes targeted at learners with caring responsibilities, mature students and disabled students because these individuals often had commitments outside education that made it difficult for them to participate in extracurricular activities generally. One small, specialist provider described how the demanding nature of their courses meant that disadvantaged students, with long commutes at the end of a day of classes, often simply lack the energy to participate in extracurricular careers programmes.

As a solution, two providers described how they had invested in making their responsive IAG offer more accessible. This involved using training from an external provider who gave a talk for careers staff on the best approaches to working with specific disadvantaged students.

However, more ambitiously, several providers reported that including careers and employability programmes in course commitments is the best way to reach disadvantaged groups. Students are more likely to attend these sessions as they contribute to their final degree classification and fall during the working day. Hence, providers had worked to introduce mandatory career components into lectures and seminars.

"It's important to think about some kind of universal provision because if it's left to be a voluntaristic act... then it's going to disadvantage those who are working, those who are commuting students, those who perhaps have got issues with confidence – lots of disadvantaged groups. And what you'll find is that those groups who you most want to reach are probably going to access your services least."

For example, a Russell Group university introduced mandatory careers advice and employability skills sessions for all first-year undergraduates. It has also established a week-long 'employability challenge' programme for first- and second-year undergraduate students in the Engineering faculty. Many post-1992 university participants described having folded some of their careers and employment programmes into course curricula, with the explicit aim of extending their reach.

Two providers were candid about the challenges of this approach, noting that it was frequently difficult to acquire buy-in from subject faculties and that it placed a strain on their departments' limited resources. One Russell Group university also reported that this approach may lead to more disadvantaged students 'participating' in careers programmes but not necessarily 'engaging' with them, resulting in them gaining little from the sessions.

Participants reported similar motivations for adopting a whole-institution approach to employability support. Once again, issues around programme uptake and the will to create shared goals, frameworks and vocabulary for improving outcomes for disadvantaged students were highlighted to justify this type of approach.

Beyond that, respondents recognised that their careers and employability departments were frequently held solely to account for the careers and employability outcomes of disadvantaged students, even though many of the careers-improving activities in which students engage – such as volunteering, extracurricular activities and core studies – fall outside the remit of careers teams.

Finally, careers leaders observed that a whole-institution approach generates novel employability-improving programmes. For example, a small specialist provider of dramatic arts education described how developing project work across departments could support the employability of disadvantaged students.

Several providers had already adopted a whole-institution approach, at least in part. For two providers, this involved providing training to academic and

teaching staff on the challenges faced by students from disadvantaged groups in the labour market. Two providers noted that students frequently had much better knowledge of and relationships with their course instructors. This was observed to be especially the case for disadvantaged students such as mature students and carers, who may be less engaged with the overall offer of the institution. Both these providers had begun the process of training up academic and teaching staff to provide basic IAG to students, including signposting to the most appropriate career leads within the provider.

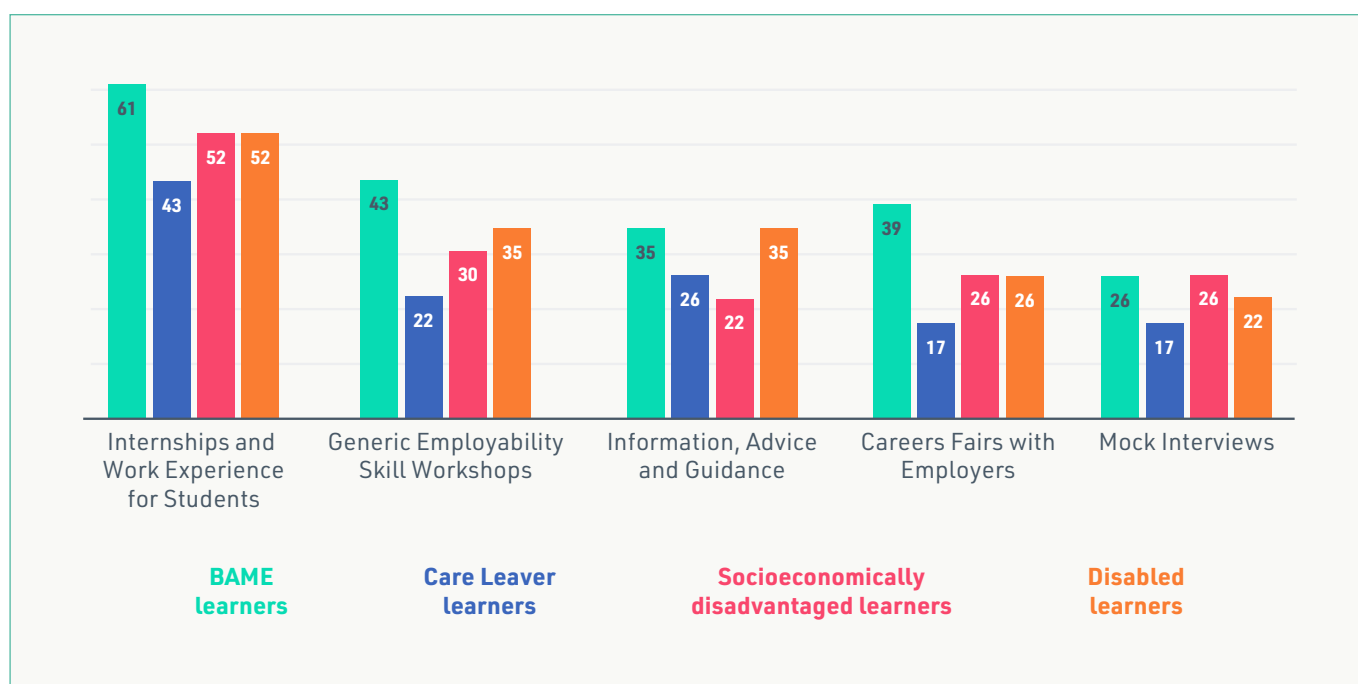
Similarly, one Russell Group university had embedded career leads within specific academic departments and noted that this had helped them to reach disadvantaged students. A post-1992 university described how taking their work outside the careers department had removed some of the stigma and uncertainty that disadvantaged students associated with visiting their employability services.

A whole-institution approach relies on staff within HEPs reconsidering the division of labour around improving labour market outcomes for disadvantaged students. As HE policy continues to impose greater accountability on providers for these outcomes, this holistic approach may become increasingly attractive to providers.

4.2.2 Programmes targeted at disadvantaged students

As summarised in Figure 15, internships and work experience, employability skills and IAG were the most common interventions targeted at the disadvantaged groups highlighted in Section 4.2.1.

Figure 15: Interventions by percentage of consultees who offer them to certain disadvantaged groups



Consultees were also enthusiastic to discuss particular targeted programmes that their provider had established or pioneered. One post-1992 provider described an annual residential week for White, working-class male students, which they felt was expensive but successful (although they were unclear on the measure of this success). A Russell Group university and a post-1992 university respectively described programmes that connect socioeconomically disadvantaged learners with work experience in foreign countries, supported by a fund that covers students' travel and subsistence abroad.

Three providers discussed mentoring opportunities for BAME and socioeconomically disadvantaged students, with an emphasis on matching students with mentors from a similar background. Related to this, one provider described efforts to recruit careers and employability staff from more diverse backgrounds, while another had worked to increase the diversity of their speakers during career events.

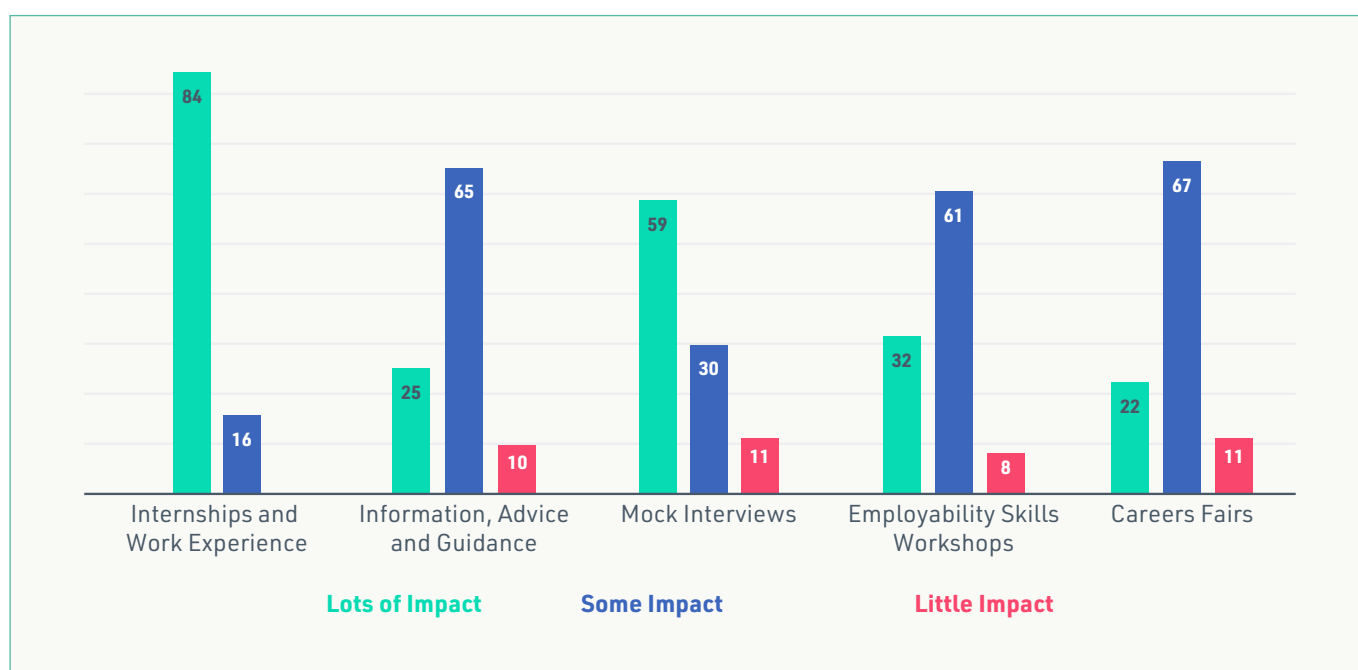
One post-1992 university reported offering start-up loans to disadvantaged students towards the end

of graduation to support them in launching their own businesses. A Russell Group university runs a programme that allows local employers to recruit disadvantaged students to advise them on making their recruitment practices and workplaces more accessible. They argue that, in parallel to making the local labour market more accessible to disadvantaged students, this approach also has the potential to upskill participating students.

4.2.2.1 Impact of targeted interventions

Figure 16 below shows that our consultees generally found internships and work experience to be the most impactful targeted interventions. They viewed mock interviews as another high-impact intervention but tended to feel that IAG, employability skills training and careers fairs had less impact. Section 4.2.3 describes and analyses how the respondents evaluated their interventions and engaged with evidence to reach these conclusions.

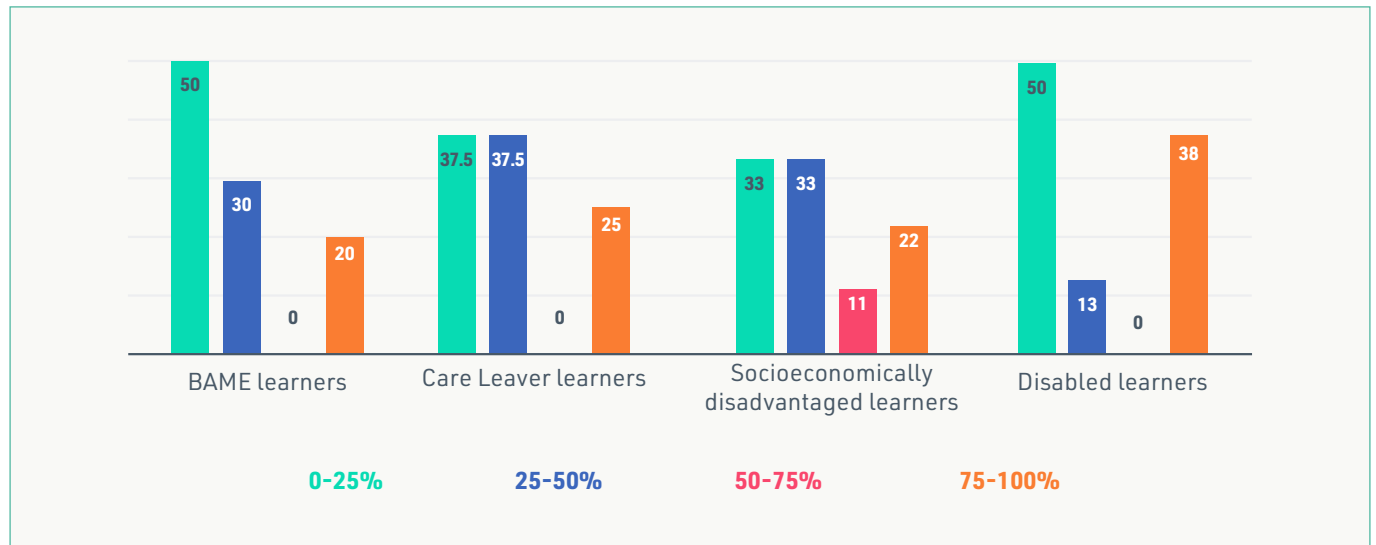
Figure 16: Targeted interventions by percentage of consultees reporting levels of impact



As discussed in Section 4.2.1, consultees raised the concern that bespoke programmes often failed to recruit enough of their target students. Figure 17 identifies the different rates of participation in targeted

interventions by groups of disadvantaged students according to our survey data. The consultees felt that disabled learners were the most likely to be reached by targeted interventions.

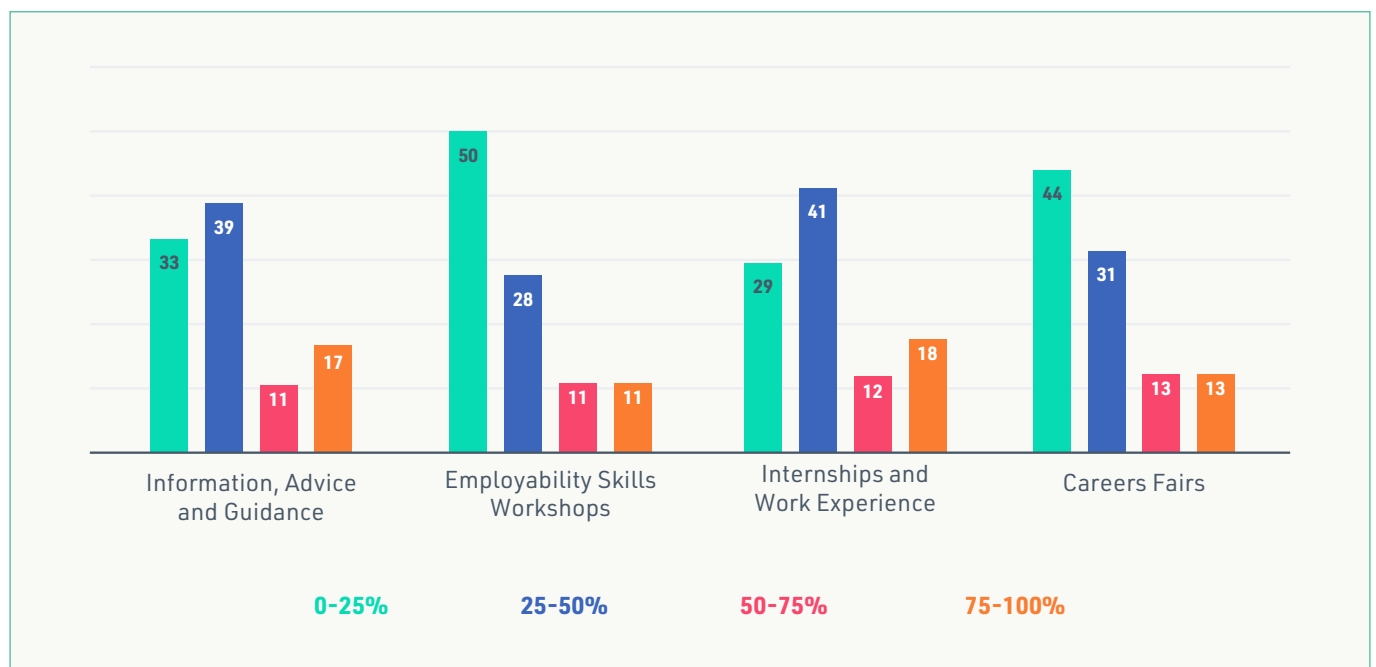
Figure 17: Disadvantaged groups by percentage of providers levels of participation in targeted interventions



In order to place consultees' reported participation rates for disadvantaged students in context, we also asked them to report on participation rates among the

general student population. Figure 18 summarises this general participation data for specific interventions.

Figure 18: Interventions by rates of participation among the general student population



The consultees felt that most interventions with a general non-disadvantaged population have a participation rate below 50%. Employability skills workshops and careers fairs have particularly low reach with students generally. Therefore, it appears that participation in career interventions by disadvantaged students is broadly in line with that of the wider student population.

Our consultees also felt that low participation rates were due to limited awareness among students of the careers offer available, and a preference among many students for using online searches to gain local labour market information.

“Despite our jobs board, our career hub, everything that we have, we know from research we’ve carried out that students will still just go and look at Indeed... and if you type ‘graduate jobs Leicester’ into Indeed, nothing much is going to come up.”

Head of Graduate Success, De Montfort University

This has important implications for employment and career strategies in education settings generally, not just those interventions targeting disadvantaged students.

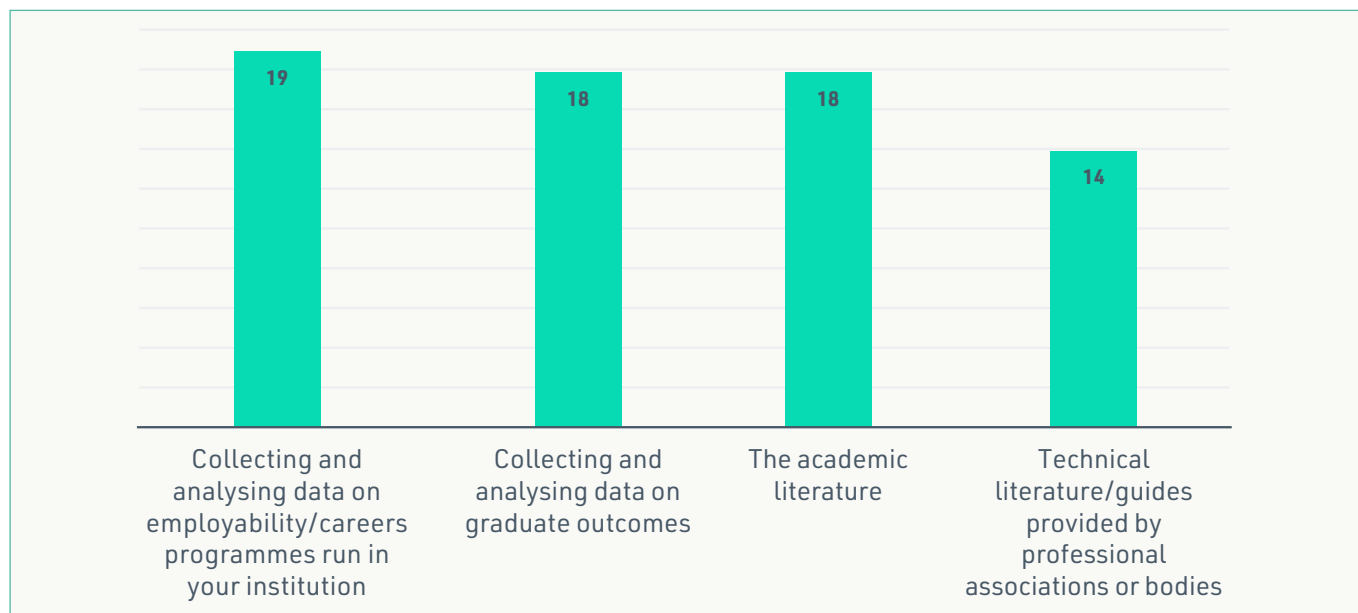
4.2.2.2 Approaches to identifying target interventions

Providers reported drawing on a wide range of information when deciding which interventions to use to target disadvantaged students. Several providers consulted target groups of students through student ambassadors or current programme participants. One provider began consulting with young people as part of their outreach work with their WP team, asking students in Year 9 what they believed they needed to reach their career goals. Input was also sourced through academic departments, which provided feedback on perceived skills deficits and the demands of careers related to their discipline. Employers were also consulted based on the same specifications of preferred skills in candidates.

Providers also reported drawing on publications by representative bodies such as the Institute of Student Employers. One Russell Group university works closely with its local authority, local small and medium-sized enterprises and a FE college as part of a holistic, cross-sector skills plan.

Figure 19 summarises the sources of information used by consultees to make decisions about which targeted interventions to adopt.

Figure 19: Methods for understanding the effect of careers and employability interventions by number of users



Institutions generally draw on their own impact data on the programmes they offer as well as the academic literature and general data on graduate outcomes. Their approaches to collecting this impact data are discussed in detail in Section 4.2.3. Despite the wide use of academic literature, respondents described finding this evidence base difficult to navigate, with a skew towards theoretical models over evidence of impact and practical guidelines.

Many providers also described material constraints such as cost and staffing as major factors in determining their offer. For example, IAG and careers

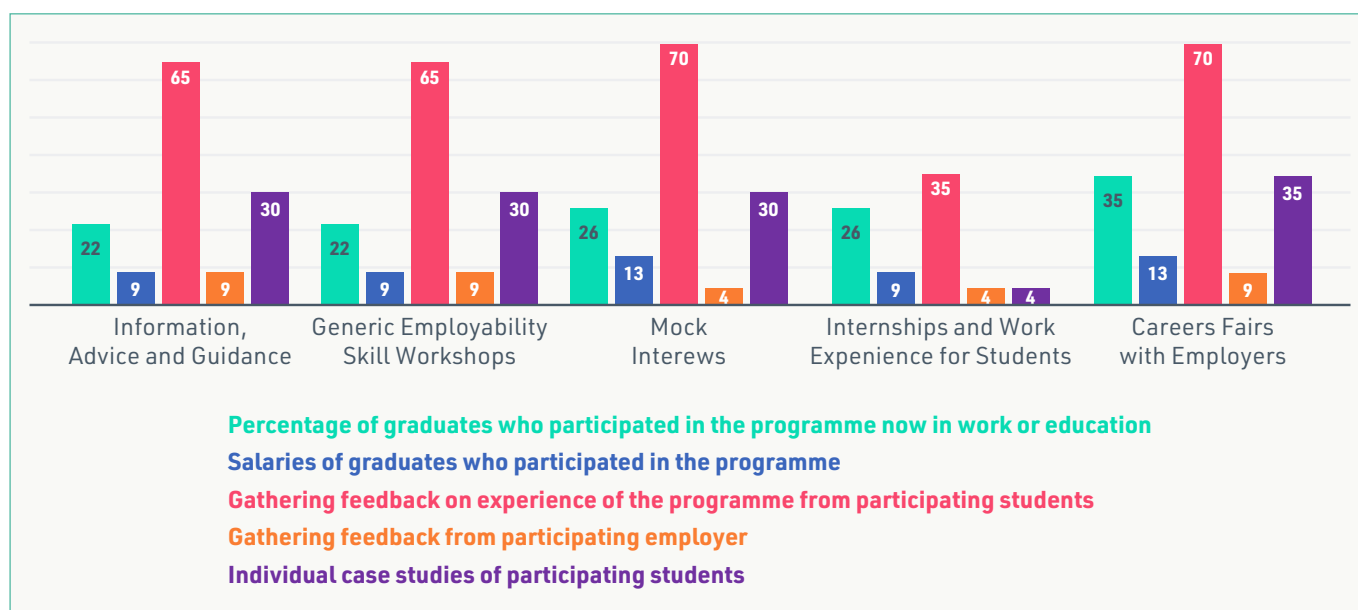
fairs were considered to be relatively expensive and difficult to run for targeted groups, with high staffing and organising costs.

4.2.3 Evaluation practices

4.2.3.1 Approaches to evaluating programmes

Of the respondents to our survey, 82% stated that their selection of careers and employability programmes targeted at disadvantaged students was informed by the evaluation of both previous and current interventions. Their methods of evaluation are summarised in Figure 20 below.

Figure 20: Interventions by the percentage of providers who evaluate using particular methods



Providers overwhelmingly use feedback from student participants in their evaluations. From focus groups to survey questions, it is apparent that this input is almost universally sought through questionnaires that ask students about their attitudes towards and experiences of the programme. They also ask students to assess their employability skills and include measures of career-readiness, career confidence and perceived impact on career plans.

Providers are least likely to evaluate internships and work experience. This may reflect their high level of confidence in the impact of the intervention alongside the relative cost of seeking feedback from the higher number of stakeholders involved in delivering and supporting work experience. Despite this, one post-1992 university described the innovative use of a 'mirror form' to capture feedback from students who had participated in work experience. The form asks students to self-assess key employability skills before and after the work experience. Employers are

asked to make the same pre- and post-assessment of the students' skills. Both sets of data are then mapped together to create a richer index of how the intervention affects students' skills.

For each intervention, approximately one-third of respondents use case studies as a method of evaluation. In focus group discussions, it emerged that this is aimed at producing materials that can be used as part of an internal marketing strategy to recruit more disadvantaged students to participate in the programmes offered.

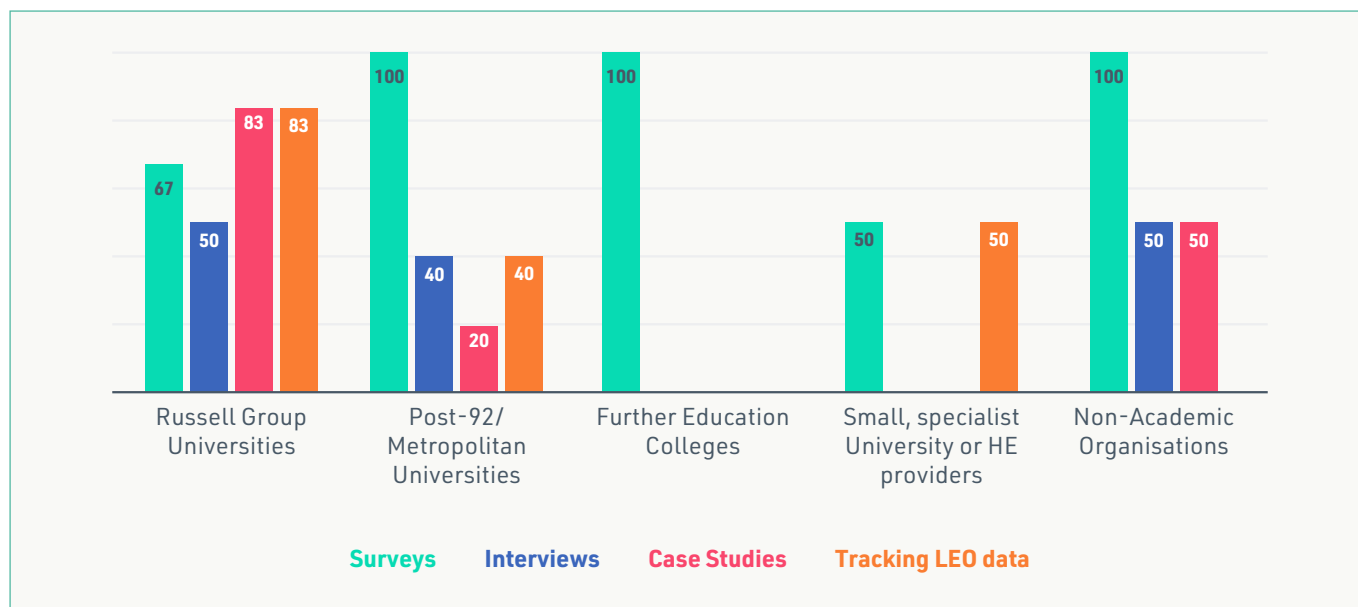
Evaluation by tracking the graduate employment outcomes of programme participants is relatively uncommon among our respondents. This is likely to be related to many of the challenges of data collection and evaluation discussed in the next section.

Several providers also described the use of external tools to support them in evaluation. In particular, 'Career Registration', a tool for tracking students'

attitudes towards careers and employability throughout their student career and beyond, was cited as a powerful and useful tool used by several providers

to monitor the impact of evaluations through student self-report.

Figure 21: Types of provider by percentage using particular methods of data collection on graduates



4.2.3.2 Challenges relating to data collection

4.2.3.2.1 Issues with surveys

The respondents to our consultation reported a range of challenges in evaluating their programmes, including evaluation design, data collection and analysis.

Several providers noted problems with the use of surveys as an evaluation tool. Three described a lack of expertise in survey design, which made them worry that they were collecting low quality data. Two also noted that, while they collected a large quantity of survey data, they were often unsure what to do with it and felt they did not have the capacity or skills to effectively analyse and extract value from it.

A general worry about 'over-surveying' students compounded these concerns about the low quality of survey data. One post-1992 provider described how gathering feedback from students after every IAG session resulted in students frequently giving neutral, uninformative responses (e.g. 'I do not believe this session was either good or bad'). There was also concern that the need to obtain survey data from students for impact evaluation could place undue pressure on disadvantaged students who may have time-consuming commitments outside study. Providers also described a concern that they were depending on students for insights – such as on their level of skill in a particular area – that required expert assessment rather than mere self-report.

4.2.3.2.2 Intervals of data collection

Two providers worried that too much of their data collection took place after the students had left university, preventing them from implementing feedback to improve those students' careers experience.

Despite general recognition that 'hard' data on students' graduate outcomes is particularly important in evaluating programmes, 80% of respondents reported finding this data collection challenging. Both the small specialist provider participants reported particular difficulties as they lacked the resources to run effective alumni networks. This challenge in recruiting individuals for post-graduation surveys extended to all types of provider. One provider noted that it felt unfair to ask graduates to provide feedback to improve a service from which they could no longer personally benefit.

No provider we consulted deployed a structured research design to underpin their evaluation work. For example, no participants reported having conducted a type 3 study with a control group. Several participants noted that merely capturing the graduate employment outcomes of programme participants did not allow them to isolate the effectiveness of that programme.

“What we have to remember is that a lot of the impact of careers services is quite small. The impact is obviously greater for Widening Participation students, but still. And so that can make it hard to tell whether something we did worked or not when you look at the Graduate Outcomes Survey.”

One respondent went further in noting that the very data that surveys collected acted as a barrier to making careers and employability services more inclusive. The majority of our respondents reported that the principal metric for measuring the effectiveness of their service was the ‘percentage of students progressing into graduate-level work or further study’; this focus may exclude students from disadvantaged backgrounds who may be less interested in such career paths and prefer to remain in their local communities.

4.2.3.2.2 Challenges from a decentralised approach

Four respondents discussed how the lack of a universal language and approach acted as a barrier to effective evaluation. One noted how a lack of common language impacted the sector’s ability to conduct an effective evaluation.

“Take the term ‘Widening Participation’ for example. The lack of consistency and definitions being used both within universities and between government departments, and between funders of activity is a massive problem because we simply cannot compare data effectively, like for like. We’ve got to get some consistent definitions of who we mean by WP students.”

Another respondent noted that terms such as ‘BAME’ were used differently by their WP team and their careers department, making internal comparisons of findings from programme evaluations difficult. Similarly, they noted the use of different research tools with varying levels of quality.

Several respondents noted that this problem went deeper. As individual providers deploy their own concepts of ‘employability’ and ‘positive employment outcomes’, it can be difficult to generalise from evaluation findings or compare data. This variation also introduces a resource burden on providers, who have to research and determine how these concepts should be applied in evaluation. Our respondents spoke in favour of a universal framework for graduate skills, while also admitting the difficulties this can present.

Two providers that are successfully delivering a more joined-up approach to careers described producing a theory of change to understand what they want their careers service to achieve. One provider had used their theory of change to design evaluations with a specially hired evaluation manager. This had allowed for a more strategic approach to selecting programmes for disadvantaged students.

It was also noted that a harmonised approach to delivery across all departments can reduce the pressure on careers departments to be the main drivers of positive graduate outcomes. This may in turn increase their commitment to effective evaluations.

“With evaluation now, careers departments have a lot to lose. If that evaluation shows that they’re not necessarily serving a particular portion of their student population then that could result in their budget being cut. That’s a real worry that they’re thinking about when they’re thinking about how to evaluate and make the argument for their services.”

4.2.4 Innovation

4.2.4.1 Barriers to innovation

The majority of participants reported a desire to develop and adopt new programmes that could improve the careers and employability outcomes of their students.

Nonetheless, providers described several barriers to innovation. Chief among them were constraints on resources – primarily funding, staffing and spaces to deliver new interventions. In relation to staff, three providers believed it would be difficult to recruit staff with the appropriate skills (such as programme design, evaluation and project management) for leading on innovation within the confines of the salaries they can offer. Three further providers were also concerned that the lapse of time needed for them to know whether any new interventions were effective made it difficult to justify the cost. Several providers also expressed concern that the low uptake of targeted programmes inhibited them from trialling more.

Three respondents committed to integrating careers interventions into taught courses within academic departments also described the barriers to obtaining the buy-in needed from academic teaching staff to be able to implement new programmes. This was noted as especially challenging in research-intensive

universities where staff engagement with teaching is already a challenge. Another respondent described how the need to work across several departments often slowed decision-making around innovative programmes.

4.2.4.2 Impact of the Covid-19 pandemic

All providers described having had to adapt their careers and employability practice during the Covid-19 pandemic. While no data was available on the impact of these adapted interventions on graduate outcomes, providers had a lot to say about their impact on the participation and satisfaction of disadvantaged students in these interventions.

All providers reported a shift to deliver as many programmes as possible remotely. This included IAG, mock interviews, employability skills workshops, careers fairs and, in the case of several providers, work experience and internships. In parallel, all providers experienced a large surge in uptake of their services early in the pandemic.

Several providers noted that the increased engagement from disadvantaged students may have been in response to the improved accessibility of their services.

“We have lots of students who live in the local area and, for cultural reasons and particularly our female students, they don't like to be out after a certain

time. [...] So we were finding that we were losing those type of students for our evening events, particularly within the Bangladeshi community. And so it's been great that actually everything's now accessible so they can sit in online.”

Other respondents noted that mature students with dependants, young carers and students who had to commute from home rather than living on campus also benefited from remote access. Remote delivery also allowed careers services to be delivered earlier and later in the day than in-person sessions, further increasing accessibility for disadvantaged students.

At the same time, our consultation participants recognised drawbacks to remote delivery for disadvantaged students. Three providers described how the 'digital divide' had affected their students, with disadvantaged students struggling to access the necessary technology and workspace to engage in remote sessions.

Multiple providers explained that Covid-related adaptations had forced them to reconsider their offer and its accessibility and that many innovations, such as remote delivery, would be retained in future as a permanent part of their work. Two providers noted that these adaptations had also given them an opportunity to think critically about the effectiveness of the programmes they offer and to reduce the number of career fairs.



5. DISCUSSION

In this section, we draw together the findings from Sections 2 to 4 to offer high level reflections on efforts to improve labour market outcomes for graduates from disadvantaged backgrounds. These reflections are organised by theme.

5.1 DISADVANTAGED GROUPS

Section 2 highlights the disparities in labour market outcomes for different groups of young people. These gaps are generally greatest for employed graduates who are female, from families of low socioeconomic status or certain ethnic groups (Caribbean, White and Black Caribbean, Bangladeshi, Pakistani or graduates from any other Black background).

Education providers can offer interventions to reduce these disparities. There is medium-strength evidence to support the use of work experience and effective IAG for this purpose. However, our literature review uncovered very little research into programmes targeted specifically at disadvantaged populations.

The largest earnings gap is gender-based, with women earning 32% less than men 10 years after graduation. This difference is greater than gaps for ethnicity, disability and socioeconomic background, but does not account for graduates not in employment. However, less than half of the education providers we consulted offered any targeted programmes for female students.

Our research suggests that the pay gap for women is related to part-time working, maternity leave and subject choice. At both A-level and degree level, women are more likely to select subjects associated with lower returns. The remainder of the gender gap is likely to be due to a combination of gender differences in parenting responsibilities, hours worked, a propensity to ask for pay rises or apply for promotions, and labour market discrimination.

It is possible that targeted careers programmes may not be sufficient to offset some of these deeper social considerations. There are also logistical questions about how interventions can be targeted at a group likely to comprise at least half the student population in any given provider. Changing current programming to make it more accessible and relevant to women – for example, using the case studies of adapting IAG described in Section 3.3.2 – is likely to be the most constructive course of action for most providers.

We also noted that while BAME learners are the most likely disadvantaged group to be targeted for extra career provision, there are substantial differences in

labour market outcomes within this group. Graduates from Indian, Chinese and other Asian backgrounds earn 24% more than those from Caribbean, Black Caribbean, Bangladeshi and Pakistani backgrounds 10 years after graduation. This suggests that the BAME designator lacks the specificity needed to develop a shared language across and between providers for talking about disadvantaged groups.

A major theme in our consultation was the providers' preference for universal, accessible programming over targeted interventions. This was motivated by a desire to avoid stigmatising disadvantaged students, but also by the relatively low uptake of most targeted programmes among targeted groups. This low uptake represents in part the issue of accessibility – for example, mature students and students with caring responsibilities have less latitude to attend extracurricular career activities. However, it also aligns with a broader issue of low participation of students in optional careers programmes. This suggests that the recruitment strategy for disadvantaged students could align with an overall strategy for increasing the uptake of careers and employability services by the general student population. This may be particularly appropriate for providers serving a high proportion of disadvantaged students.

Although the subject choice was not the focus of our evidence review, it is clear that it can make a substantial difference to labour market outcomes – from earnings to a subjective sense of purpose. This supports the efforts of careers and employability services to work more closely with target-subject departments to offer bespoke services.

Despite its clear underlying rationale and widespread support, there is a risk that a universal approach may be effective in improving engagement with careers services but have little impact upon closing gaps in graduate outcomes. Universal enrolment in careers programmes may simply reproduce current inequalities in labour market outcomes if those who are already relatively advantaged benefit most from universal programmes.

5.2 INTERVENTIONS

We found work experience to be the most well-evidenced and impactful intervention in the literature. From our consultation, we also learnt that work experience is the most likely intervention to be targeted at disadvantaged groups, typically through targeted messaging campaigns. The consultation participants believed it to be the most impactful programme they offered. This suggests a broad alignment between the evidence base and providers'

current practices. Our consultation also identified that employers are partly leading the focus on work experience, as they engage with the imperative to increase the diversity of their workforce.

While our evidence review suggests that work experience has value as a signal to employers, prompting them to invite people to interview, it finds no evidence that this signal persists in the long term. Work experience may be most effective when combined with an effective IAG that supports graduates into a good first job out of university.

The accessibility of work experience is an issue that emerged in our evidence review and consultations. While employers may prefer work experience that students have undertaken voluntarily, this is likely to benefit more advantaged students. Such students are more readily able to draw on social networks to acquire voluntary work experience and may be better placed financially to complete unpaid internships. Work experience must be made accessible to disadvantaged students – for example, by equipping them with the appropriate technology for remote working roles or structuring working hours around caring responsibilities.

Our evidence review points to the effectiveness of counselling-based approaches to IAG. It can be hard to target this kind of provision, and uptake can be low, so education providers may benefit from training careers staff to be able to work effectively with students from disadvantaged backgrounds. A number of consultees reported using external organisations to deliver this training. Whole-institution approaches may require the training of staff beyond the careers department in these skills so they can have more effective careers counselling conversations with disadvantaged students.

Our consultations and the literature on HE and FE partnerships provides emerging evidence of the value of HEPs including a careers IAG element in their recruitment outreach work with WP students. This approach can be aimed at increasing progression to HE, but also at the beginning the process of careers IAG early. This may give students a longer lead time to think about career options before attending a post-secondary education provider, reducing the

provider's IAG costs while also allowing it to prepare programmes that are relevant and tailored to the cohort characteristics they are expecting based on their outreach work.

5.3 EVALUATION AND EVIDENCE

Our evidence review identified a few studies with a robust causal study design. Equally, we identified little evidence that could be classified as strong using the OfS typology. This aligns with explicit concerns raised by participants in our consultations about their ability to fund, conduct and publish high-quality evaluations of the programmes they offer.

Respondents told us that the lack of internal expertise is a key barrier to conducting robust evaluations of their programmes. A number noted that they were struggling to recruit individuals with this level of expertise at the starting salaries within their budget. Some also raised a concern that the relationship between evaluation outcomes, performance management and funding for careers departments can disincentivise robust evaluation.

These challenges also relate to another theme from our discussion – the interest expressed by providers in a whole-institution approach to careers and employability programmes. This kind of holistic strategy can reduce the pressure on individual departments to produce positive findings, improving the quality and frequency of evaluations. It can also allow education providers to leverage the research and evaluation skills within their academic departments systematically and sustainably.

Many consultees also highlighted the lack of universal frameworks or vocabulary for conducting evaluations. This makes it difficult to conduct cross-provider comparisons of findings based on common metrics and methods. For example, several providers described poor-quality ad-hoc surveys that had been produced within their institutions to track unclear measures of impact for their careers programmes. There is a clear need for a common framework of terminology and metrics to underpin more widespread and higher-quality evaluation.

6. RECOMMENDATIONS

Overall, the evidence base is relatively weak when it comes to causal evidence, particularly that which relates to improving employability outcomes for students from disadvantaged or underrepresented backgrounds. To improve this, we recommend that HE providers:

- Adopt a strategic approach to careers and employability provision, beginning with a theory of change specifying the desired employment outcomes for students and acknowledging that different groups may experience different barriers to achieving these outcomes. Theories of change should include both intermediate and longer-term behavioural outcomes, as well as subjective measures such as a sense of meaningfulness in work.
- Develop and evaluate employment and careers programmes (work experience, IAG, mock interviews and careers fairs) specifically targeted at reducing gaps in employment outcomes. Of particular focus for research should be graduates who are female, disabled, from certain ethnic backgrounds (Caribbean, White and Black Caribbean, Bangladeshi and Pakistani) or low participation areas. Closer relationships between WP and Diversity and Inclusion teams and their careers services could improve the identification and targeting of these programmes.
- Further explore the impact of sandwich courses and other types of work experience on labour market outcomes for disadvantaged and underrepresented students.
- Develop robust evidence of the impact of IAG provision that involves individuals from similar backgrounds to the students targeted and opportunities for interaction with teachers and lecturers who have spent time in industry. Involving disadvantaged and underrepresented students in the production process could help to ensure that the information provided is relevant to those groups.
- Develop and evaluate alumni or peer mentoring opportunities for disadvantaged and underrepresented students (including specific initiatives to support disabled students).
- Invest in trialling and evaluating innovative, technology-based approaches to careers and employability improvement.
- Design and evaluate the efficacy of approaches to support the uptake and participation of career and employability services amongst students expected to benefit most from the support available.
- Where universal provision is preferred, seek to ensure that they gather data on the social background of participants, and assess whether such programmes tackle equality gaps.
- Run robust trials of different careers and employability programmes across multiple candidate providers to develop the 'what works' evidence base. This increases the rigour of investigation and allows large volumes of comparable data to be captured.
- Support collective learning across the HE sector on what works to reduce employability gaps; sharing new and emerging evidence will be crucial in this respect.

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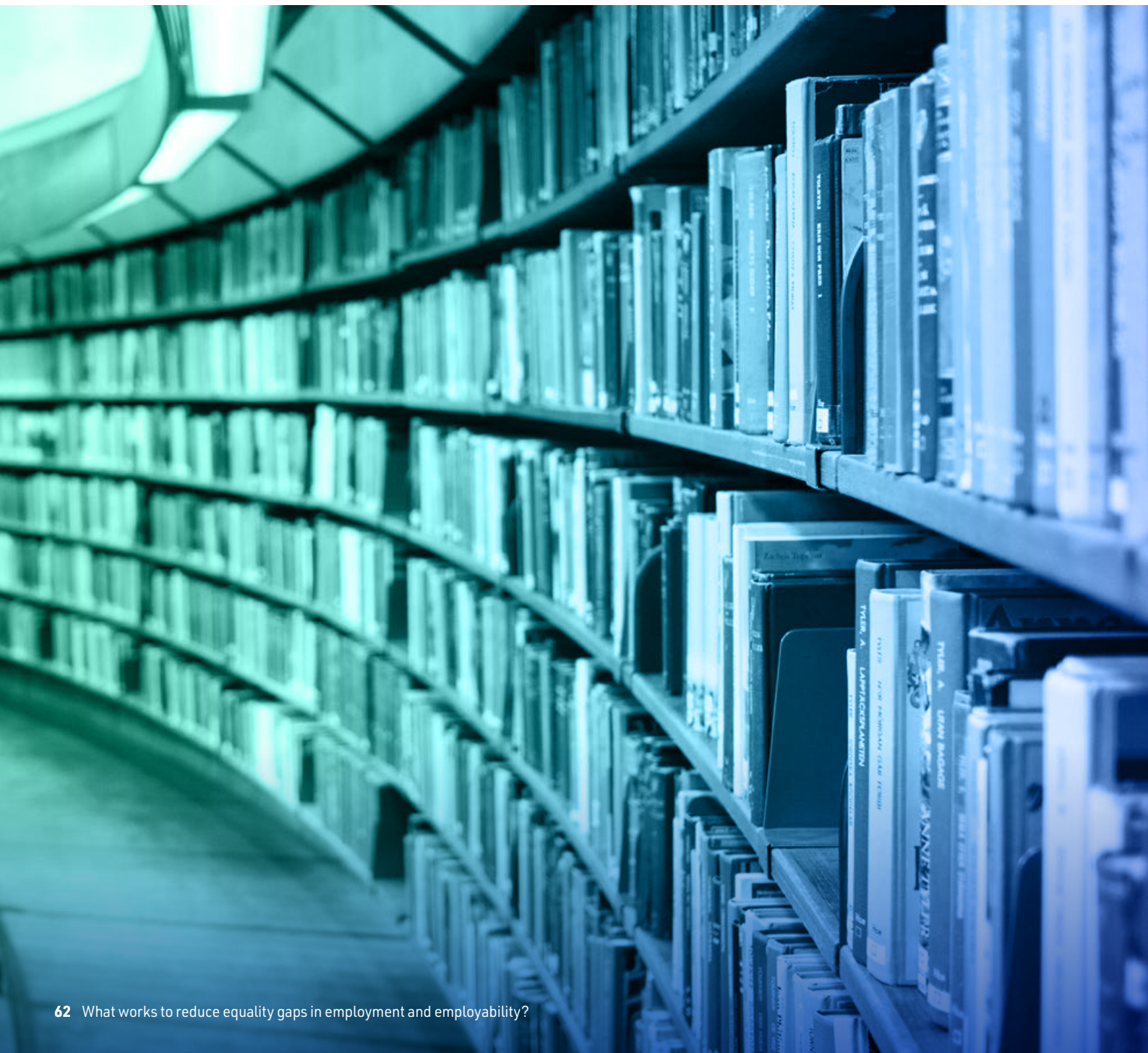
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8. GLOSSARY

Term	Definition
BAME	Black, Asian and minority ethnic, as a broad ethnic designation
Causal (type 3 evidence)	A study with a methodology that provides evidence of a causal effect of an intervention (see Section 3.2.1 for a more detailed description)
Disadvantaged group	A group who, as defined by the OfS, have relatively lower levels of participation in HE and worse outcomes in the graduate labour market (see Section 1.2 for a list of candidate groups)
Emerging evidence	A study that provides weak, but potentially promising, support for a particular intervention (see Section 3.2.2 for a more detailed description)
Empirical enquiry (type 2 evidence)	A study that collects data on impact and reports evidence that those receiving an intervention have better outcomes than those who do not receive it, but does not establish any direct causal effect (see Section 3.2.1 for a more detailed description)
Employability	An individual's ability to secure and prosper in employment in the labour market
FSMs	A common index used to measure and track poverty in schools
HESA	The Higher Education Statistics Agency, which produces annual data on graduate outcomes
IAG	Information, advice and guidance – the provision of resources by education providers to students to help them make effective decisions about their careers and professional lives
LEO	Longitudinal Education Outcomes – a large dataset produced by the UK government that combines education and tax data to allow income, employment, demographic and education data to be compared
Low participation area	A UK postcode where the proportion of young people who attend HE is below average
Medium evidence	A study that provides promising, but non-decisive, evidence for the effectiveness of a particular programme (see Section 3.2.2 for a more detailed description)
Narrative (type 1 evidence)	A study that provides a narrative or a coherent theory of change to motivate its selection of activities in the context of a coherent strategy (see Section 3.2.1 for a more detailed description)
POLAR	Participation of Local Areas classification – a UK-wide, area-based measure that groups geographical areas according to the proportion of young people living in them who participate in HE by the age of 19
Strong evidence	A study that provides secure evidence of the effectiveness of a particular intervention (see Section 3.2.2 for a more detailed description)

9. ANNEXES

Annex A – Keywords used for the literature review database search

Annex B – Inclusion and Exclusion criteria

Annex C – TASO's and the OfS' system for classifying evidence by type

Annex D – TASO Graduate Employability Survey

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TASO is an independent charity that aims to improve lives through evidence-based practice in higher education (HE). We support HE professionals through research, toolkits and evaluation guidance on what works best to eliminate equality gaps. We inform practitioners of the best available evidence and produce new evidence on the most effective approaches. TASO is an affiliate 'What Works' centre and is part of the UK Government's What Works Movement.