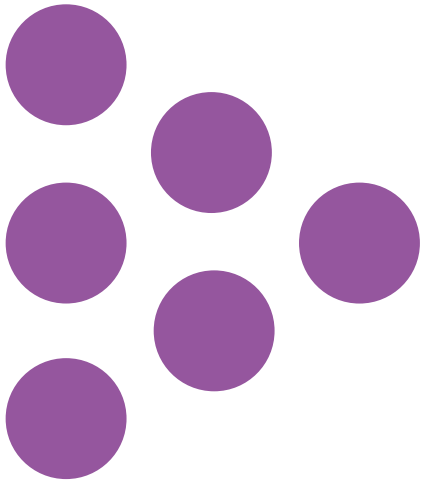
NFER
National Foundation for Educational Research

Research Report

# The progression and retention of Teach First teachers

## An analysis of the 2011 to 2017 Teach First cohorts

National Foundation for Educational Research (NFER)



# The progression and retention of Teach First teachers

Dawson McLean and Jack Worth

Published in July, 2023

By the National Foundation for Educational Research,

The Mere, Upton Park, Slough, Berkshire SL1 2DQ

www.nfer.ac.uk



**ISBN:** 978-1-912596-74-4

**How to cite this publication:**
McLean, D. and Worth, J. (2023). *The progression and retention of Teach First teachers*. Slough: NFER

NFER
National Foundation for Educational Research

# Contents

# Acknowledgements

We would like to acknowledge the support we received throughout this research project from Teach First, who provided a key part of data for the analysis. We would also like to thank Luke Bocock, Head of Research and Learning at Teach First and Karolina Urbanska, Research Specialist for their support in interpreting the findings.

Colleagues at the Department for Education also played a crucial role in the project by providing technical assistance in matching the data sets together and making them available for our analysis.

Finally, we would also like to acknowledge the contribution of Constance Rennie, statistician at NFER, who assisted with methodology planning and data cleaning.

This work was produced using statistical data accessed via the ONS Secure Research Service. The use of this data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce National Statistics aggregates.

# Executive Summary

Teach First is an educational charity, established in 2002, which aims to make our education system work for every child. They recruit and train teachers to work in schools serving disadvantaged communities, develop their leadership teams through a variety of programmes and plug them into networks of diverse expertise and opportunities to create real change. Teach First's flagship programme, and a key component of its mission of reducing inequalities in education, is the Teach First Training Programme. This two-year programme of initial teacher training involves recruiting and training high-potential university graduates and career changers as teachers and placing them in schools serving disadvantaged communities.

Teach First has commissioned the National Foundation for Educational Research (NFER) to conduct a two-part impact evaluation of the Teach First Training Programme, to explore how the impact of the programme has evolved during its second decade.

This report summarises the findings from the first research phase, which analysed the progression and retention of Teach First teachers, compared to the progression and retention of similar teachers who worked in similar schools when they first entered the state-funded sector but who trained through other initial teacher training (ITT) routes.

The second phase of the evaluation considered the impact of the Teach First Training Programme on the attainment of pupils in schools, compared to otherwise similar schools that did not participate in the programme (McLean and Worth, 2023).

Research on the progression and retention of previous cohorts of Teach First teachers (those who trained through the programme) found that they were substantially more likely than other, similar PGCE teachers to move into middle and senior leadership roles (Allen *et al.,* 2016). Accordingly, Teach First teachers earned £3,000 - £6,000 more than similar PGCE teachers three and five years after qualification, respectively. The same study also found that after receiving their teaching qualification, Teach First teachers were significantly less likely to stay in teaching than other PGCE teachers.

Similarly to previous research, we used linked longitudinal data from the DfE's ITT Performance Profiles and School Workforce Census datasets to undertake our analysis. We identified 'similar' teachers who trained through other ITT routes and were teaching in similar schools using statistical matching techniques, to ensure that the differences in progression and retention we identified were not driven by differences in observed characteristics between the groups being compared.

The analysis in this report includes all Teach First teachers who trained between 2011/12 and 2017/18, five cohorts more than the 2016 study of the careers of Teach First teachers (Allen *et al.,* 2016). Therefore, this report contributes to an improved understanding of the longer-term (up to seven years after qualification) career prospects of Teach First teachers compared to teachers from other routes.

Our analysis is similar in structure to the previous research studies, with some slight methodological changes. Specifically, we report more detailed comparisons of the career prospects of Teach First teachers to other routes, by matching our sample of Teach First teachers

separately to teachers who trained through higher education and school- and employment-based routes respectively. We also matched our sample of Teach First teachers to teachers who trained through other routes using both trainee and school-level matching variables. This is to account for the different school contexts teachers trained through different routes worked in as newly qualified teachers (NQTs),[1] which are known to affect progression and retention (DfE, 2017).

## Key findings

Our findings highlight the very different career trajectories of Teach First teachers compared to the trajectories of teachers who trained through other higher education and school- and employment-based training routes.

Teach First aims to provide a leadership pipeline for schools serving disadvantaged communities by supporting trainees to make rapid progression into leadership positions. Among the teachers who stayed in teaching, we find that those who trained through Teach First were more likely to be in middle leadership positions earlier in their careers. Three years after their NQT year, the proportion of Teach First teachers who were in middle leadership positions was 38 per cent higher than for similar teachers who trained through higher education routes and 22 per cent higher than for similar teachers who trained through school- and employment-based routes (50 per cent of Teach First teachers, compared to 36 and 40 per cent of similar teachers who trained through higher education and school- and employment-based routes, respectively). Five years after their NQT year, Teach First teachers were 20 per cent more likely to be a middle leader compared to similar teachers who train through other routes.

Those who trained through Teach First were also considerably more likely to be in senior leadership positions earlier in their careers. Three years after their NQT year, the proportion of Teach First teachers in senior leadership positions was 12 times higher than for similar teachers who trained through higher education routes and three times higher than for similar teachers who trained through school- and employment-based routes (four per cent of Teach First teachers compared to one-third and one per cent of similar teachers who trained through higher education and school- and employment-based routes, respectively). This progression gap persisted over time such that, seven years after their NQT year, the proportion of Teach First teachers in a senior leadership position was four and two times higher than for similar teachers who trained through higher education and school- and employment-based routes, respectively (30 per cent of Teach First teachers, compared to eight and 15 per cent).

Rates of qualified teacher status (QTS) achievement were similar between Teach First teachers and other routes. Furthermore, due to the two-year, employment-based nature of the Teach First Training Programme, Teach First trainees were considerably more likely than teachers trained through other routes to be working in state-funded schools during their NQT year (the second year

[1] This terminology was used until September 2021, when teachers entering teaching became known as early-career teachers (ECTs). Since all trainees in our analysis completed their training and entered teaching before this year, we retained the term NQT.

of their training). For the cohort who began training in 2017/18, 94 per cent of Teach First teachers progressed from the first to the second year of the programme and were teaching in a state-funded school during their NQT year. This compared to 68 per cent of trainees who trained through higher education routes and 80 per cent of trainees who trained through school- and employment-based routes.

However, recruiting and training teachers, some of whom may not otherwise have entered teaching, to work in schools serving disadvantaged communities has a trade-off; they were less likely to remain in teaching after their NQT year (once they completed their programme) compared to teachers trained through other routes. Specifically, the retention rate of Teach First teachers in the year after NQT year was 18 and 19 percentage points lower than among similar teachers who trained through higher education and school- and employment-based routes respectively. It is important to recognise that this is somewhat predictable. A trainee's NQT year marks the end of the two-year Teach First Training Programme, whereas other training routes are one-year programmes that end before a trainee's NQT year. The end of a training programme is a natural break point where a portion of trainees decide not to work in teaching altogether or move into teaching in independent schools or outside of England.

The average difference in retention rates between Teach First teachers and teachers who trained through other routes also masked improvements in the retention rate differences among more recent cohorts. For example, the proportion of Teach First teachers who began their training in 2011/12 and were still in teaching in the year after their NQT year was 16 and 22 percentage points lower than for teachers who began their training in the same year on higher education and school- and employment-based routes respectively. However, the proportion of Teach First teachers who began their training in 2017/18 and were still in teaching one year after their NQT year was four percentage points *higher* than for teachers who began their training in the same year on a higher education route. This has been driven both by an improvement in retention rates for Teach First teachers and a fall in retention rates for teachers trained through other routes between 2011/12 and 2017/18.

This was partly due to cohorts of Teach First teachers being increasingly more likely than teachers trained through other routes to be teaching in the state-sector during their NQT years. It was also due to a narrowing of the gap in retention rates from a teacher's NQT year to the following year between Teach First teachers and teachers trained through other routes. Comparing similar NQTs in similar schools, the gap in retention rates between Teach First teachers and similar teachers who trained through higher education routes one year after NQT year was 23 percentage points for the 2012/13 cohort but narrowed to 14 percentage points for the 2017/18 cohort. Similarly, the gap in retention rates between Teach First teachers and similar trainees who trained through school- and employment-based routes one year after NQT year narrowed from 23 percentage points for the 2012/13 cohort to 17 percentage points for the 2017/18 cohort.

Teach First aims to recruit graduates and career changers into its training programme who are committed to the aim of teaching in schools serving disadvantaged communities. We found that at the end of the two-year training programme, among those who stayed in teaching, Teach First teachers were more likely to move school and move region than similar teachers who trained through other routes. This was likely due to the design of programme which placed trainees in

schools all over the country and who then were more likely to move after the completion of their training.

However, Teach First teachers appeared to remain committed to the Teach First mission. Among those that did move school, Teach First teachers were more likely than teachers who trained through other routes to remain teaching in schools serving disadvantaged communities. Teachers who trained through Teach First were also more likely than those who trained through other routes to move to a disadvantaged school that was rated as Good or Outstanding by Ofsted. Teach First teachers were therefore particularly likely to remain in disadvantaged schools if they were judged to have effective leadership, quality teaching and personal development opportunities which go along with a Good or Outstanding Ofsted rating.

# 1 Introduction

## 1.1 Background

Teach First is an educational charity, established in 2002, which aims to make our education system work for every child. They recruit and train teachers to work in schools serving disadvantaged communities, develop their leadership teams through a variety of programmes and plug them into networks of diverse expertise and opportunities to create real change. Teach First's flagship programme, and a key component to its mission of reducing inequalities in education, is the Teach First Training Programme. This programme involves recruiting and training 'high-potential'[2] university graduates and career changers as teachers and placing them in disadvantaged schools.

Eligible participants must meet specific academic criteria and apply to be part of the programme. Eligible schools must meet a disadvantage threshold (defined by the proportion of pupils from disadvantaged backgrounds[3] and the Achieving Excellence Area (AEA) classification[4] of the school) and then opt into recruiting through the programme. Accordingly, schools that recruit Teach First trainees tend to be amongst the schools with the highest proportions of pupils from disadvantaged backgrounds and tend to face more substantial recruitment and retention challenges than other schools in England. We discuss this in detail in the second phase of the evaluation (McLean and Worth, 2023).

Teach First aims to support schools serving disadvantaged pupils with their teacher supply challenges. The Teach First Training Programme is an employment-based teacher training route, in that trainees work in a school and receive a salary during their training. Participants attend a five-week[5] Summer Institute to begin their training and finish their training working in the classroom. Trainees are placed in the same school for two years, where they continue to receive training and individualised support from in-school mentors and develop their teaching skills working with experienced teacher educators.

[2] 'High potential' is a term used by the DfE to refer to high potential teachers recruited to the High Potential Initial Teacher Training programme which is currently delivered under contract by Teach First. High Potential ITT trainees were formerly referred to as Teach First trainees in DfE's public ITT statistics. See https://explore-education-statistics.service.gov.uk/find-statistics/initial-teacher-training-performance-profiles

[3] Measured by the Income Deprivation Affecting Children Index (IDACI).

[4] AEA is a composite indicator combining several different indicators used to identify schools which are currently deemed to be under-performing but have significant capacity to improve. See https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/508392/Methodology_guidance_note_-_defining_achieving_excellence_areas.pdf.

[5] The length of the Summer Institute training has been five weeks since the 2017/18 cohort but was six weeks for all of the cohorts in this analysis.

At the end of their first year in the programme, trainees are recommended for qualified teacher status (QTS) and receive a postgraduate diploma in education (PGDE)[6] after their second year.[7] Participants are known as 'Teach First Ambassadors' after they complete their two-year placement. Teach First is part of Teach For All, a network of educational charities around the world that share similar aims around the improvement of education systems (and of which Teach for America in the United States is the oldest partner).

Teach First placed its first cohort of trainees in schools in 2003 and, in its early years, Teach First trainees were placed exclusively in secondary schools in London. However, the scope of the programme has expanded substantially since its early days. Teach First now places new teachers in disadvantaged primary and secondary schools (which meet eligibility criteria) across all regions of England, particularly in areas deemed to be under-performing.

In addition to being a provider of initial teacher training (ITT), Teach First supports schools through teacher and leadership development programmes and its network of Teach First Ambassadors working in schools. Teach First was also selected by the Department for Education (DfE) as a primary provider of the Early Career Framework (ECF) programme and is accredited to deliver the DfE's National Professional Qualifications (NPQs) (Teach First, 2022a).

## 1.2 About this evaluation

Existing evidence on the impact of the Teach First training programme on the progression and retention of teachers in England and attainment in schools serving disadvantaged communities is based on several studies which considered the impact of the programme on the earliest Teach First cohorts (Muijs *et al.*, 2013; *Allen et al*., 2016; Allen and Allnutt, 2017). Teach First has therefore commissioned the National Foundation for Educational Research (NFER) to conduct a two-part impact evaluation of the Teach First training programme, to explore how the impact of the programme has evolved during its second decade.

The aim of the first phase of the evaluation is to analyse the progression and retention of Teach First teachers, compared to the progression and retention of similar teachers who trained through other ITT routes and were working in similar schools when they first entered the state-funded sector. The second phase of the evaluation considers the impact of teachers who trained through Teach First on the attainment of pupils in their school, compared to schools which did not participate in the Teach First programme (McLean and Worth, 2023).

The five main research questions we consider in this analysis are:

---

[6] The PGDE is an internationally-recognised academic teaching qualification. However, Teach First only began awarding PGDE qualifications upon the completion of the two-year programme in 2017/18. Therefore, all of the cohorts of Teach First teachers that we analysed in this report would have earned a postgraduate certificate in education (PGCE) alongside their QTS status after the first year of training, rather than a PGDE.

[7] Postgraduate initial teacher training on other routes is typically one year in duration as opposed to two years for Teach First. Under the Early Career Framework (ECF) reforms, which took effect in September 2021, early-career teachers from all routes spend two years in induction once they enter teaching. However, this change had not yet taken place for any of the trainee cohorts in this analysis.

1) What proportion of teachers who trained through Teach First progressed to middle or senior leadership positions in the years after they entered teaching, and how did this compare to similar teachers teaching in similar schools but who trained through other ITT routes?
2) How did the rate of progression into middle and senior leadership compare to other ITT routes across different teacher and school characteristics (including whether a school had Teach First placements in the past)?
3) What proportion of teachers who trained through Teach First were still employed in a state-sector school in the years after they entered teaching? How did this compare to similar teachers teaching in similar schools. but who trained through higher education and school/employment-based ITT routes?
4) How did retention rates for Teach First teachers compare to teachers who trained through other ITT routes across different teacher and school characteristics (including whether a school had Teach First placements in the past)?
5) Of those who remained in teaching, were teachers who trained through Teach First more or less likely than similar teachers teaching in similar schools but who trained through other routes to stay in the same school or region, or in a school with a similar level of disadvantage or Ofsted rating than their original school?

## 1.3 Literature review and motivation

### 1.3.1 Previous literature

Gaps in educational attainment between pupils from deprived and non-deprived backgrounds in England are well-documented in the literature. Nationally, in 2019, prior to the onset of the Covid-19 pandemic, less than half of pupils from deprived[8] backgrounds achieved a standard pass (grade 4 or above) in GCSE English and mathematics, compared to nearly three-quarters of pupils from non-deprived backgrounds (Starkey-Midha, 2020).

The disadvantage gap is driven by many complex, interacting factors. However, a key factor relevant to Teach First is that pupils in schools which serve the most income-deprived areas in England (and therefore have the highest proportion of pupils eligible for free school meals (FSM)) have less access to high-quality teachers than pupils in schools in the least-deprived areas (Sibieta, 2020; OECD, 2022). Schools with the highest proportion of their pupils eligible for FSM also tend to be challenging environments to teach in, which leads to higher teacher turnover (Allen *et al*., 2016) and lower Ofsted ratings (Hutchinson, 2016). Teach First's aim of placing teachers in the schools which serve disadvantaged pupils can therefore help to bridge this gap, both by having a direct impact on pupil attainment and by helping to relieve recruitment and retention challenges in Teach First-eligible schools.

[8] Pupil deprivation refers to income deprivation and is defined as those pupils eligible for free school meals.

Teach First aims to recruit trainees to its training programme who are judged to have 'high potential'[9] as teachers, and aims to attract graduates and career changes who may not have otherwise joined the teaching profession, as well as those intent on becoming career teachers. Successful recruits must meet criteria based on their prior academic performance, and must also demonstrate other values and competencies such as leadership, humility, respect, empathy, motivation, resilience and commitment to teaching, which are assessed by an application form and completion of exercises at one of Teach First's 'Development Centres' (Teach First, 2022b).

In its earliest cohorts, Teach First secondary teachers were more likely than secondary teachers who train through other routes to teach in shortage subjects (Hutchings *et al.*, 2006). This was partly because the number of placements Teach First makes in each phase and subject is dictated by school demand, as well as the supply of applicants in each subject. Subjects including mathematics, physics, chemistry and languages often do not meet teacher recruitment targets (Worth and Faulkner-Ellis, 2022), and accordingly experience shortages of teachers. These shortages tend to be greater in schools serving disadvantaged communities (Sibieta, 2020).

As a result of the selection criteria, Teach First teachers tend to differ in numerous ways from teachers who train through other routes. In its earliest cohorts, Teach First teachers were more likely than teachers who trained through other routes to have had the highest degree classifications. Surveys of schools who hired Teach First teachers also indicated that they were typically hard-working, had an excellent attendance record and were determined to succeed (Hutchings *et al.*, 2006).

The training programme itself is judged to be of high quality. Ofsted rates Teach First's ITT provision as 'outstanding' for both primary and secondary, citing in particular a number of schools which improved in overall effectiveness after being recruited to the Teach First programme (Ofsted, 2011, 2015). Teach First is also considered to be a prestigious graduate employer, placing ninth on the Times Top 100 Graduate Employers list in 2021 and within the top ten in the last ten years (Birchall, 2021).

The literature also shows that the career trajectories of Teach First teachers differ from teachers who train through other routes. Specifically, participants in the 2008/09 – 2012/13 Teach First cohorts were seven times more likely than other similar PGCE teachers to be in a senior leadership role within the first six years of their career (Allen *et al.*, 2016). As a result, Teach First teachers earned £3,000 - £6,000 more than similar PGCE teachers three and five years after qualification, respectively (Allen *et al.*, 2016). Higher progression into middle and senior leadership is likely to be driven by a number of factors including differences in the competencies which Teach First considers as part of its recruitment (notably leadership).

Not only were Teach First teachers more likely to progress into higher leadership roles, but they were also twice as likely as teachers who train through other routes to be teaching in schools serving disadvantaged communities after the completion of their programme (Allen *et al.,* 2016).

[9] 'High potential' is a term used by the DfE to refer to high potential teachers recruited to the High Potential Initial Teacher Training programme which is currently delivered under contract by Teach First. High Potential ITT trainees were formerly referred to as Teach First trainees in DfE's public ITT statistics. See https://explore-education-statistics.service.gov.uk/find-statistics/initial-teacher-training-performance-profiles.

This suggests that a key impact of Teach First is that it provides a leadership pipeline for schools serving disadvantaged communities, which may otherwise have challenges attracting quality leaders or face barriers to succession planning.

However, establishing a leadership pipeline for disadvantaged schools has a trade-off; Teach First teachers are more likely than teachers who train through other routes to leave the profession after their NQT year. Five years after achieving QTS, retention rates for Teach First teachers who trained in the 2008/09 – 2011/12 cohorts were 12-24 percentage points lower than for other teachers of a similar age (Allen *et al.*, 2016). Teach First teachers are less likely to be retained in teaching despite commitment to teaching being a factor which Teach First assesses as part of its selection criteria. This could be because some recruits to Teach First may not otherwise have considered teaching as a career, but are attracted to the prestige of the programme, Teach First's established links with corporate supporters and the opportunities that participation might open up for progression into other professions after completing the programme (Hutchings *et al.*, 2006).

The previous literature also shows that Teach First has a positive impact on the attainment of pupils in the schools in which they are placed (Muijs *et al.*, 2013; Allen *et al.*, 2014). These findings are in line with other recent evaluations of Teach for All partners, such as Teach for America and Enseña por México (Teach for Mexico), which show a positive impact on attainment and whole-child outcomes for disadvantaged pupils (Chacon and Pena, 2017; Wright *et al.*, 2019; An and Koedel, 2021; Penner, 2021). The empirical literature establishing the impact of Teach First on pupil attainment in schools in England is relatively sparse and will be the subject of the second, forthcoming, report from this evaluation.

### 1.3.2 Motivation for this research

The motivation for the first phase of research on progression and retention of Teach First teachers is to update and improve upon the existing estimates from the previous studies. The analysis in this report includes an additional five cohorts of Teach First teachers compared to existing progression and retention evaluation estimates. Therefore, this report contributes to a better understanding of the long-term (up to seven years after qualification) career prospects of Teach First teachers compared to teachers from other routes.

The report also contributes to a better understanding of how the trends in progression and retention have changed over time. Any changes in trends could be due to changes in the wider labour market conditions for teachers (such as pay and workload relative to other, similar occupations).[10] Changes in progression and retention trends could also be due to specific changes Teach First has made in its brand and marketing, recruitment strategy and tactics, selection processes and programme design and delivery.

Finally, our analysis is similar in structure to the previous evaluation (Allen *et al.,* 2016) but we also incorporate methodological changes. Specifically, we report more detailed comparisons of the career prospects of Teach First teachers to other routes, by matching our sample of Teach First

[10] The latest School Workforce Census data available for this analysis is for the 2019/20 academic year and thus it reflects the teacher labour market context prior to the onset of the Covid-19 pandemic.

teachers separately to teachers from higher education and school- and employment-based routes, respectively. We also matched our sample of Teach First teachers to teachers who trained through other routes using both teacher and school-level matching variables (see Section 2 for the full list of matching variables). This means that our comparisons between Teach First teachers and other routes accounted for the progression and retention context of the different types of school teachers tended to work in when they were newly-qualified teachers.

# 2 Methodology

The analysis in this report followed closely the methodology in the preceding Teach First impact evaluation (Allen *et al.,* 2016). Specifically, we used a matched comparison group research design to ensure that comparisons of the progression and retention outcomes of Teach First teachers to PGCE teachers who trained through other routes were made on a like-for-like basis.

In this section, we outline key details of the data sources, methodology and limitations relevant to the analysis. Additional methodological details, including imputations applied to the datasets, matching output and regression model specifications, are included in the Methodological appendix.

## 2.1 Data sources

We used three sources of data for this impact evaluation study. Our first key data source was the School Workforce Census (SWC), which is a census of all teachers teaching in state-sector schools in England. The SWC is a 'longitudinal' dataset, which means that it follows the same teachers over time, each year that they are teaching in a state-funded school in England and recorded in the data. The SWC is the data source which forms the basis of how we defined our key progression and retention outcomes, and we used SWC data from 2010/11[11] to 2019/20.

Our second key data source was the Initial Teacher Training Performance Profiles (ITT-PP) data. This dataset is a record of all ITT trainees who enrolled in an ITT programme, and records the personal characteristics of individual trainees (e.g. age, gender, ethnicity, etc.), course characteristics (ITT route, provider, region, subject), training year and the outcome of their programme (i.e. whether they were awarded QTS). We used ITT-PP data from 2008/09[12] to 2018/19 for the analysis. We linked[13] the ITT-PP data to the SWC data in order to observe trainees who achieved QTS and then went on to enter teaching in a state-sector school in England.

The final data source used in the evaluation is a dataset provided by Teach First of all participants in the Teach First Training Programme, from the 2003/04 cohort to the 2018/19 cohort. We linked[14] the Teach First data first to the ITT-PP data and then to the SWC based on the existing ITT-PP to SWC linkage. This allowed us to track all linked Teach First participants as they entered their ITT training programme, completed their qualification and then went on to enter state-sector teaching. We discuss further details on the limitations of the data linkages in Section 2.3.

[11] The 2010/11 academic year was the first year that the SWC data was collected in its current form.
[12] The 2008/09 academic year was the first year that the ITT-PP data was collected.
[13] This data linkage was done by DfE as a fuzzy match on Teacher Reference Number (TRN), as well as other characteristics such as National Insurance number, first and last name and date of birth.
[14] This data linkage was also done by DfE as a fuzzy match on TRN, first and last name, date of birth and school ID (unique reference number, or URN).

## 2.2 Definition of samples

Our evaluation involved the comparison of key progression and retention outcomes between the sample of teachers who completed their initial teacher training through Teach First and those teachers who completed their training through other postgraduate routes. We included the group of teachers who completed their training through other non-Teach First training routes in the 'comparison' groups. We defined two different comparison groups with different 'types' of ITT routes: higher-education routes and school- and employment-based routes.

School- and employment-based routes consist of School-Centred Initial Teacher Training (SCITT), School Direct (unsalaried), School Direct (salaried), Postgraduate Teaching Apprenticeship and Graduate Teacher Programme ITT routes. We combined these routes into one 'comparison' group rather than having split out school-based routes and employment-based routes as they were not coded consistently across all years in the ITT-PP data.

Our main sample for the analysis consisted of all ITT trainees recorded in the ITT-PP data (which included all Teach First trainees) who began their ITT training between the 2011/12 and 2017/18 training years. Training year refers to the cohort year (the year the trainee began their training) for Teach First trainees and the last year of a training course for trainees in the comparison groups.[15] A Teach First trainee's newly-qualified teacher (NQT)[16] year was defined as the year they were teaching as a qualified teacher in a classroom (the second year of their programme and thus the year after their 'cohort' year as recorded in the Teach First database). Similarly, the NQT year for teachers in the comparison groups was defined as the year after their recorded training year in the ITT-PP data (which reflected the last year of their ITT training).

We focussed on the 2011/12 – 2017/18 training years in order to observe school characteristics from the previous year as a matching characteristic.[17] The 2017/18 training year was the last year in the analysis because our last year of SWC data available was 2019/20 and therefore this was the last cohort of trainees for whom we could observe SWC outcomes after their NQT year.

The number of years over which we could observe our main outcomes differed depending on the year in which a trainee did their ITT training. If a trainee's training year was 2011/12, then we observed progression and retention outcomes for up to seven years ahead (from their NQT year in 2012/13 to 2019/20, the last year of SWC data available to us). If a trainee's training year was 2017/18, then we only observed one year of progression and retention outcomes.

We also explored progression and retention outcomes for the subset of early years and primary Teach First teachers who participated in the Teach First Training Programme. Primary and early years are phase and subject specialisations of the training programme whose first training cohorts were 2011/12 and 2013/14, respectively. We compared early years teachers with other Teach First

[15] Most postgraduate ITT courses are one year in duration and so, for these courses, the first and last year of training will be identical.
[16] The term NQT was used until September 2021, when teachers entering teaching became known as early-career teachers (ECTs). Since all trainees in our analysis completed their training and entered teaching before this year, we retain the term NQT.
[17] However, ultimately schools' characteristics from the previous year are not included as matching characteristics. We elaborate further on this point in the Methodological appendix.

primary teachers and also similar primary teachers who trained through other routes. We were not able to compare early years Teach First teachers with other teachers who specialised in early years education as early years was not distinguished from primary in the ITT-PP dataset. Since the number of early years teachers was small (there were 212 Teach First early years teachers between the 2013/14 and 2018/19 cohorts who achieved QTS and linked to the SWC), we were only able to estimate progression rates up to three years after NQT year and retention rates for up to four years after NQT year.

## 2.3 Definitions of main outcomes

We analysed two sets of outcomes in the evaluation, the first of which were primarily descriptive in nature. Specifically, we defined a set of variables to observe the proportion of teachers who trained through each route who achieved QTS, entered teaching, were in teaching in each year after their qualification, and were in middle and senior leadership after qualification. We considered a trainee to have achieved QTS if they did so in the last year of their training. This was in order to be able to report comparable estimates for all training years.[18]

Similarly, and for the same analytical reason, we defined a trainee who entered teaching as having done so in the year after achieving QTS.[19] We also defined an additional set of variables recording whether a qualified trainee was in teaching and in what role (classroom teacher, middle leader or senior leader), each year after qualification. We reported frequencies across each of these descriptive variables in Section 4.1, split by training route.

In addition to these descriptive variables, we also defined several variables that made up our main outcomes for the regression modelling. These variables were 'dynamic' in the sense that they used the longitudinal nature of the SWC data to record the future progression and retention outcomes of teachers.

We defined our progression and retention variables relative to the year in which a trainee was in their NQT year in a state-funded school (e.g. progression and retention one, two and three years after NQT year). This means that the dynamic variables were defined only for those teachers who achieved QTS, entered teaching and had a valid SWC record in their NQT year.[20]

Our first set of dynamic variables measured the 'progression' outcomes of NQTs to middle and senior leadership. We focussed on progression outcomes first, followed by retention, because a primary aim of the Teach First programme is to provide a leadership pipeline to schools serving

[18] Achieving QTS in a trainee's last training year is also how DfE report official statistics on QTS achievement rates. See https://www.gov.uk/government/statistics/initial-teacher-training-performance-profiles-2019-to-2020

[19] The DfE report entry into teaching within 18 months of having received qualification. However, the vast majority of qualified trainees who ever enter teaching do so in the year after achieving QTS, so in order for our definition to be comparable across training years, we have used this slightly narrower definition.

[20] In a minority of cases, some ITT trainees did not link to a record in the SWC in their NQT year. This could have been because the trainee left the Teach First Training Programme or because of data errors in either the SWC or the Teach First database. We outline limitations of the datasets, and our process for imputing likely data errors in Section 2.3 and the Methodological appendix.

disadvantaged communities. Progression to higher leadership positions for Teach First trainees is therefore a key outcome of the programme. We defined multiple progression variables to reflect the progression outcomes of NQTs from one to seven years after their NQT year (we observed retention seven years after NQT only for teachers who trained in the 2011/12 training years). Progression to middle and senior leadership is contingent on being in teaching and so was only defined for those trainees who achieved QTS, entered teaching and linked to the SWC in their NQT year and did not leave teaching.

A teacher progressed to middle leadership if they were in a classroom teacher role in their NQT year and then in a middle leadership role in a future year. Middle leadership is not coded explicitly in the SWC data, so we considered a teacher to be in middle leadership if they were recorded in a leading practitioner, excellent teacher, advanced skills teacher, advisory teacher role, head of year or head of department in the SWC. We also included as middle leaders those who received Teaching and Learning Responsibility (TLR) payments of £100 or more in a given year. This is a definition which DfE has previously used in its statistical reporting (DfE, 2017).

Similarly, an NQT was defined as having progressed to senior leadership if they were in a classroom teacher role in their NQT role and then in a senior leadership (assistant headteacher, deputy headteacher, headteacher or executive headteacher) role in a later year.

We also considered salary progression as an additional progression variable, in order to analyse how differences in progression rates to higher leadership positions ultimately impacted earnings. Salary progression also served as a confirmation of our findings on progression to middle leadership as it included NQTs who may have progressed into higher leadership roles (and therefore received higher earnings) but who were not picked up by our middle leadership definition outlined above. We measured salary progression by recording gross full-time equivalent (FTE) salary recorded in the SWC between Teach First teachers and teachers trained through other routes from one to seven years after NQT year. We made some adjustments to the salary measures to ensure comparability, which we outline in more detail in the Methodological appendix.

Our second key dynamic outcome was retention in teaching. An NQT was defined as being ‘retained in teaching’ if they were observed teaching in a school in the SWC data after their NQT year. Similarly to progression, we defined multiple retention variables to reflect the retention outcomes of NQTs from one to seven years after their NQT year.

## 2.4 Matching

Teachers and schools recruited to Teach First, differ systematically from those not recruited to the programme. This is due in part to the eligibility criteria (outlined in Section 1.3) which teachers and schools must meet to be recruited to the programme. It is therefore important to account for differences in the characteristics of teachers and the schools in which they teach that may account for part of the difference in progression and retention rates between the Teach First and comparison groups.

In order to ensure that we were making comparisons between Teach First teachers and the comparison groups on a like-for-like basis, we matched Teach First teachers to teachers who

trained through other routes who had similar characteristics and were teaching in similar schools. The key teacher characteristics which we included in the matching were age, gender, ethnicity (all from the SWC data), degree class and QTS subject (from the ITT-PP data). This is because previous research has indicated that there are differences in retention rates across each of these characteristics (DfE, 2017). Teach First teachers are also more likely than teachers who train through other routes to have attended a Russell Group university (Hutchings *et al.*, 2006), which may also be associated with different progression and retention rates. However, we were unable to include Russell Group university attendance in the matching as the ITT-PP data contained no information on the undergraduate degrees of teachers who trained through higher education and school- and employment-based routes.

School characteristics[21] that we included in the matching were: quintile of per pupil expenditure on supply teachers, quintile of the proportion of teachers with less than two years of experience (a proxy for teacher turnover) and Ofsted rating. We also included two measures of school deprivation in the matching: the quintile of the proportion of pupils eligible for free school meals (FSM) and the quintile of Income Deprivation Affecting Children Index (IDACI) proportion.

We included variables on the disadvantage of schools in the matching as Teach First schools are targeted for recruitment based in part on the proportion of pupils at the school who come from a disadvantaged background. The latest eligibility criteria is defined, in part, using the proportion of pupils from disadvantaged backgrounds measured using IDACI.[22] However, while Teach First prioritises income deprivation as a measure of disadvantage in its recruitment practices, this specific definition has evolved over time. We therefore also included the proportion of pupils eligible for FSM as an additional measure of school deprivation in the matching to control for any remaining differences in deprivation between Teach First and comparison schools.

In addition, Ofsted rating tends to be somewhat correlated with deprivation and may be an indicator of other wider challenges within schools. We therefore also included the Ofsted rating of schools to control for differences between Teach First and comparison schools.

We matched based on the characteristics of the school in which each teacher was teaching during their NQT year. This was to ensure that we were matching Teach First teachers to similar teachers who were teaching in similar schools at the same point in their teaching careers. There may be other school-level characteristics which differed between Teach First and comparison schools (attainment, school size, whether the school was part of a multi-academy trust, whether the school was in an urban or rural area, etc.). However, we did not include all of these characteristics in the matching because some were not observed in the data, and they were also likely to be correlated with the other characteristics which we did include in the matching. We checked for balance after

[21] All school characteristics except IDACI proportion were observed in the SWC data or in the DfE's public register of information about schools (https://www.get-information-schools.service.gov.uk/), which we linked to the SWC. We derived IDACI proportion from data in the National Pupil Database (NPD) data. We then linked school-level IDACI proportion to the SWC by matching a school's Unique Reference Number (URN).
[22] See https://www.teachfirst.org.uk/knowledge-base/npqs/eligibility

matching for attainment and school size to ensure that there were no substantial differences within the matched sample.

We used a statistical technique for the matching called 'Mahalanobis distance matching' (Rubin, 1980). We explored propensity score and coarsened exact matching as possible alternative matching techniques, but they did not yield suitable results. We discuss these alternative matching techniques in more detail in the Methodological appendix.

We matched the Teach First sample separately to each of the two comparison groups. Within each comparison group, we matched exactly on training year and region (for example, we ran a match for all Teach First trainees who began their training in 2011/12 in London with trainees from all other routes who began their training in the same year in the same region). Within each region and year combination, we matched each Teach First trainee with up to ten trainees from each comparison group that were the most similar in teacher characteristics and teaching in the most similar school.

The matching substantially improved the 'balance' in the matching characteristics between the samples. We provide further discussion of how we implemented the matching, including tables outlining balance in the sample before and after matching in the Methodological appendix.

## 2.5 Regression analysis

Our main analysis consisted of regression modelling of our main progression and retention outcomes, for Teach First teachers compared to each of the matched comparison groups. We used regression modelling in order to include a 'regression adjustment' in our comparison of progression and retention rates. Our regression analysis included as explanatory variables all variables which we included in the matching. This was done to adequately 'control' for any remaining imbalance in the covariates after the matching and to increase the precision of the estimates.

As the progression and retention outcomes were binary (i.e. 1/0) outcomes, we used a logistic regression model for the analysis. We reported the regression results as differences in percentage points (known as a 'marginal effect') for ease of interpretation. We also reported differences in progression outcomes as 'probability ratios' (e.g. the proportion of Teach First teachers who progressed to higher leadership divided by the proportion of comparison teachers who progressed to higher leadership). This was to compare how progression rates for Teach First teachers differed proportionally from teachers who trained through other routes.

The exception to this were the salary progression regressions, for which we used linear regression modelling estimated using ordinary least squares (OLS). We took the natural logarithm of our salary estimates to include as the dependent variable in the model, so that our main salary difference outputs could be interpreted as approximately representing percentage differences.

We also estimated additional specifications of our main regression models separately across specific sub-groups of interest in our samples. This was in order to determine if the difference in progression and retention rates between routes differed by teacher characteristics (age, gender,

degree class, ethnicity, whether the teacher moved school in the first two years of their career, qualification subject) or school characteristics (proportion of pupils eligible for FSM, Ofsted rating, region). We estimated these differences by including an 'interaction term' in the model, to determine whether our main effects were different across different groups, and whether these differences were statistically significant.

## 2.6 Limitations

Since our analysis relied on data held in large administrative datasets, it was affected by the limitations inherent in each one. In particular, the SWC only observes teachers who are working in state-sector schools in England. Therefore, any teacher who leaves to teach in an independent school, or in a school outside of England will appear to have left teaching, even though this may not in fact be the case.

Data entry errors may also have affected our estimates. This was arguably most likely in the SWC as most teachers are recorded in the SWC multiple times, once for every year in which they are teaching in a state-sector school. If a school fails to complete and return the SWC census, or if they return it with errors, then teachers may not appear in the SWC in a year in which they were in fact in teaching. This tends to particularly affect NQTs, since, having been appointed to start in September, they may have been missed from the SWC census taken in November if they were not added to schools' employment registers in time. Some of these records were imputed using the Database of Teacher Records (DTR), which consists of teacher pension records. We also corrected for this as much as possible by imputing records using contract start dates, for teachers which were highly likely to be affected by issues in the data collection. We outline this procedure in more detail in the Methodological appendix.

Data entry errors were also possible in the ITT-PP and Teach First databases, but since these records are not longitudinal, there was less scope for imputing missing or incorrect entries based on later records for the same trainee. Where errors in the data were likely (e.g. where an ITT trainee's placement school did not match between the Teach First and ITT-PP databases, or where training year, or observed region were likely to be incorrect), we were sometimes able to use the SWC to fill in missing or incorrect information (see the Methodological appendix for further details). In other cases, particularly where training year data is inconsistent, we were unable to fill in the missing record and removed the trainee from the analysis.

Additionally, the use of multiple administrative datasets in the analysis necessitated linking the data together in order to derive our main outcomes. The linkage proceeded by linking the Teach First database with the ITT-PP data, which we then further linked to the SWC. A consequence of this is that any records from the Teach First database which did not link with the ITT-PP data then did not link at all to the SWC data and therefore had no observable progression and retention outcomes. This could have happened because of data entry errors in either the ITT-PP or SWC, withdrawal from the Teach First programme (meaning that a trainee would have had no SWC records), or because a trainee was in a cohort from before 2008/09, which was the first collection year for the ITT-PP data.

The ITT-PP data also does not record any information on the school in which teachers who trained through higher education and school- and employment-based routes are placed during their training. This means that the first year in which we observed school characteristics which we could then include in the matching was a teacher's NQT year. However, the Teach First programme is one year longer in duration than other ITT routes, which posed a challenge for comparing retention rates between routes. We elaborate further on this challenge when interpretating the findings in Section 5.

Finally, our use of matching techniques and regression modelling on the matched samples implies that we have estimated the 'causal effect' of participating in Teach First ITT compared to other training routes. However, caution should be exercised in interpreting our estimates as reflective of a causal effect. This interpretation only holds if we were able to account for all possible variables which influenced selection into the Teach First Training Programme and also influenced our progression and retention outcomes. This was unlikely to be the case as we were unable to observe many of the competencies which Teach First assessed during the selection process (e.g. leadership, humility, respect, empathy, motivation, resilience and commitment to teaching). Our estimates are therefore not likely to reflect the true causal impact of the Teach First training programme on teachers' progression and retention outcomes but should be interpreted as indicative of how progression and retention outcomes broadly tend to differ between similar teachers in similar schools, but who trained through different training routes.

# 3 Description of the Teach First programme

Due to a range of differences between Teach First and other ITT training routes (e.g. programme design, selection approach, recruitment, brand etc.), Teach First trainees tend to have distinct characteristics compared to other (Hutchings *et al.*, 2006). This section outlines these contextual details with a focus on situating Teach First in the overall ITT market in terms of its size and coverage. We also outline differences in degree classifications, region, ethnic group and subject breakdowns compared to teachers who trained through other routes.

Our analysis of contextual details covers the years from the 2008/09 cohort to the 2018/19 cohort. These are the years for which we have data on teachers who trained through higher education and school- and employment-based routes through the ITT-PP data. This is a larger set of cohorts than we used for the regression modelling throughout the report. We included these additional years in order to provide context on how the characteristics of Teach First teachers have evolved in the years prior to our main analysis.

## 3.1 How did Teach First trainees differ from trainees on other routes?

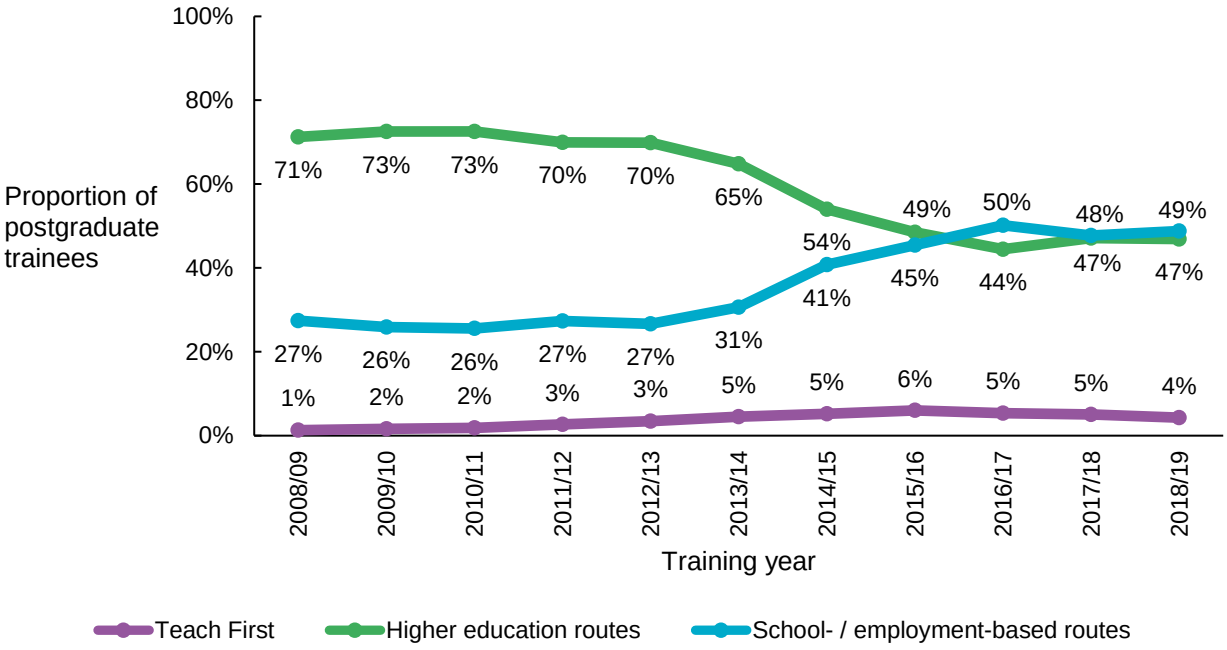
Teach First is a relatively small part of the overall postgraduate ITT market in England. Figure 1 shows that, in the most recent cohort for which we have data (2018/19), there were 1,250 Teach First trainees, making up around four per cent of all enrolled postgraduate trainees in that year.

Since 2008/09, the majority of postgraduate trainees trained through higher education routes, though increasing numbers of trainees more recently have trained through routes other than higher education. In 2018/19, 47 per cent of trainees trained through higher education routes, which was the largest *single* training route. Nearly half (49 per cent) of trainees in 2018/19 trained through school- and employment-based routes[23] together, which was slightly higher than the proportion of trainees who trained through higher education routes. However, the proportion of trainees who trained through school- and employment-based routes separately was smaller than for higher education routes. We report school- and employment-based routes together throughout this report because it was not possible to observe school- and employment-based routes separately for all years in the ITT-PP data.

The size of Teach First cohorts, and the proportion of all teachers who trained through Teach First, has, generally speaking, gradually grown over time. Teach First trainees made up about double the proportion of the overall number of postgraduate ITT trainees in 2018/19 compared to 2008/09 (when Teach First trainees made up about two per cent of all trainees). This has occurred in the context of growth in school- and employment-based training routes, through which similar numbers of trainees were trained in 2018/19 compared to higher education training routes.

[23] School- and employment-based routes consist of School-Centred Initial Teacher Training (SCITT), School Direct (unsalaried), School Direct (salaried), Postgraduate Teaching Apprenticeship and Graduate Teacher Programme ITT routes.

**Figure 1 Teach First cohort sizes have increased over time and made up a larger proportion of the number of postgraduate trainees in more recent cohorts**




Note: We focussed on the 2011/12 to 2017/18 cohorts for our main analysis. Figures for 2008/09 to 2010/11 and 2018/19 are provided for additional context. Percentages may not sum to 100 per cent due to rounding.

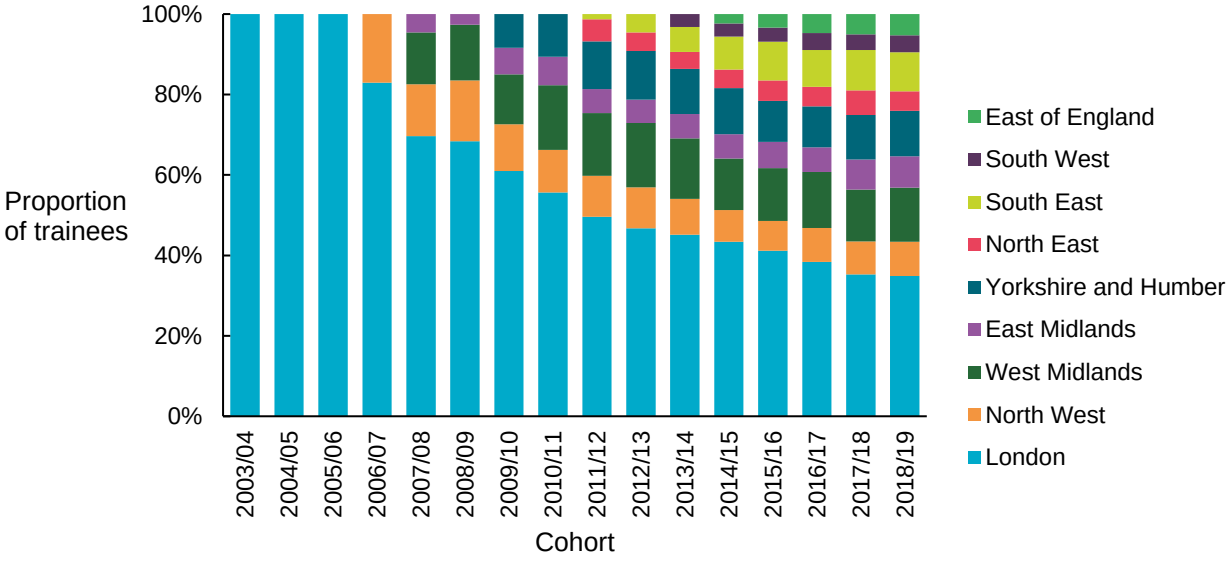
Source: NFER analysis of ITT-PP data for 2008/09 – 2018/19

The growth of Teach First in the postgraduate ITT market corresponds with a broader expansion of the programme to more regions. The first cohort of Teach First trainees in 2003/04 were all placed in schools in London, but the programme has since expanded to all regions in England.[24] This is in line with an increased focus on placing teachers within schools that are in areas of significant educational underperformance.

Figure 2 shows that, in the 2018/19 cohort, the largest proportion of trainees were placed in schools in London (35 per cent). This was, however, a substantially lower proportion than cohorts from previous years. In 2018/19, a considerable proportion of Teach First trainees were placed in schools in the North East and North West of England (five and nine per cent, respectively), the West Midlands (13 per cent) and Yorkshire and the Humber (11 per cent).

[24] We used the Government Office Regions (GOR) definitions of the regions of England in this analysis, rather than Teach First-specific region definitions, as region was coded using the GOR definitions in the ITT-PP and SWC data.

**Figure 2 Teach First recruits were placed only in schools in London in the earliest cohorts but the programme has expanded to every region in England as Teach First focusses on placing teachers in areas of significant educational underperformance**




Note: We focussed on the 2011/12 to 2017/18 cohorts for our main analysis. Figures for 2003/04 to 2010/11 and 2018/19 are provided for additional context.

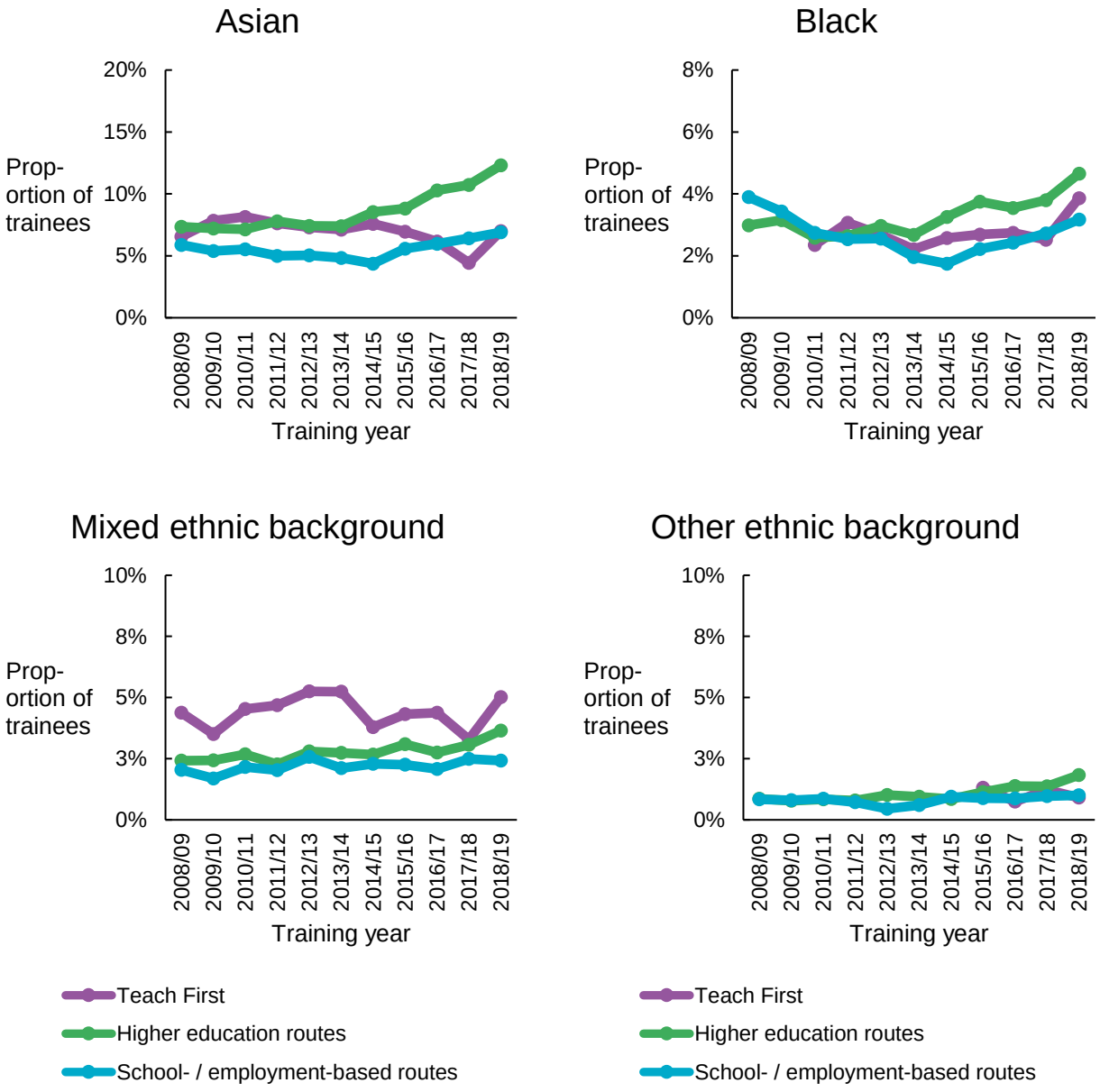
Source: NFER analysis of Teach First data for 2003/04 – 2018/19

### 3.1.1 Ethnic backgrounds of Teach First trainees

Promoting ethnic diversity in the teaching workforce is a key aim for Teach First, which influences its recruitment practices (Teach First, 2021). Teach First employs blind recruitment in its recruitment processes in order to reduce unconscious bias, meaning assessors have no information on the name, age, ethnicity or school of applicants.[25] Accordingly, previous research finds that, in 2019/20, the gaps in acceptance rates for applicants to Teach First from black, Asian, mixed and other ethnic backgrounds were smaller than for any other ITT training route (Worth *et al.*, 2022).

[25] See https://www.teachfirst.org.uk/diversity-inclusion

**Figure 3 The proportion of Teach First trainees from Asian, black, mixed and other ethnic backgrounds was somewhat similar to trainees on other routes up to the 2017/18 cohort, but has increased since then**




Note: Gaps in the series indicate sample sizes for an ethnic group were too small to report in that year.

Note: We focussed on the 2011/12 to 2017/18 cohorts for our main analysis. Figures for 2003/04 to 2010/11 and 2018/19 are provided for additional context.

Source: NFER analysis of Teach First and ITT-PP data for 2008/09 – 2018/19.

Figure 3 shows that, in most cohorts since 2008/09, the proportion of Teach First trainees from Asian, black, mixed and other ethnic backgrounds was similar to trainees from higher education routes, but generally larger than those who trained through school- and employment-based routes. In the 2018/19 cohort (the last year of available data for trainees on higher education and school- and employment-based routes), 17 per cent of trainees were from Asian, black, mixed or other ethnic backgrounds. This was a slightly smaller proportion than for trainees on higher education routes, of whom 19 per cent were of Asian, black, mixed and other ethnic background and larger than the 13 per cent of trainees from school- and employment-based routes. Trainees from Asian backgrounds made up the largest proportion of Teach First trainees in 2018/19 from Asian, black, mixed and other ethnic backgrounds, at seven per cent. Trainees from black, mixed and other ethnic backgrounds made up four, five and one per cent, respectively.

The proportion of trainees from Asian, black and mixed and other ethnic backgrounds has generally been increasing since 2008/09 for all routes. This is in line with increasing representation of people from Asian, black, mixed and other ethnic backgrounds who enter into postgraduate studies more generally.[26] This is particularly true for trainees from Asian backgrounds on higher education routes, who in 2018/19 made up a larger share of trainees than for any other training route.

We were only able to compare the diversity of Teach First cohorts to other routes up to 2018/19 within the data we used for the analysis. However, the ethnic backgrounds of Teach First cohorts has changed somewhat since 2018/19. In the 2020/21 cohort, twenty-three per cent of Teach First trainees were from black, Asian, mixed or other ethnic backgrounds, six percentage points higher than in 2018/19 (Kuznetsova, 2021). This is as diversity becomes an even more important aim for Teach First, with the organisation now publicly reporting on the increasing diversity of its cohorts.

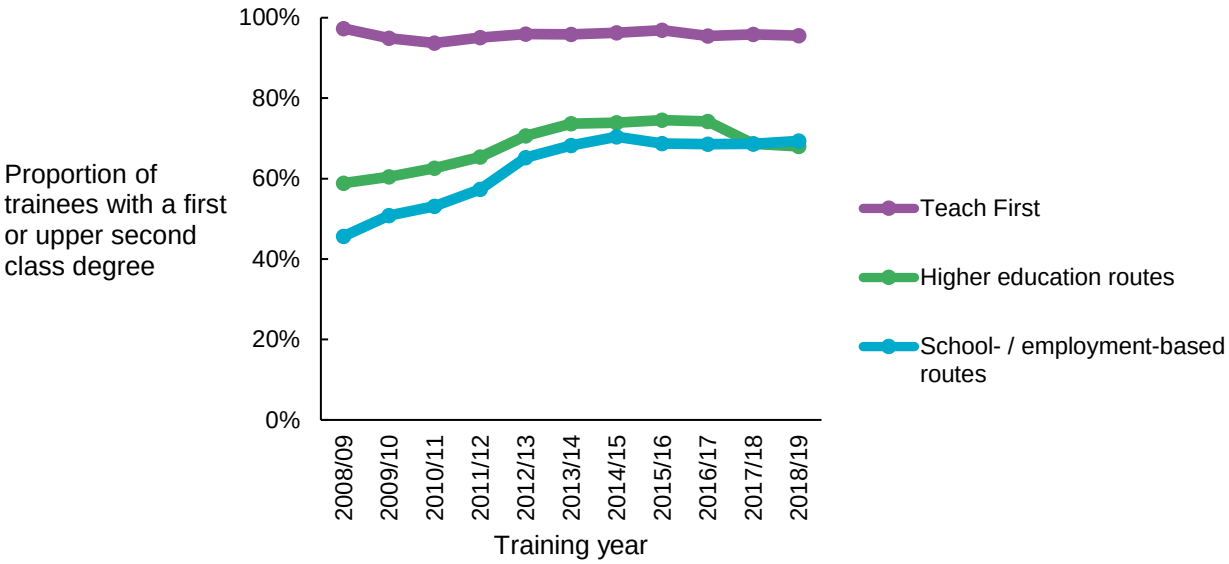
### 3.1.2 The undergraduate degree qualifications of Teach First trainees

Teach First trainees are more likely than trainees on other routes to have high undergraduate degree classifications. Nearly all Teach First trainees (between 95 and 97 per cent) in all cohorts held a first-class or upper second-class undergraduate degree, and this proportion was similar across cohorts, partly as a consequence of contractual targets agreed between DfE and Teach First.

Trainees from other ITT routes in the same years were significantly less likely to hold a first-class or upper second-class degree. Figure 4 shows that the proportion of trainees from school- and employment-based routes holding a first or upper second-class degree was 46 per cent in 2008/09 and 59 per cent for trainees in higher education routes in the same year. While this has gradually increased since 2008/09, the proportion of Teach First trainees holding the highest degree classes in 2018/19 was still about 25 percentage points higher than trainees on other routes.

[26] See https://www.ethnicity-facts-figures.service.gov.uk/education-skills-and-training/higher-education/first-year-entrants-onto-postgraduate-degrees/latest

**Figure 4 Teach First trainees were much more likely to have a first-class or upper second-class undergraduate degree than teachers who trained through other routes**

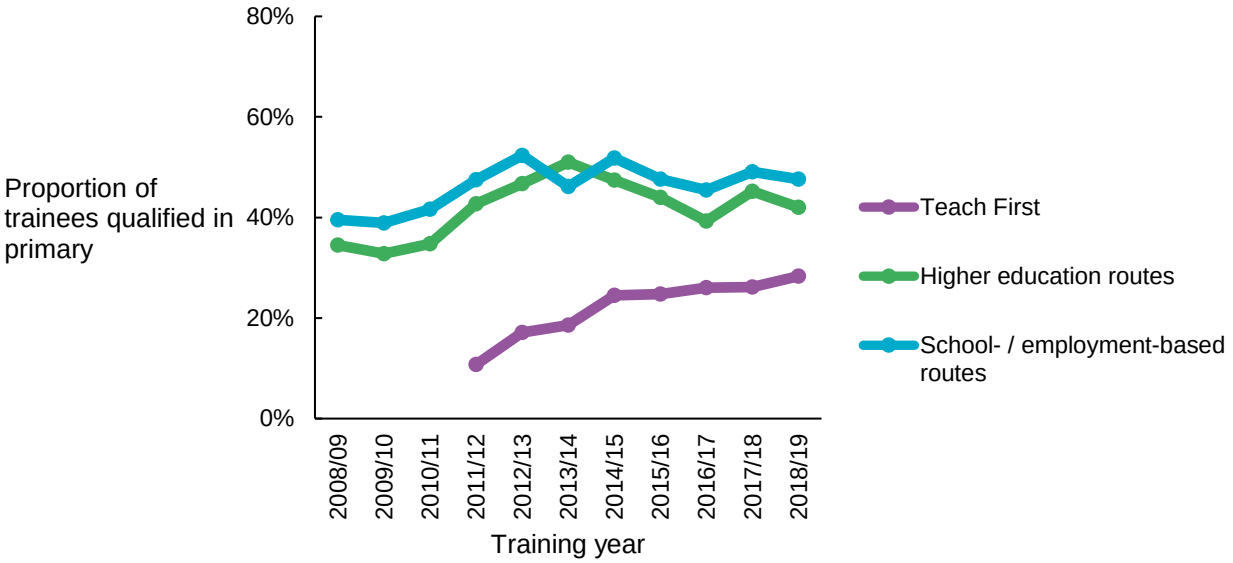



Source: NFER analysis of Teach First and ITT-PP data for 2008/09 – 2018/19.

### 3.1.3 Phase and qualification subject for Teach First trainees

As we note in Section 1.3, Teach First aims to train teachers in subjects which schools serving disadvantaged communities tend to find it difficult to recruit for. Accordingly, there are differences across training routes in the phase and subject (for trainees qualified as secondary teachers) in which teachers train to teach. Figure 5 shows that, in 2018/19, nearly half of trainees in higher education and school- and employment-based routes qualified as primary teachers. Teach First, however, only began training primary teachers in 2011/12. In that cohort, only 11 per cent of all trainees trained in primary, though this has grown over time so that, by the 2018/19 cohort, 28 per cent of Teach First trainees qualified as primary teachers.

**Figure 5 A higher proportion of trainees from higher education and school- and employment-based routes than Teach First qualified as primary teachers**




Note: Teach First only began recruiting primary teachers from the 2011/12 cohort onwards.

Source: NFER analysis of ITT-PP data for 2008/09 – 2018/19.

Teacher shortages in STEM subjects (particularly physics and chemistry) tend to be among the most acute of all subjects (Worth and Faulkner-Ellis, 2022). Accordingly, Teach First aims to recruit disproportionately for science and mathematics. Figure 6 shows that from 2008/09 to 2014/15, a larger proportion of Teach First secondary trainees compared to trainees from other routes qualified in mathematics and science subjects (physics, chemistry and biology). The proportion of Teach First secondary trainees who qualified in mathematics and science subjects did, however, decline somewhat from 2014/15, falling broadly in line with other ITT routes in 2018/19.

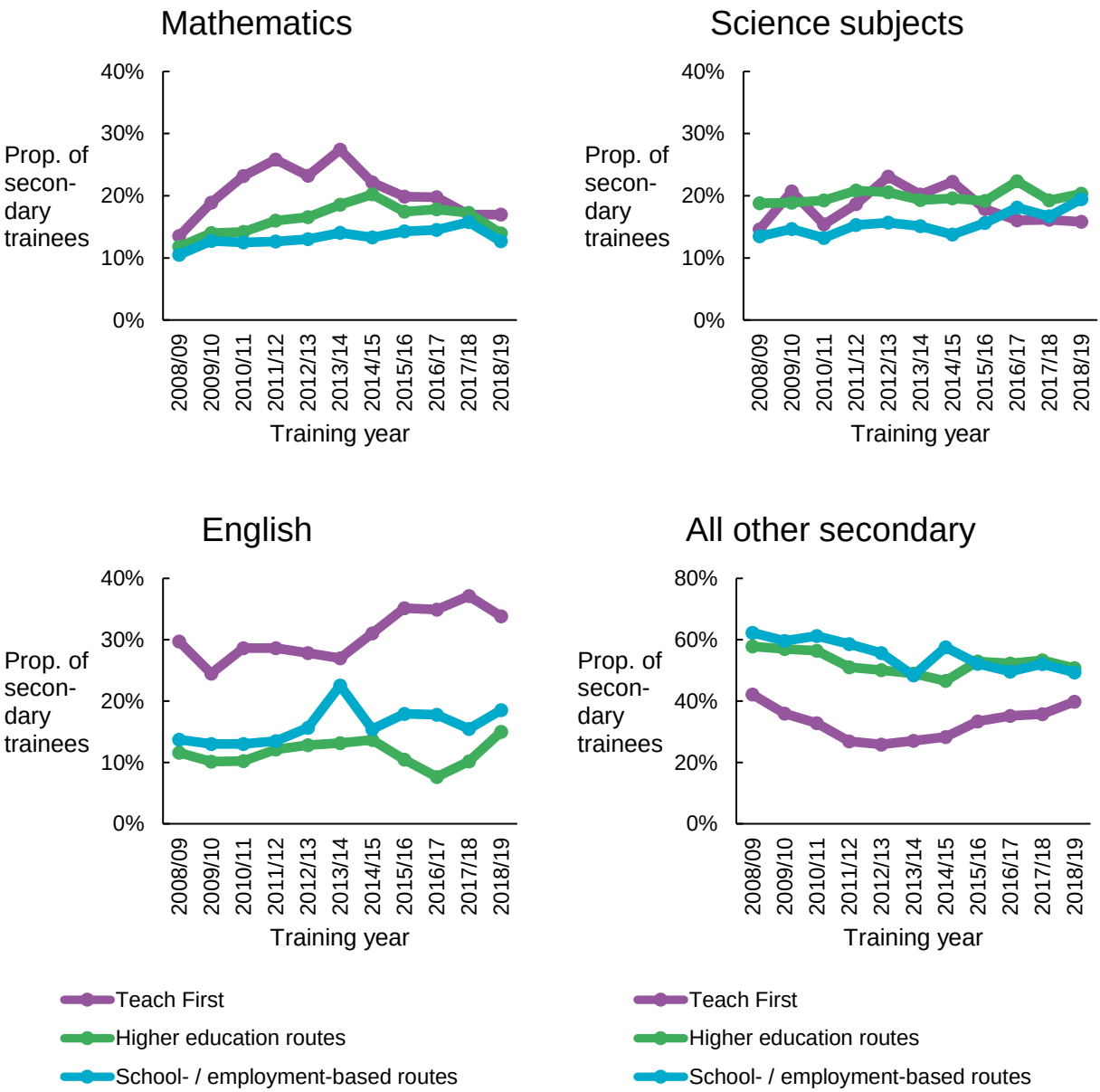
**Figure 6 The proportion of Teach First secondary trainees who qualified in mathematics and science subjects tended to be higher than for other routes, but has declined since 2014/15**


Source: NFER analysis of Teach First and ITT-PP data for 2008/09 – 2018/19.

Figure 7 shows that the proportion of secondary teachers by subject. We included mathematics, science subjects and English in particular as these are key subjects which Teach First has tended to focus on. We included all other secondary subjects in one category (which included modern foreign languages, history, geography, art, music, drama, computing, etc.).

Mathematics and science subjects have followed somewhat different patterns. Teachers who qualified in mathematics accounted for nearly 30 per cent of qualified secondary Teach First trainees in the early 2010s, but this has since declined to levels similar to higher education and school- and employment-based routes. In 2018/19 (the last year for which data across all routes was available), 18 per cent of secondary Teach First trainees qualified in mathematics, which was slightly higher than for teachers who trained through higher education and school- and employment-based routes (14 and 13 per cent, respectively).

**Figure 7 A higher proportion of Teach First secondary teachers than for teachers who trained through other routes tended to qualify in mathematics, science subjects and English, and less for other secondary subjects, but this has declined somewhat since the mid-2010s**




Source: NFER analysis of Teach First and ITT-PP data for 2008/09 – 2018/19.

The proportion of Teach First teachers that qualified in science subjects accounted for about one-fifth of qualified Teach First secondary teachers during the early 2010s, similar to the proportion of qualified secondary teachers who trained through higher education routes, and larger than for school- and employment-based routes. This has declined slightly such that, in 2018/19, 16 per cent

of Teach First secondary teachers were qualified in science, compared to 20 per cent of secondary teachers who trained through higher education and school- and employment-based routes.

In contrast, the proportion of Teach First secondary teachers qualified in English has been substantially higher than for secondary teachers who trained through other routes for all cohorts. Around 30 per cent of Teach First secondary teachers from 2008/09 to 2014/15 qualified in English, with this proportion increasing slightly from 2014/15 to 2018/19. In the 2018/19 training year (the last year data across routes was available), 34 per cent of Teach First secondary teachers qualified in English, which was higher than for secondary teachers who trained through higher education and school- and employment-based routes (15 and 19 per cent, respectively).

Since Teach First secondary teachers tend to be more likely than teachers who train through other routes to qualify in mathematics, science subjects and English, the proportion who qualified in 'all other secondary subjects' (many of which tend to recruit well) was lower than for other routes. In more recent cohorts (2016/17 to 2018/19), this gap has narrowed somewhat as the proportion of Teach First secondary teachers who qualified in mathematics and science subjects has declined to levels similar to other routes. This suggests that the subjects that secondary Teach First teachers teach have gradually become somewhat more similar to teachers who trained through other routes, with the exception of English.

# 4 The career progression of Teach First teachers

As we outlined in Section 1.3, a key aim of the Teach First Training Programme is to provide a pipeline of potential leaders for schools serving disadvantaged communities. Accordingly, Teach First teachers tend to have a different career trajectory than other teachers and, specifically, are more likely to progress into higher leadership roles than teachers who train through other ITT routes (Allen *et al.*, 2016).

In this section, we analyse the progression of Teach First teachers to middle and senior leadership compared to teachers who trained through higher education and school- and employment-based routes. We show how teachers who trained through Teach First between 2011/12 and 2017/18 moved more quickly into middle and senior leadership roles and that this translated into higher earnings for Teach First teachers, compared to similar teachers who were teaching in similar schools but who trained through other routes.

## 4.1 The proportion of teachers who trained through different routes who were in middle and senior leadership after entering teaching

Qualified trainees who enter and stay in teaching typically begin working in schools in a classroom teacher role and, gradually, progress to higher leadership levels later in their careers. Across all training routes, the proportion of teachers who stay in teaching (Section 5 discusses in detail the differences across routes in the proportion of teachers who stay in teaching) and are working in middle or senior leadership increases over time.

Middle leaders are teachers who move into school leadership positions through subject matter, pedagogical or managerial expertise. Middle leadership is not a role that is explicitly coded in the SWC data, so we considered a teacher to be in middle leadership if they were recorded in a leading practitioner, excellent teacher, advanced skills teacher, advisory teacher, head of year or head of department role in the SWC. We also considered those who received Teaching and Learning Responsibility (TLR) payments of £100 or more in an academic year to be middle leaders, to include those teachers who were paid to take on additional responsibility but who were still recorded in a classroom teacher role. Senior leaders were those who are in an assistant headteacher, deputy headteacher, headteacher or executive headteacher[27] role and, unlike middle leadership, these roles are explicitly coded in the SWC.

### 4.1.1 The proportion of teachers who were in a higher leadership role (middle and senior leadership combined) after QTS

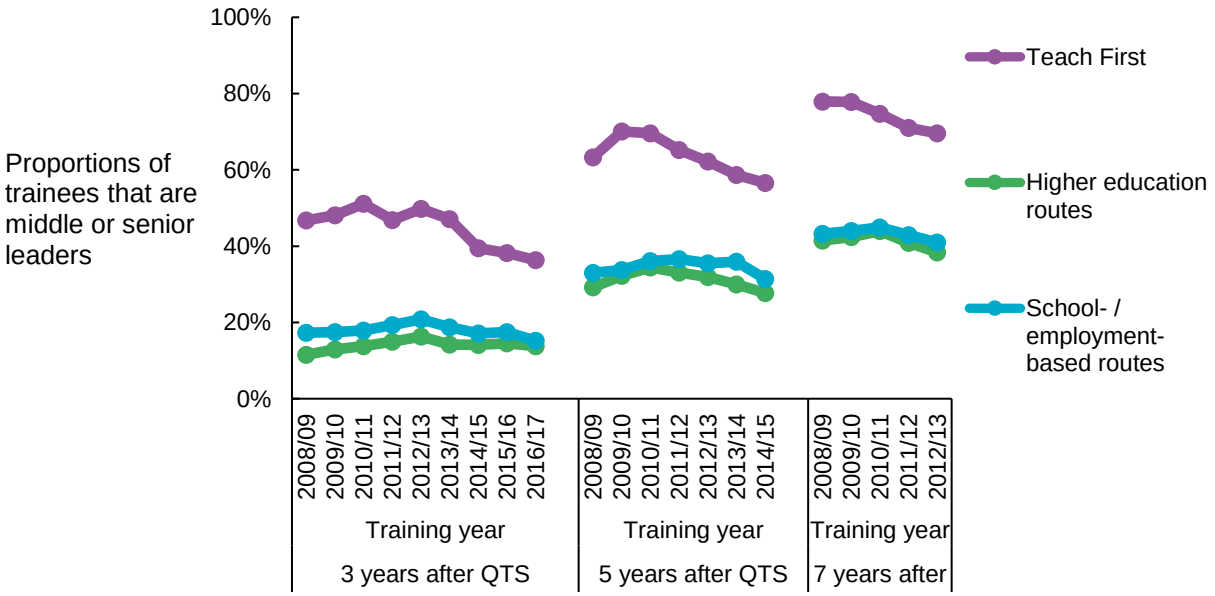
There were significant differences between training routes in the proportion of teachers in different roles over time. In this section, we show how many teachers across training routes were in any higher leadership role (either middle or senior leadership) as there were too few transitions into senior leadership within the first six years after QTS to analyse middle and senior leadership

[27] We were only able to observe executive headteachers working in state-sector schools within the SWC data.

separately. Section 4.1.2 shows the proportion of teachers across training routes who were in middle and senior leadership separately, but only for seven years after QTS, where sample sizes are sufficient.

Figure 8 shows that the proportion of teachers who trained through Teach First and were in a middle or senior leadership role was substantially higher than teachers who trained through any other route throughout the first seven years of their careers. Specifically, between 35 and 50 per cent (depending on the cohort) of Teach First teachers who trained between 2008/09 and 2016/17 were in a middle or senior leadership position three years after QTS. This is more than double the proportion of teachers who trained through higher education or school- and employment-based routes in the same years who were in middle[28] or senior leadership three years after QTS.

**Figure 8 Teach First teachers were more likely than teachers from other routes to be in a middle/senior leadership role; this gap has narrowed in more recent cohorts**




Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

The difference in the proportion of teachers who were middle and senior leaders persisted over time. Around 40 per cent of teachers who trained through higher education or school- and employment-based routes between 2008/09 and 2012/13 were in a middle or senior leadership position seven years after QTS. By this time, the proportion of Teach First teachers who were in middle or senior leadership roles was more than 70 per cent.

[28] Middle leadership was defined as teachers who were recorded in a leading practitioner, excellent teacher, advanced skills teacher, or advisory teacher role in the SWC. We also included as middle leaders those who received Teaching and Learning Responsibility (TLR) payments of £100 or more in a given year.

In more recent cohorts, the proportion of Teach First teachers teaching in middle or senior leadership has declined. For example, 36 per cent of Teach First teachers who began their training in 2016/17 were in middle or senior leadership three years after QTS, compared to 47 per cent of those who began their training in 2008/09. A similar decline in the proportion of Teach First teachers who were middle and senior leaders five and seven years after QTS was also apparent. This has led to a narrowing of the gap in the proportion of Teach First teachers who were middle or senior leaders compared to those who trained through other routes in the same years three, five and seven years after QTS.

Teach First teachers specialising in early years education were slightly less likely to be in a middle or senior leadership position three years after QTS (29 per cent) than other Teach First teachers qualified in primary education (36 per cent). However, this rate of middle and senior leadership progression was more than double the proportion of teachers who trained in primary education through other routes who were in middle or senior leadership three years after QTS (14 per cent).

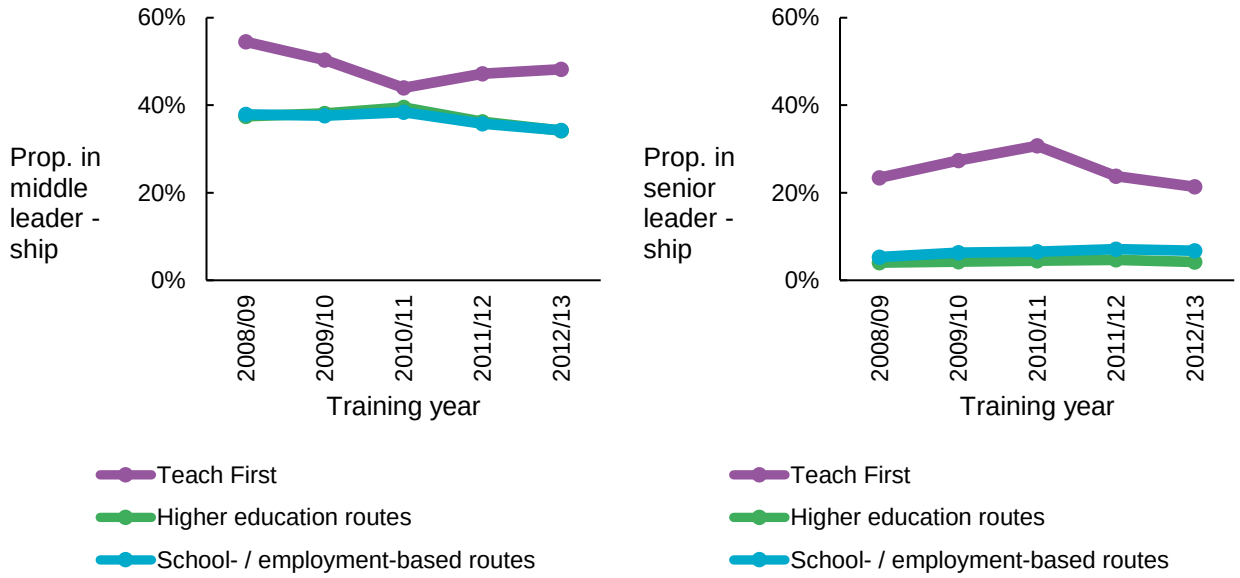
While Teach First teachers were more likely than teachers who trained through other routes to be in a middle or senior leadership role, this was likely to be due in part to differences in the characteristics of Teach First teachers and the schools in which they were teaching. As we showed in Section 3, a large proportion of Teach First teachers were placed in schools in London. However, the rate of progression to higher leadership positions for all teachers in London, regardless of training route, is higher than in other regions (Worth *et al.*, 2018). Similarly, Teach First teachers were more likely than teachers who trained through other routes to be teaching in disadvantaged schools. Schools with higher proportions of disadvantaged pupils tend to have higher turnover rates than schools with fewer disadvantaged pupils (Allen *et al*, 2016), which may lead to more opportunities for career advancement.

In Section 5.3, we analyse how much of this difference was due to differences in teacher and school characteristics. The results show that Teach First teachers were considerably more likely to progress to higher leadership roles than teachers who trained through other routes, even when comparing to similar teachers teaching in similar schools. Differences in teacher and school characteristics between routes therefore explain only a small part of the difference in progression rates.

### 4.1.2 The proportion of teachers who were middle and senior leaders seven years after QTS

Seven years after QTS, sufficient numbers of teachers who trained through higher education and school- and employment-based routes had progressed into higher leadership to analyse middle and senior leadership separately. Figure 9 shows that, seven years after QTS, Teach First teachers were more likely to be in both middle and senior leadership than teachers who trained through other routes.

**Figure 9 Teach First teachers were more likely than teachers from other routes to be in a middle leadership (left panel) and a senior leadership (right panel) role seven years after QTS**




Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

Specifically, seven years after QTS, about half of Teach First teachers were in a middle leadership position. This was larger than for teachers who trained through higher education and school- and employment-based routes, where about a third (depending on the training year) were in middle leadership.

A smaller proportion were in senior leadership positions than middle leadership seven years after QTS. However, the gap between the proportion of teachers in senior leadership was much larger between Teach First and other routes than for middle leadership. Specifically, about a quarter of Teach First teachers were in senior leadership seven years after QTS, compared to about one in twenty for teachers who trained through higher education and school- and employment-based routes (depending on the training year).

## 4.2 Comparing progression to middle leadership for Teach First teachers to similar teachers teaching in similar schools

In this section, we analysed the rate of progression into middle leadership using the matched sample of Teach First teachers and teachers who trained through other routes. We compared progression rates using the matched sample to ensure that differences in the characteristics of teachers between Teach First and other training routes, as well as differences in the schools in which they teach, were not the primary driver of the difference in progression rates.

The variables we used in the matching included teacher and school characteristics such as age, gender, ethnicity, school deprivation, region, etc. We outlined the full set of variables and details on the matching methodology in more detail in Section 2.2.3.

We analysed the full, matched sample of teachers who began their training between 2011/12 and 2017/18, to determine how the likelihood of progression to middle leadership from one to seven years after NQT year differed between similar teachers who trained through different routes but began teaching in their NQT year in similar schools.

### 4.2.1 Progression to middle leadership for Teach First teachers compared to similar teachers in similar schools

Figure 10 shows that, among those who did not leave teaching,[29] Teach First teachers moved into middle leadership significantly more quickly than similar teachers who were teaching in similar schools but who trained through other routes. This comparison was based on the matched sample, so the difference in progression rates was not driven by differences in teacher and school characteristics between Teach First and teachers who trained through other routes.

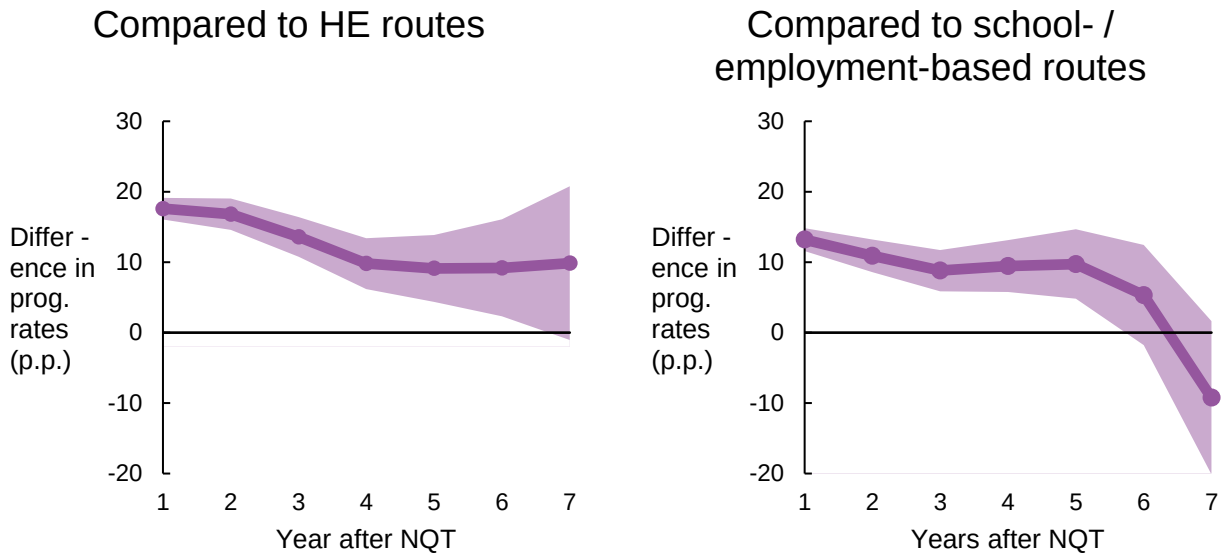
This difference was largest one year after NQT year, where a quarter of Teach First teachers moved into a middle leadership position. For similar teachers who were teaching in similar schools but who trained through higher education routes, seven per cent of teachers moved into middle leadership and so the rate of progression for Teach First teachers was a statistically significant 18 percentage points higher. Compared to similar teachers who trained through higher education routes, Teach First teachers were therefore three times more likely to move into middle leadership one year after NQT year.

The progression rate to middle leadership for Teach First teachers one year after NQT year, was also 13 percentage points higher than for teachers who trained through school- and employment-based routes. This means that, one year after NQT year, Teach First teachers were twice as likely to be in a middle leadership position one year after NQT year, compared to similar teachers teaching in similar schools who trained through school- and employment-based routes.

The gap in progression rates was slightly smaller when compared to matched teachers who trained through school- and employment-based routes than compared to matched teachers who trained through higher education routes. This is because a higher proportion of teachers who trained through school- and employment-based routes were in middle leadership after their NQT year compared to teachers who trained through higher education routes. For example, one year after NQT year, 12 per cent of teachers who trained through school- and employment-based routes were in middle leadership, compared to seven per cent for teachers who trained through higher education routes.

[29] There were significant differences between training routes in retention rates which we outline in depth in Section 5.

**Figure 10 Progression rates to middle leadership for Teach First teachers were statistically significantly higher than other routes**




Note: Error bands represent 95 per cent confidence intervals. Estimates were not statistically significant where the bands cross the horizontal axis.

Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

The gap in progression rates compared to both routes narrowed from two years after NQT year onwards. This is because the proportion of teachers who trained through other routes who were in middle leadership began to 'catch up' to teachers who trained through Teach First over time. For example, three and five years after NQT year, respectively, 50 and 59 per cent of Teach First teachers progressed into middle leadership, compared with 36 and 50 per cent of similar teachers who trained through higher education routes in the same years after NQT year. This is 14 and 9 percentage points, or 40 and 20 per cent, higher than teachers who trained through higher education routes. The difference in progression rates was not statistically significantly different between Teach First teachers and teachers who trained through higher education routes seven years after NQT year.

Similarly, three and five years after NQT year, 40 and 50 per cent of teachers who trained through school- and employment-based routes progressed into middle leadership, respectively. The progression rate for Teach First teachers was therefore 9 and 10 percentage points, or 20 per cent higher. Seven years after NQT year, a larger proportion of teachers who trained through school- and employment-based routes than Teach First teachers progressed into middle leadership (leading to a negative gap in the right panel of Figure 10), but this difference was not statistically significant.

For Teach First teachers who specialised in early years education who stayed in teaching, a smaller proportion (28 per cent) progressed into middle leadership three years after NQT year than

primary Teach First teachers (36 per cent). This was, however, 10 and five percentage points larger than for similar primary teachers who trained through higher education and school- and employment-based routes (18 and 23 per cent, respectively).

### 4.2.2 Differences in the gap in progression rates to middle leadership by training year, teacher and school characteristics

Teach First teachers progress more quickly into middle leadership than similar teachers teaching in similar schools in all training years. There were no statistically significant differences in the gap in progression rates over time when Teach First was compared to either higher education or school- and employment-based routes. This suggests that gaps in progression rates have not substantially changed over time.

We also analysed how the difference in progression rates to middle leadership between routes depended on the characteristics of the teacher and the school they were teaching in. The teacher characteristics we included in the analysis were: age, ethnicity, undergraduate degree class, whether the teacher moves school in the first two years of their career, and the subject in which they qualified. The school characteristics we included in the analysis were: school deprivation (measured by the proportion of pupils eligible for free school meals), Ofsted rating, region, the number of Teach First teachers and teachers working at the school and the number of Teach First training programmes the school had previously engaged with.

However, there were no statistically significant differences in the gap in progression rates across any of the teacher or school characteristics (including the number of Teach First teachers working at the school or the number of Teach First programmes a school had previously engaged with). This suggests that the gap in progression rates between Teach First and similar teachers teaching in similar schools was not significantly different between teachers of different ages, ethnicities, degree classes, or teaching in different types of schools.

## 4.3 Comparing progression to senior leadership for Teach First teachers to similar teachers teaching in similar schools

Similarly to Section 4.2, this section considers differences in the progression rate for Teach First teachers to senior leadership. We analysed the full, matched sample of teachers who started their training between 2011/12 and 2017/18 cohorts to determine how the likelihood of progression to senior leadership after NQT year differed between routes on a like-for-like basis. The numbers of teachers, particularly those on higher education and school- and employment-based routes who progressed to senior leadership one year after NQT year were too small to report and so we focussed primarily on progression rates from two to seven years after NQT year.

### 4.3.1 Progression to senior leadership for Teach First teachers compared to similar teachers in similar schools

Figure 11 shows that, similarly to middle leadership, Teach First teachers who stayed in teaching progressed to senior leadership more quickly than teachers who trained through other routes. Progression rates to senior leadership two years after NQT year were only slightly higher for Teach First teachers than for teachers who trained through higher education and school- and employment-based routes (though this difference was statistically significant). This gap widened significantly between three and seven years after NQT year.

Specifically, two years after NQT year, 0.07 per cent of teachers who trained through higher education routes were in a senior leadership position. At the same point in their careers, 1.2 per cent of Teach First teachers were in a senior leadership role, which was a statistically significant 1.2 percentage points, or 19 times, higher.

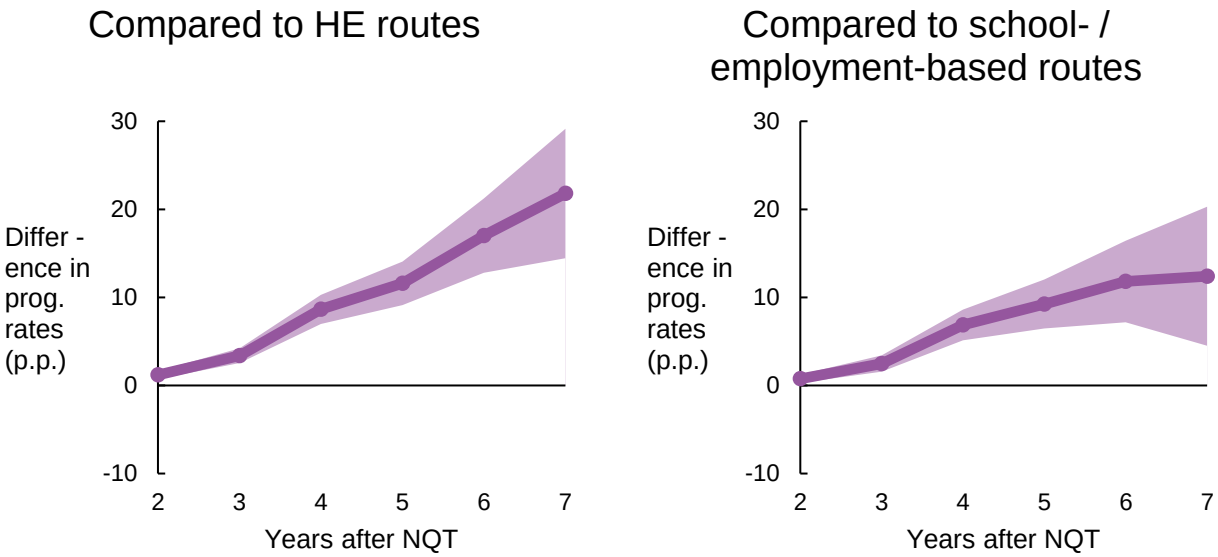
Progression rates to senior leadership for Teach First teachers were persistently higher than matched teachers who trained through other routes, and this gap grew in percentage point terms over time. The proportion of Teach First teachers who were in senior leadership five and seven years after NQT year was 14 and 30 per cent. The same proportion of similar teachers who trained through higher education routes who progressed to senior leadership was two and eight per cent. Progression rates for Teach First teachers were therefore a statistically significant 12 and 22 percentage points (six and four times) larger than similar teachers who trained through higher education routes.

The widening of the gap in progression rates was due to Teach First teachers moving into senior leadership much more quickly within seven years after NQT year than similar teachers who trained through higher education routes. Five years after NQT year, 14 per cent of Teach First teachers were in senior leadership, and this rose to 30 per cent by seven years. For matched teachers who trained through higher education routes, this proportion was two per cent and eight per cent, five and seven years after NQT year.

Progression to senior leadership is a relatively long-term career outcome since small proportions of teachers move into senior leadership in the first five years of their careers. Further into their careers, as more teachers from all routes move into senior leadership roles, the gap in progression rates compared to Teach First may narrow. This is similar to how the gap in progression rates to middle leadership narrows over time, as we showed in Section 4.2.

Progression rates for Teach First teachers followed a somewhat similar pattern when we compared to similar teachers who trained through school- and employment-based routes. However, like with progression to middle leadership, higher proportions of teachers who trained through school- and employment-based routes progressed into senior leadership in the first seven years of their careers compared to higher education routes. Two years after their NQT year, 0.4 per cent of matched teachers who trained through school- and employment-based routes were in senior leadership. This grew to five and 15 per cent, five and seven years after NQT year. Two years after NQT year, progression rates for Teach First teachers were therefore a statistically significant 0.8 percentage points higher than similar teachers who trained through school- and employment-based routes.

**Figure 11 Progression rates to senior leadership for Teach First teachers were statistically significantly higher than other routes**




Note: Error bands represent 95 per cent confidence intervals. Estimates were not statistically significant where the bands cross the horizontal axis.

Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2019/20) data.

Five and seven years after NQT year, progression rates for teachers with similar teacher and school characteristics who trained through school- and employment-based routes were five and 15 per cent, respectively. Progression rates for Teach First teachers were therefore a statistically significant nine and 12 percentage points higher. This means Teach First teachers were about three times as likely to progress to senior leadership two and five years after NQT year than similar teachers teaching in similar schools but who trained through school- and employment-based routes. Seven years after NQT year, Teach First teachers were two times as likely to progress to senior leadership.

Six and seven years after NQT year, the difference in progression rates between Teach First teachers and teachers who trained through school- and employment-based routes began to narrow as the proportion of teachers who trained through school- and employment-based routes 'caught up' to Teach First teachers. As more and more teachers progress into senior leadership later than seven years after NQT year, it is possible that the difference in progression rates compared to similar teachers who trained through higher education routes may follow a similar pattern.

### 4.3.2 Differences in the gap in progression rates to senior leadership by training year, teacher and school characteristics

Similarly to Sections 4.2.2, we also analysed whether these differences in progression rates between routes differed across training year. We found that there were no statistically significant differences in the gap across training year, suggesting that it has not substantially changed over time.

We also analysed whether there were differences in the gap across teacher and school characteristics (the same as those outlined in Section 4.2.2). However, we found that there were no statistically significant differences across any teacher or school characteristic.

## 4.4 Comparing salary progression for Teach First teachers to similar teachers teaching in similar schools

The final progression outcome we analysed was salary progression for teachers who stayed in teaching. In Sections 4.2 and 4.3, we showed that Teach First teachers were significantly more likely to be promoted to middle and senior leadership, compared to similar teachers teaching in similar schools who trained through other routes. The main purpose of this section is to extend the analysis to outline how faster progression into higher leadership ultimately affected pay for Teach First teachers.

We also use this analysis to confirm our findings on progression to middle leadership. Analysing pay progression over time may pick up pay increases for teachers who took on additional responsibilities and moved up the pay scale, but who the SWC indicated were not in a middle leadership position.

We analysed pay progression for all teachers combined who trained between 2011/12 and 2017/18. We considered gross full time equivalent (FTE)[30] salary as recorded in the SWC as this included additional payments (such as TLR payments) beyond each teacher's base salary, which could be associated with increased responsibilities, and it was comparable between teachers working part-time and full-time. Our results also controlled for salary differences due to London salary weightings. We provide further details on how we do this in the Methodological appendix.

### 4.4.1 Salary progression for Teach First teachers compared to similar teachers in similar schools

Figure 12 shows that, in their NQT year, Teach First teachers tended to earn slightly less than similar teachers who trained through other routes. This difference was statistically significant but small, at about two per cent, amounting to an annual difference of about £500. This was likely due to the very small proportion of Teach First teachers in their NQT year who continued to be recorded in the SWC data as unqualified teachers. This could reflect the small number of Teach

[30] The FTE adjustment scales up salaries for teachers who are teaching part time to be reflective of what they would be earning if they were teaching full time.

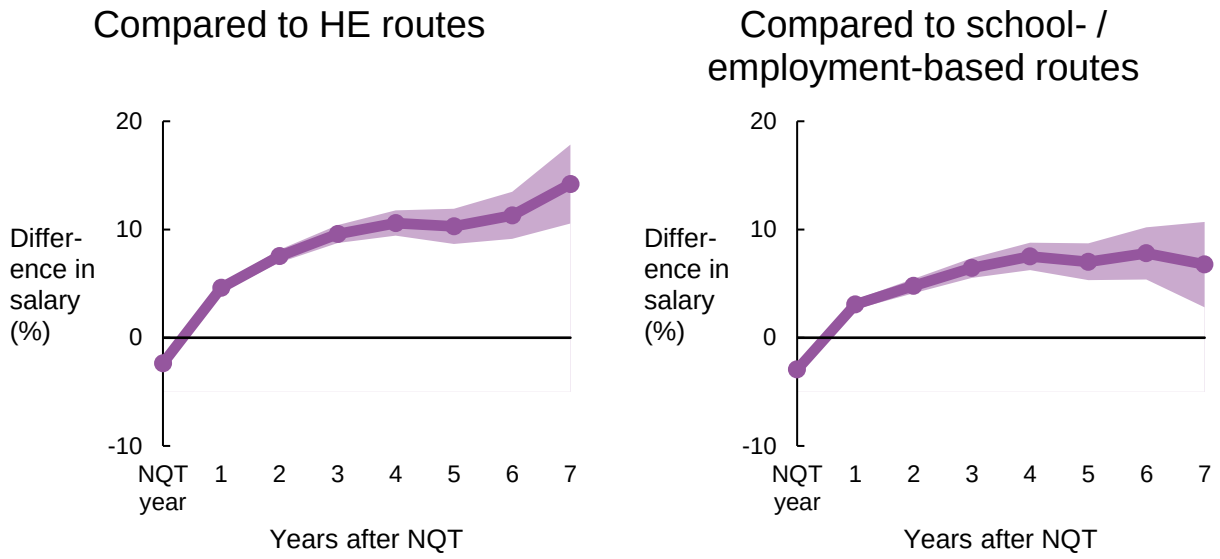
First teachers each year whose QTS assessment was deferred and who therefore remained on the unqualified teacher pay scale.

From one to seven years after NQT year, however, Teach First teachers tended to earn more than similar teachers who trained through other routes. Compared to similar teachers who trained through higher education routes, Teach First teachers earned about five per cent more one year after NQT year, and 10 and 14 per cent more five and seven years after NQT year, respectively.

Teach First teachers also earned more than similar teachers teaching in similar schools who trained through school- and employment-based routes, but this difference was slightly smaller than when compared to teachers who trained through higher education routes. One year after NQT year, Teach First teachers earned three per cent more, while five and seven years after NQT year, they earned seven per cent more.

Increases in salary are a result of teachers who either moved up the main teacher pay scale or moved from the main to the upper or leadership pay scale as they progressed to higher leadership levels. Salary increases could also reflect teachers who received TLR payments for taking on additional responsibilities in the school. Therefore, it is reassuring that the pattern of salary progression for Teach First teachers broadly followed the same patterns as progression to middle and senior leadership.

**Figure 12 Teach First teachers were significantly more likely to be earning more than teachers from other routes, except in their NQT year**




Note: Error bands represent 95 per cent confidence intervals. Estimates were not statistically significant where the bands cross the horizontal axis.

Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

In Section 4.3, we found that Teach First teachers tended to progress to higher leadership positions (particularly senior leadership) earlier in their career than similar teachers who trained through higher education routes. Accordingly, Teach First teachers tended to earn more than similar teachers who trained through higher education routes and this difference in salaries grew as a higher and higher proportion of Teach First teachers moved into senior leadership.

Teachers who trained through school- and employment-based routes were more likely than those who trained through higher education routes to move into higher leadership within the first seven years of their career. As we showed in Sections 4.2 and 4.3, the rate of progression into middle and senior leadership for teachers who trained through school- and employment-based routes began to increase by seven years after their NQT year, leading to a narrowing of the gap. Figure 12 shows that this effect is also reflected in the difference in salaries between these groups, which narrowed somewhat seven years after NQT year.

## 4.5 Differences in salary progression by training year, teacher and school characteristics

We also analysed whether differences in salary progression across routes were different over time, but the results were not statistically significantly different across training years.

In addition, as with our analysis of progression to middle and senior leadership, we analysed whether salary progression across routes differed between teacher and school characteristics (the same characteristics as outlined in Section 4.2.2. There were no statistically significant differences across school characteristics, but some significant differences across teacher characteristics, such as age and region.

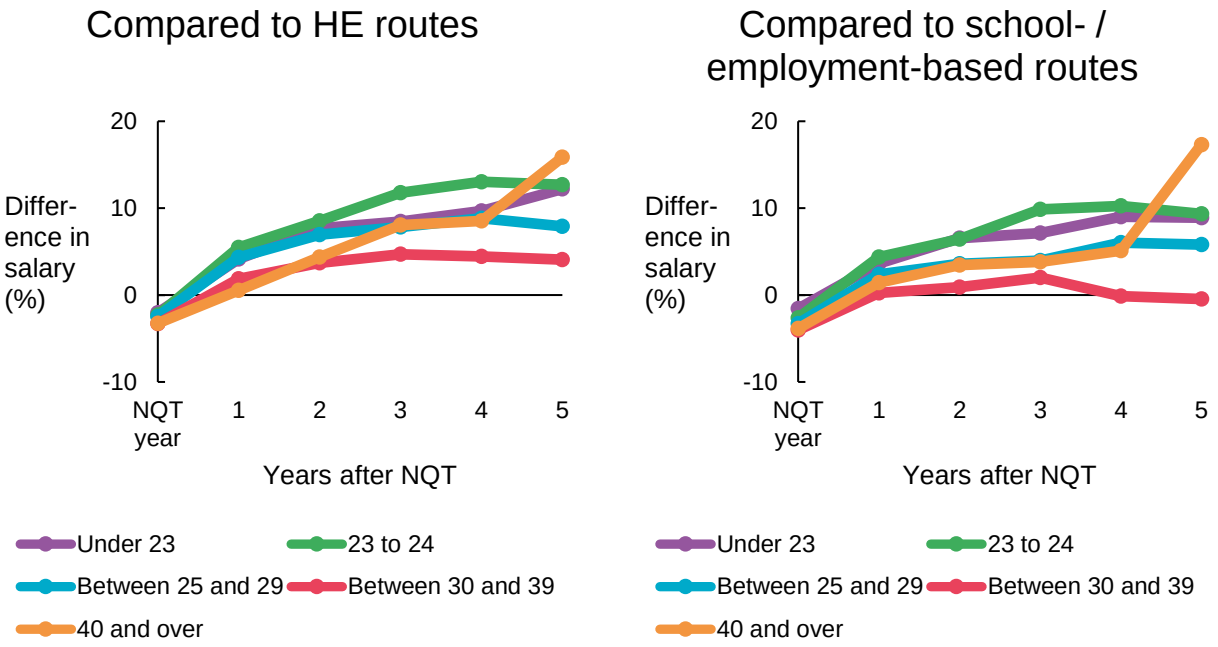
### 4.5.1 Differences by age

Teach First teachers tended to earn more than similar teachers who trained through other routes after their NQT year. Figure 13 shows, however, that the difference in salary is largest for those who were in the youngest age categories (under 23 and 23 to 24) when they began their training.[31] Teach First teachers who were under 23 or 23 to 24 when they began their training earned on average four and five per cent more one year after NQT year, respectively, rising to 12 and 13 per cent more five years after NQT year, than similar teachers of the same age who trained through higher education routes. Similarly, Teach First teachers in the under 23 and 23 to 24 age groups earned four per cent more than similar teachers in the same age groups who trained through school- and employment-based routes. This rose to nine per cent more five years after NQT year.

This earnings difference was statistically significantly lower than those in the under-23 age group for teachers who were 30 to 39 and 40 and over when they began their training. For Teach First teachers in these age groups, their earnings were two and one per cent higher than similar teachers in the same age groups who trained through higher education routes, one year after NQT year. This rose to four and 16 per cent higher, respectively, five years after NQT year.

[31] Earnings differences for those who were under 23, and 23 to 24 followed the same pattern and were not statistically significantly different from each other.

**Figure 13 Salary progression for Teach First teachers was statistically significantly higher for those who were younger when they began their training**




Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

Similarly, Teach First teachers in the 30 to 39 and 40 and over age groups earned 0.2 and 1 per cent more, respectively, one year after NQT year, than similar teachers in the same age group who trained through school- and employment-based routes. This difference did not change from one to five years after NQT year for teachers in the 30 to 39 age category, meaning that earnings for Teach First teachers in this age group were comparable to earnings for similar teachers in the same age group who trained through school- and employment-based routes.

### 4.5.2 Differences by region

Differences in salary progression were also statistically significantly different by region. Table 1 shows that, after accounting for London weightings (The Methodological appendix shows how this is done), the difference in earnings for Teach First teachers compared to similar teachers who trained through higher education and school- and employment-based routes tended to be statistically significantly larger in some regions outside of Inner London one year after NQT year.

**Table 1 The difference in earnings one year after NQT year for Teach First teachers compared to similar teachers who trained through other routes tended to be larger in the regions outside of Inner London**

| Region | Difference in earnings for Teach First teachers, compared to teachers trained through: | |
|---|---|---|
| | **Higher education routes (%)** | **School- and employment-based routes (%)** |
| **Inner London** | **3.3** | **1.2** |
| | | |
| East of England | 7.3 | 5.9 |
| East Midlands | 5.4 | 4.8 |
| West Midlands | 5.3 | 3.5 |
| Outer London | 4.2 | 1.9 |
| North East | 4.7 | 4.9 |
| North West | 3.3 | 2.5 |
| South East | 6.5 | 5.6 |
| South West | 8.8 | 8.6 |
| Yorkshire and the Humber | 4.3 | 3.3 |

Note: Cells highlighted in yellow are regions where the gap in salary progression one year after NQT year was statistically significantly larger than in Inner London.

Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

A similar picture emerged when comparing earnings for Teach First teachers to similar teachers who trained through school- and employment-based routes. Teach First teachers who were teaching in the South West one year after NQT year earned about nine per cent more on average than similar teachers who were teaching in the South West one year after NQT year who trained through school- and employment-based routes. This difference was six per cent in the South East and East of England, five per cent in the East Midlands and North East, and three per cent in the West Midlands and Yorkshire and the Humber. This was a statistically significantly larger difference than in Inner London, where Teach First teachers earned on average one per cent more than similar teachers in the same region who trained through school- and employment-based routes. These patterns persisted in the first five years after NQT year.

# 5 Teach First trainees' journey into the teaching profession

In Section 4, we showed that Teach First teachers who did not leave teaching were substantially more likely to progress into higher leadership roles than similar teachers who were teaching in similar schools but who trained through other routes. This has benefits for schools serving disadvantaged communities in that Teach First provides them with a supply of teachers who are able to have a positive whole-school impact by moving quickly into leadership positions.

However, there is a trade-off to Teach First providing schools serving disadvantaged communities with a leadership pipeline; Teach First teachers are also more likely to leave teaching than teachers who train through other routes (Allen *et al.*, 2016). We outlined in Section 1.3 that this may be partly because a portion of the graduates and career changers Teach First brings into teaching may not have otherwise entered the profession through another teacher training route. These recruits may be attracted by the prestige of the programme and some of them may start the programme with the intention of only remaining in the profession for a few years and progressing into other careers afterwards.

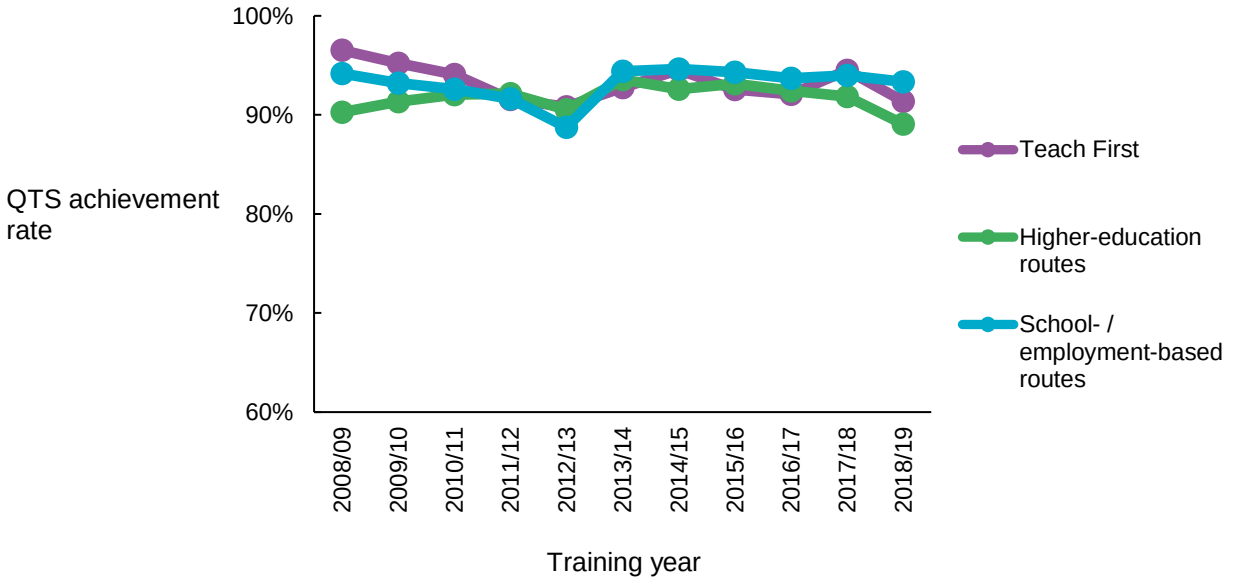
In this section we compare the proportion of Teach First teachers and teachers from other routes who completed their training between 2011/12 and 2017/18, entered and stayed in the teaching profession. We also analysed differences over time, highlighting in particular that the gap in retention rates for Teach First compared to similar teachers teaching in similar schools but who trained through other routes has significantly narrowed over time.

## 5.1 Qualification as teachers

The vast majority of trainees who entered an ITT programme since 2008/09 on any training route received their teaching qualification at the completion of their training. Figure 14 shows that there were few differences in QTS achievement rates across ITT training routes. Specifically, from 2008/09 to 2018/19, the proportion of trainees who achieved QTS has generally been above 90 per cent for all ITT routes and this has not substantially changed over time.[32]

[32] The exception is the 2012/13 training year, where QTS achievement rates dipped in line with the change in teacher training standards. See https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1040274/Teachers__Standards_Dec_2021.pdf

**Figure 14 QTS achievement rates were similar across cohorts between Teach First and other ITT routes**




Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

QTS achievement rates for Teach First trainees since 2013/14 have been very similar to QTS achievement rates for postgraduate trainees from other routes, although they were slightly higher between 2008/09 and 2010/11. Since the 2013/14 training year, QTS achievement rates for Teach First have tracked the same relatively flat pattern over time as for trainees on other routes.

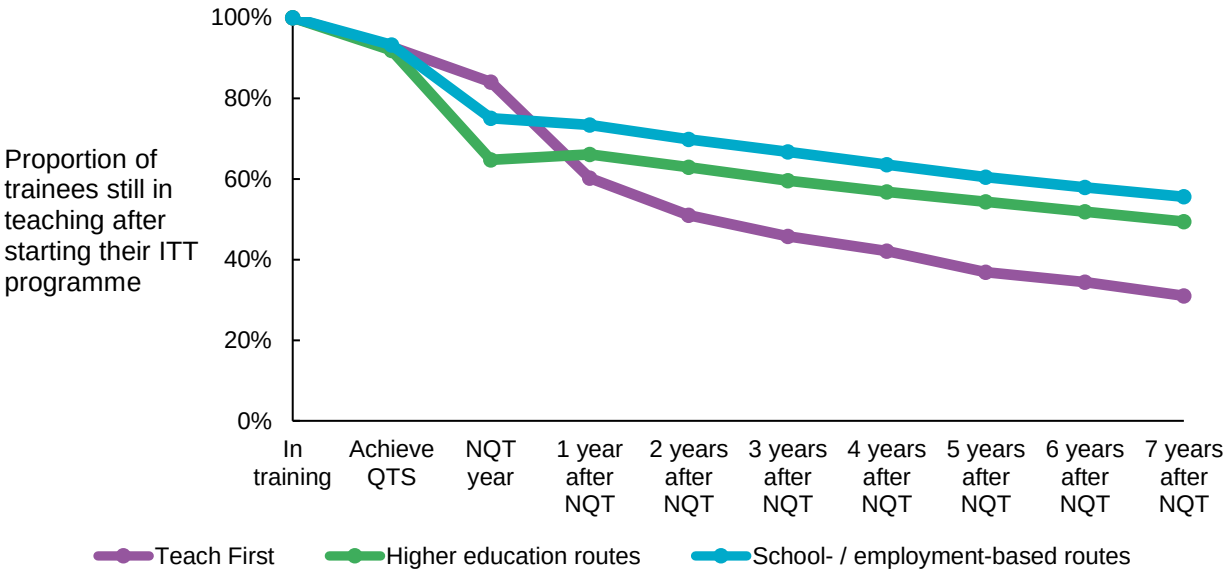
## 5.2 The proportion of teachers who were in teaching after qualifying

### 5.2.1 Overall differences between routes in the proportion of teachers in teaching after qualifying

While the proportion of trainees who achieved QTS is similar across routes, there were differences in the proportion of teachers who were in state-sector teaching after their qualification, particularly in the first two years after qualifying. Figure 15 shows the full career trajectory up to seven years after NQT year for all trainees who entered an ITT programme between 2011/12 and 2017/18. This includes the proportion of all trainees who achieved QTS, and then remained in teaching during, and up to seven years after, their NQT year.

The proportion of Teach First trainees who were teaching in a state-sector school in their NQT year (one year after QTS) was higher than for other routes, at 84 per cent, compared to 65 and 75 per cent of teachers who trained through higher education and school- and employment-based routes respectively. For each year after their NQT year, however, the proportion of Teach First teachers who remained in teaching was lower than for teachers who trained through other routes.

**Figure 15 Of all trainees who began their training programme, a lower proportion of teachers who trained through Teach First were still in teaching after qualification than teachers who trained through other routes**




Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

The very different trajectories taken by Teach First teachers compared to teachers on different routes between achieving QTS and one year after their NQT year highlights a key challenge in comparing retention rates between routes. Specifically, the difference in retention rates between a teacher's NQT year and the year following their NQT year stems from the difference in the duration of the Teach First training programme, compared to other postgraduate ITT training programmes. Teachers who train through higher education and school- and employment-based routes achieve QTS at the end of their one-year training programme and subsequently enter state-sector teaching in the following year. The end of a training programme is a natural break point where a portion of trainees decide not to work in teaching and move out of the profession, or move into teaching in independent schools or outside of England.

Achieving QTS is not, however, the same natural break point for Teach First teachers as it is for teachers who train through other routes because they are midway through the two-year Teach First Training Programme. The proportion of Teach First trainees who are teaching in a school one year after gaining QTS, therefore, reflects the proportion who progress from the first to the second year of the Teach First Training Programme.

Nonetheless, Figure 15 shows that after their NQT year, Teach First teachers were less likely than teachers who trained through other routes to still be in state-sector teaching. Specifically, one year after their NQT year, 60 per cent of Teach First teachers were still in teaching. This was six and 13 percentage points lower than for teachers who trained through higher education and school- and employment-based routes.

This gap in retention rates grew over time, such that, seven years after NQT year,[33] 31 per cent of Teach First teachers were still in teaching. This compared to 49 per cent for teachers who trained through higher education routes and 56 per cent for those who trained through school- and employment-based routes. Retention rates were therefore 18 and 25 percentage points lower for Teach First teachers than for those who trained through higher education and school- and employment-based routes respectively.

Part of the difference in post-NQT year retention rates is likely to be driven by differences in the characteristics of Teach First teachers and the schools in which they were placed. As we outlined in Section 3, Teach First teachers differed in key characteristics (e.g. age, degree qualification, region and subject) from teachers who trained through other routes. Younger teachers are more likely to leave teaching than older teachers, regardless of training route. Similarly, those qualified in science subjects and mathematics are more likely to leave teaching than their counterparts qualified in humanities (Worth *et al.*, 2018).

Additionally, Teach First teachers, unlike those who train through other routes, are placed in schools serving the most disadvantaged communities. This is also likely to have implications for retention rates as teachers in the most disadvantaged schools tend to be more likely than teachers in more affluent schools to leave state-sector teaching (Allen *et al*, 2016).

In Section 5.3, we explore the extent to which differences in teacher and school characteristics help to explain differences in retention rates, and we find that differences in these characteristics do explain a small part of this gap. However, a significant retention rate gap remains even after accounting for differences in characteristics, which is likely driven by differences in other unobserved characteristics between Teach First teachers and teachers who trained through other routes.

### 5.2.2 Differences in the proportion of teachers in teaching after qualifying between training year cohorts

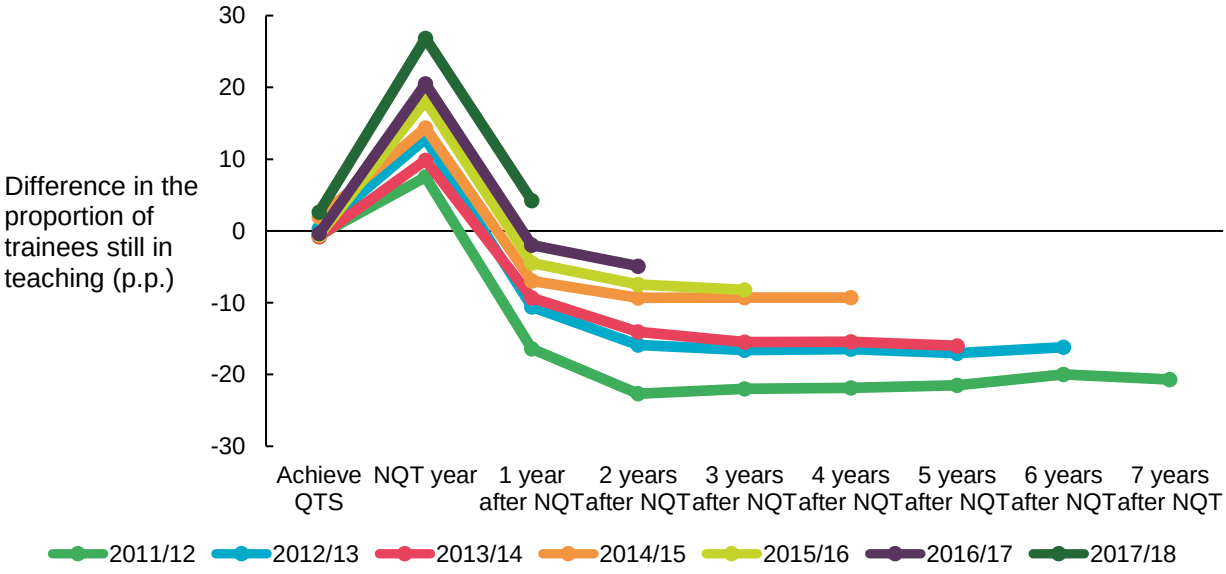
The overall average retention rate for Teach First teachers across multiple cohorts also masked improvements in retention rates over time. We illustrate in Figures 16 and 17 the differences in retention rate gaps over time by showing the difference in QTS achievement rates and the proportion of teachers in teaching - in percentage point terms - between Teach First and teachers who trained through other routes.

QTS achievement rates were not substantially different between Teach First and teachers who trained through other routes for all cohorts and so all these gaps were close to zero. The proportion of Teach First teachers in teaching in their NQT year was larger than for teachers trained through other routes for all cohorts. This is because their NQT year reflected the year in which Teach First teachers moved from the first to the second year of their training programme, while for teachers trained through other routes it was the end of their training programme. However, this gap has grown substantially over time. The proportion of Teach First teachers who began their training in

[33] We considered anyone who trained between 2011/12 and 2017/18 and who was teaching in a school to be 'in teaching.' This included those who may have left teaching but returned in a later year.

2011/12 and were still in teaching during their NQT year was eight percentage points higher than for teachers who began their training on a higher education route in the same year, and was similar to teachers who began their training on a school- and employment-based route in the same year. The proportion of Teach First teachers who began training as part of the 2017/18 cohort and remained in teaching during their NQT year had grown to be 27 and 13 percentage points higher than for teachers who began their training in the same year on higher education and school- and employment-based routes respectively.

**Figure 16 The proportion of Teach First teachers in teaching after qualifying has increased in more recent cohorts, compared to teachers who trained through higher education routes**



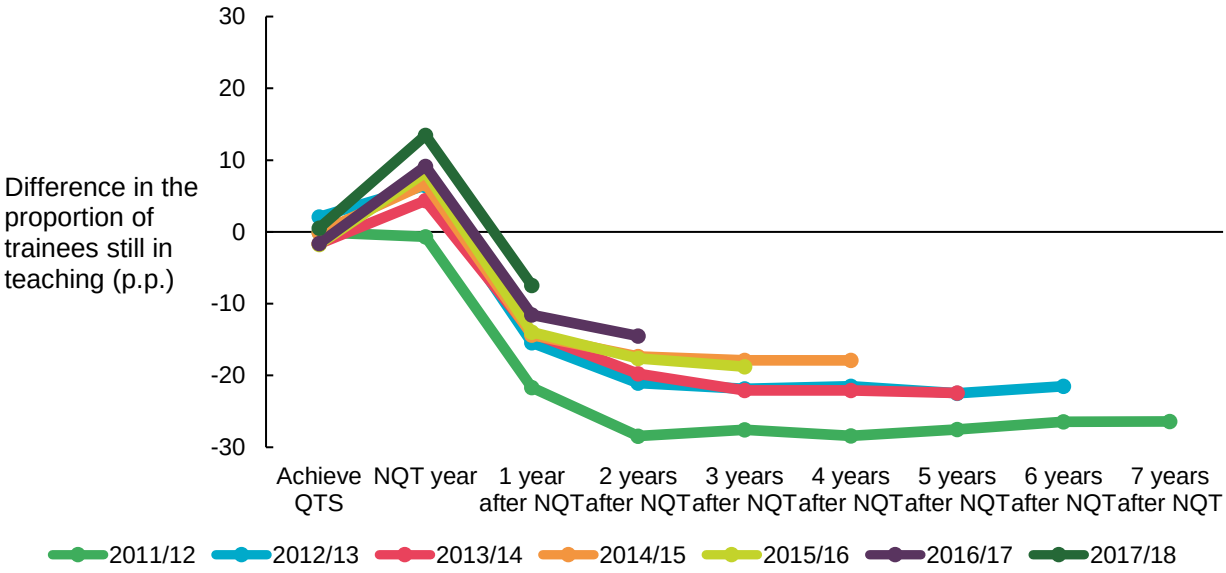

Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

The gap in the proportion of Teach First teachers in teaching in the years after NQT year has also narrowed over time and become positive (compared to teachers trained through higher education routes) for the most recent cohort in our analysis. For Teach First teachers who began their training in 2011/12, the proportion in teaching in the year after their NQT year was 16 and 22 percentage points lower than for teachers who began their training in the same year on higher education and school- and employment-based routes, respectively. However, the proportion of Teach First teachers who began their training in 2017/18 and were in teaching one year after their NQT year was four percentage points *higher* than for teachers who began their training in the same year on a higher education route.

Similarly, the proportion of Teach First teachers who began their training in 2017/18 and were in teaching one year after NQT was eight percentage points lower than for teachers who trained in the same year on a school- and employment-based route. The retention rate in the most recent

Teach First cohort was therefore still lower than for teachers trained through school- and employment-based routes, but this gap was considerably smaller than for earlier cohorts.

**Figure 17 The proportion of Teach First teachers in teaching after qualifying has increased in more recent cohorts, compared to teachers trained through school- and employment-based routes**




Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

The gap in retention rates from two to seven years after teachers' NQT year has similarly narrowed for more recent cohorts. From five to seven years after their NQT year, we only observed retention rate gaps for those who began their training between 2011/12 and 2013/14. However, the retention rate gaps for these cohorts were the largest of all Teach First cohorts. This is important context for helping to interpret the overall gap in retention rates. From five to seven years after their NQT year, the gap in retention rates reflected the retention rates for the earliest Teach First cohorts in the analysis and not the substantially higher retention rates characteristic of more recent cohorts.

## 5.3 Comparing the proportion of Teach First teachers who stayed in teaching with matched teachers who trained on other routes

Section 5.2 showed that a smaller proportion of Teach First teachers were retained in teaching after their NQT year than teachers who trained through other routes, though this gap has narrowed considerably in more recent cohorts. This section explores the extent to which the gap in retention rates was due to differences between routes in the characteristics of teachers and the schools in which they were teaching. We did this by using the matched samples to compare Teach First teachers to similar teachers who trained through other routes but who were teaching in similar schools in their NQT year.

We report differences in retention rates one to seven years after NQT year across training routes, first for the full combined sample of all cohorts in Section 5.3.2 and then between different training year cohorts in Section 5.3.3 where there were statistically significant differences. We also analysed whether there were statistically significant differences in the gap in retention rates between routes for different teacher or school characteristics. Statistically significant findings are reported in Section 5.4.

### 5.3.1 Retention rates for NQTs

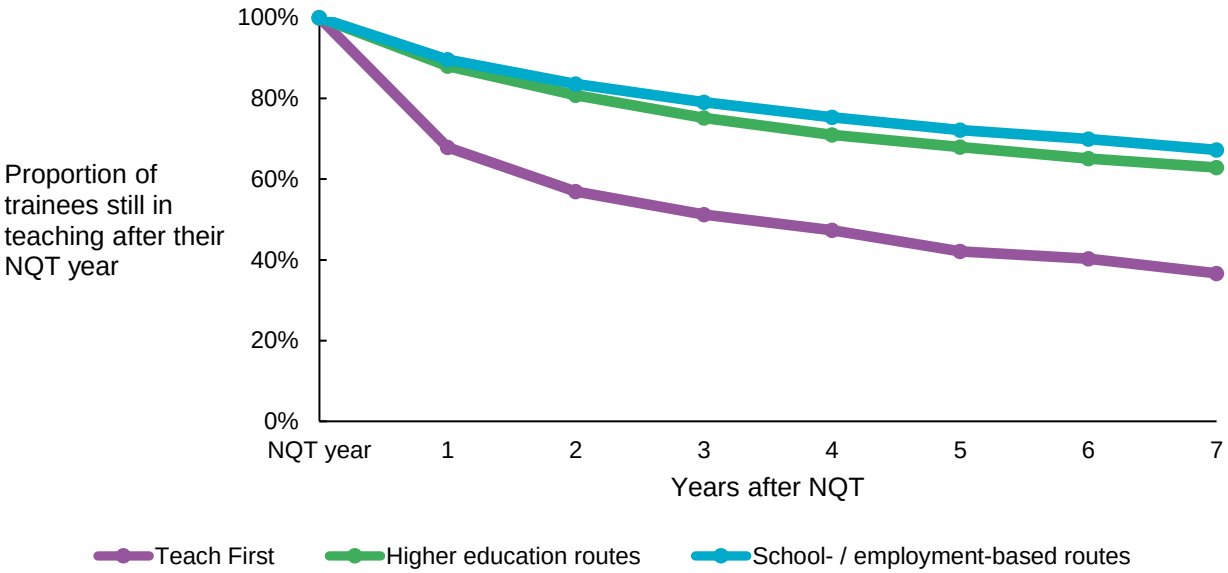
To compare teachers working in similar schools requires data on the characteristics of the schools that teachers work in. Unlike for Teach First teachers, however, we were not able to observe in the ITT-PP data the characteristics of the schools teachers were placed in during their training when they trained through higher education and school- and employment-based routes. Therefore, to compare on a like-for-like basis, we could only compare retention rates across routes from NQT year onwards because that is the first year we could observe school characteristics for all trainees.

However, Figure 18 shows that the gap in retention rates across routes from their NQT year was larger than the gap in retention rates from entry onto their training course. Specifically, of all Teach First NQTs in our sample, 68 per cent were still teaching one year after NQT year. Of NQTs who trained through higher education and school- and employment-based routes, 88 and 90 per cent were still in state-sector teaching one year after NQT.

Retention rates for Teach First teachers were therefore 20 and 22 percentage points lower than their counterparts who trained through higher education and school- and employment-based routes, respectively. This gap was considerably larger than the difference across routes in the proportion of all teachers who were still in state-sector teaching one year after NQT year. We showed in Section 5.2.1 that the proportion of all teachers still in teaching one year after NQT year was six and 13 percentage points lower than for teachers who trained through higher education and school- and employment-based routes, respectively.

To reiterate what we noted in Section 5.2.1, the larger gap in retention rates for NQTs than for all those who started a training programme was due to the longer duration of the Teach First Training Programme compared to other training programmes. Teachers who trained through higher education and school- and employment-based routes completed their programme one year before Teach First trainees and so were less likely to enter teaching in a state-sector school in their NQT year altogether. However, a larger proportion of Teach First teachers than teachers who trained through other routes left teaching after their NQT year as this was when their programme ended, which led to a considerable widening of the gap in retention rates one year after NQT year.

**Figure 18 A lower proportion of NQTs who trained through Teach First were still in teaching after their NQT year than NQTs who trained through other routes**




Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

In addition to the overall differences, there were also some differences by phase in the proportion of Teach First teachers still in teaching after their NQT year, with the proportion of Teach First teachers who specialised in early years education still in teaching four years after NQT year (43 per cent) being lower than Teach First primary teachers (54 per cent). This was also lower than the proportion of teachers still in teaching one year after NQT who trained in primary through other training routes (74 per cent).

### 5.3.2 Retention rates for Teach First teachers compared to similar teachers teaching in similar schools

Figure 19 shows the difference in the proportion of Teach First NQTs who were teaching in a state-sector school in England, compared to similar teachers who were teaching in similar schools in their NQT year but who trained through other routes. Rather than reporting retention rates separately for teachers who trained through Teach First and other routes, we report the gap in retention rates[34] between Teach First and other routes. If the retention rate for teachers who trained through Teach First was lower than for similar teachers who trained through other routes (i.e. if Teach First teachers were less likely to stay in teaching than similar teachers who trained through other routes), then this difference was negative, and vice versa.

[34] The difference in retention rates between Teach First teachers and other routes included a 'regression adjustment' in order to account for any imbalance in teacher and school characteristics that remained after the matching. See Section 2.2.4 for further details on how we specified and estimated the models.

The left panel shows the results compared to those who trained through higher education routes, and the right panel shows the results compared to those who trained through school- and employment-based routes. The difference in retention rates in percentage points (p.p.) is on the vertical axis.

This part of the analysis included teachers in all training year cohorts from 2011/12 to 2017/18. The estimate of differences in retention rates one year after NQT year is based on this full sample of all training year cohorts, while the estimate of retention rates seven years after NQT year is based only on teachers who were in the 2011/12 training year cohort (which we showed in Section 5.2.2 had the largest retention rate gaps of all cohorts in our analysis). These results should therefore be interpreted as representing the 'average' difference in retention rates between Teach First and other training routes between 2011/12 and 2017/18.

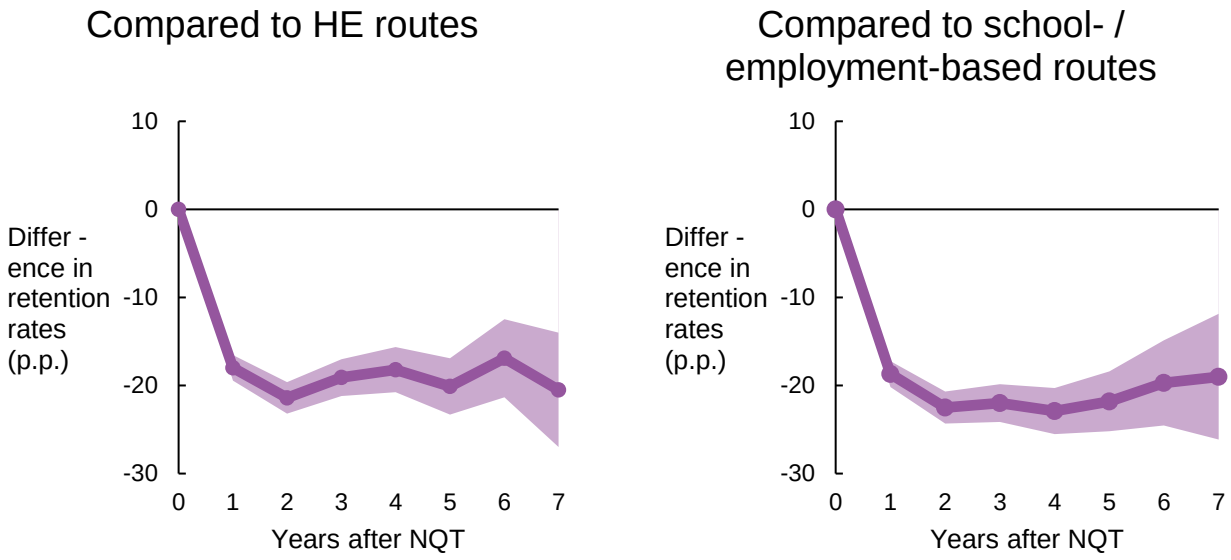
Only teachers who received QTS and started teaching in a state-sector school in England in the year following QTS are included in this part of the analysis. The retention rate in our matched sample between the year in which a teacher gained QTS and their NQT year is therefore 100 per cent, by definition, for all routes. This is reflected by a retention rate gap of zero in their NQT year.

As we noted in Section 5.2.1, the substantial widening of the gap in retention rates one year after NQT was partly due to Teach First teachers completing the training programme in their NQT year, whereas those who trained through other routes completed their programme the previous year. However, notwithstanding the challenge in comparing retention rates for programmes which ended at different times, our results mirror Section 5.2 by showing that Teach First NQTs were less likely to stay in teaching than similar NQTs teaching in similar schools but who trained through other routes.

The retention rate for Teach First teachers one year after NQT year was 69 per cent, while it was 87 per cent and 88 per cent for teachers trained through higher education and school- and employment-based routes, respectively. Retention rates were therefore 18 and 19 percentage points lower for Teach First teachers than those who trained through higher education and school- and employment-based routes, respectively.

From one to seven years after their NQT year, retention rates for Teach First teachers were about 20 percentage points lower than for similar teachers teaching in similar schools but trained through higher education and school- and employment-based routes. In the years after NQT year therefore, retention rates for Teach First teachers were still lower than retention rates for other routes, but the gap did not substantially change over time as retention rates for teachers who trained through all routes tracked a similar pattern. A significant part of the difference in retention rates in the seven years after NQT year was therefore driven by the difference in programme duration, as the gap did not substantially change over time.

**Figure 19 The difference in retention rates between Teach First and comparison teachers emerged after NQT year, at least in part reflecting differences in programme duration. From one and seven years after NQT year, the gap did not substantially change, as retention rates for teachers trained through all routes followed similar patterns**




Note: Error bands represent 95 per cent confidence intervals. Estimates were not statistically significant where the bands cross the horizontal axis.

Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

In addition to these overall differences, for Teach First teachers who specialised in early years education, the gap in retention rates was larger than for similar primary teachers who trained through other routes. The retention rate for Teach First early years teachers four years after NQT year was 40 per cent, while it was 70 per cent both for similar primary teachers in similar schools who trained through higher education and school- and employment-based routes. This gap in retention rates (30 percentage points) was similar in both the unmatched and the matched samples.

### 5.3.3 The effect of differences in teacher and school characteristics on retention rate gaps

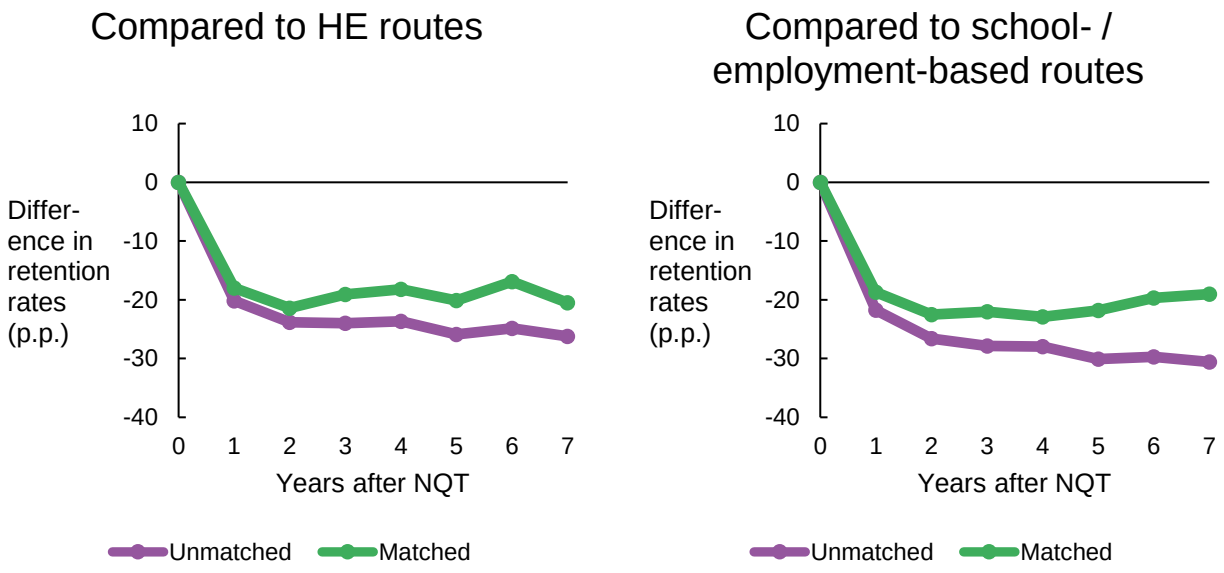
Our analysis of retention rate gaps in the matched samples showed that the gaps were slightly narrower than in the full, unmatched sample. This suggests that gaps in retention rates between Teach First teachers and teachers who trained through other routes were explained at least in part by differences in the characteristics of teachers and the schools in which they taught across training routes.

This is because all teachers teaching in similar schools to those of Teach First teachers in their NQT year tended to have lower retention rates, regardless of their training route. For example, of all NQTs who trained through higher education and school- and employment-based routes, 88 and 90 per cent, respectively were still in teaching one year after NQT year. The same proportions in the matched sample were 87 and 88 per cent.

Figure 20 shows the gap in retention rates after NQT year for the matched sample overlaid on retention rates after NQT year for the unmatched sample. Both consistently reflect the substantial widening in the retention rate gap in the year after NQT year which was in part due to Teach First teachers completing their programme in their NQT year, as we noted in Section 5.2.1.

One year after NQT year, the gap in retention rates for Teach First teachers compared to similar teachers in similar schools but who trained through higher education routes was 18 percentage points in the matched sample and 20 percentage points in the unmatched sample. Similarly, the gap compared to school- and employment-based routes one year after NQT was 19 percentage points in the matched sample and 22 percentage points in the unmatched sample. Differences in school characteristics therefore accounted for two and three percentage points of the gap in retention rates one year after NQT year between Teach First teachers and teachers who trained through higher education and school- and employment-based routes, respectively.

**Figure 20 The gap in retention rates between Teach First and other routes was narrower when compared to similar teachers in similar schools than when compared to all teachers who trained through other routes**




Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

School and teacher characteristics accounted for a larger part of the retention rate gap over time, particularly for teachers who trained through school- and employment-based routes. Seven years after NQT year, the gap in retention rates for Teach First teachers compared to teachers who

trained through higher education routes was 21 percentage points in the matched sample and 26 percentage points in the unmatched sample. Compared to school- and employment-based routes seven years after NQT year, the gap in the matched sample was 19 and 31 percentage points in the unmatched sample. Therefore, school and teacher characteristics accounted for five and 12 percentage points of the gap in retention rates seven years after NQT.

This shows that differences in teacher and school characteristics between routes explained part of the gap in retention rates, which was a small part immediately after NQT year but grew somewhat over time. Nonetheless, a substantial and statistically significant gap in retention rates remained from one to seven years after NQT year, which was not explained by differences in teacher and school characteristics. This remaining gap reflected partly the persistent difference from the initial end of the two-year training programme. However, it likely also reflected further differences between routes in other unobserved teacher and school characteristics, such as a teacher's commitment to remaining in teaching over the long-term, or the existence of school support networks.

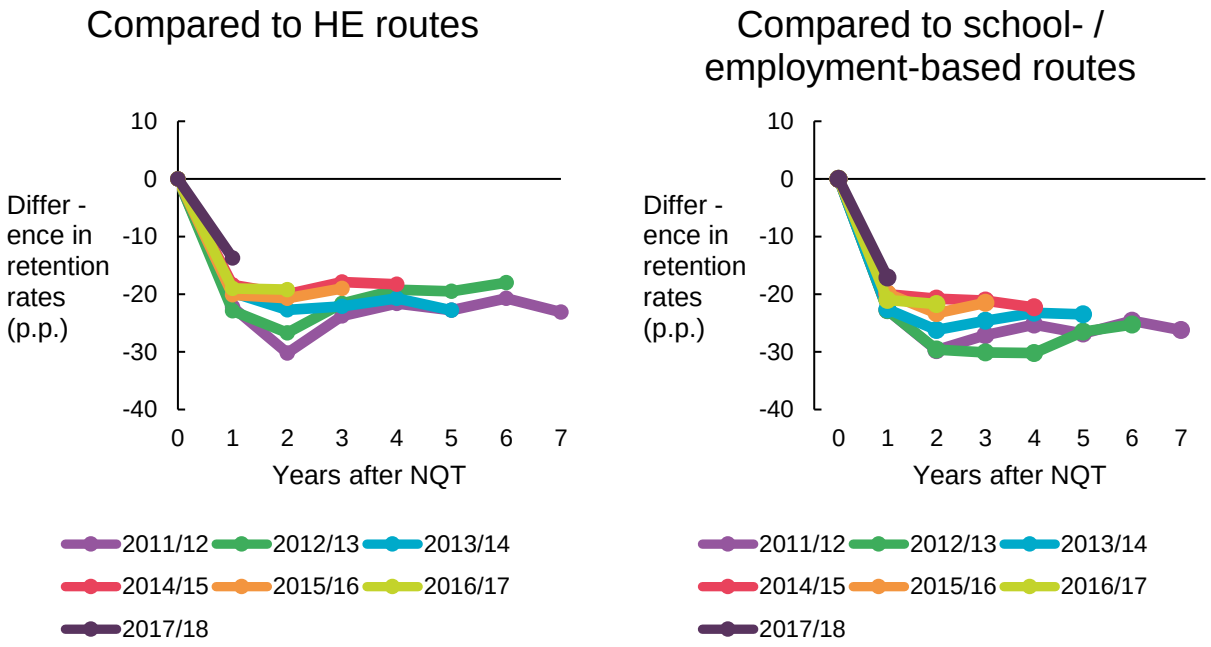
### 5.3.4 Differences in the retention rate gap by training year cohort

We also analysed the gap in retention rates between Teach First teachers and teachers who trained through other routes over different training year cohorts to show how it may have changed over time. Similarly to Section 5.2.2, we found that gaps in retention rates were smaller in more recent training year cohorts compared to 2011/12, the earliest cohort in our analysis, and this was particularly so for the 2017/18 cohort, the last cohort in our analysis.

As in the previous sections, we compared retention rates for Teach First NQTs compared to NQTs who trained through other routes in order to account for differences in school characteristics in NQT year. As we noted in Section 5.2.1, this leads to a significant widening of the retention rate gap one year after NQT year which was due to Teach First trainees completing their programme in their NQT year, while those on other routes completed their programme in the previous year.

The narrowing of the retention rate gap was most apparent two years after NQT year, where retention rates for Teach First teachers who trained in the 2011/12 training year were 30 percentage points lower than similar teachers who trained in the same year through different routes. For the 2016/17 training year, retention rates for Teach First teachers were 19 and 22 percentage points lower than similar teachers who trained through higher education and school- and employment-based routes, respectively, which was statistically significantly smaller than in 2011/12. The narrowing of the gap was therefore driven by both a slight fall in the retention rates of teachers who trained through higher education routes and an increase in the retention rates of Teach First teachers.

**Figure 21 The retention rate gaps for Teach First teachers were smaller in more recent training year cohorts than in the earliest training year cohort**




Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

The difference in retention rates has also narrowed one year after their NQT year, particularly for the 2017/18 cohort, compared to the 2011/12 cohort (which was the only difference which was statistically significant). Retention rates for Teach First teachers in the 2017/18 cohort were 14 and 17 percentage points lower than teachers who trained in higher education and school- and employment-based routes, respectively, compared to about 20 percentage points in previous cohorts, and this difference was statistically significant. This is also driven both by a fall in the retention rates of teachers who trained through higher education and school- and employment-based routes, and an increase in the retention rates for Teach First teachers. A similar narrowing of the retention rate gap was apparent from three to six years after NQT year, though none of the differences were statistically significant.

Overall, the data suggests that the retention rates of teachers who trained through Teach First were becoming more similar to teachers who trained through other routes (particularly for teachers who trained in the 2017/18 cohort). However, overall retention rates for Teach First teachers were lower than for similar teachers who trained through other routes. This was most evident in the year after NQT year, but, as we noted in Section 5.2.1, this also reflects when trainees completed their training and was not the same natural break point for teachers who trained through other routes.

## 5.4 Differences in the retention rate gap by other teacher and school characteristics

We also examined whether the difference in retention rates for Teach First teachers compared to other routes differed across teacher and school characteristics. This is to explore whether particular teachers who were teaching in particular schools were more or less likely to stay in teaching after participating in the Teach First programme, compared to counterparts who trained through other routes.

The teacher characteristics we analysed were: age, undergraduate degree class, whether the teacher moved school in the first two years of their career, ethnicity and subject. The school characteristics we analysed were: deprivation (as measured by the proportion of pupils eligible for free school meals), Ofsted rating, region, whether there was a network of Teach First teachers at the school and the number of Teach First programmes the school had previously participated in.

There were no statistically significant differences in retention rates across any of the school characteristics, including the number of Teach First teachers teaching at the school or the number of programmes previously engaged with. This suggests that the difference in retention rates between Teach First and other routes was similar across schools that have different Ofsted ratings, different levels of deprivation and schools that do and do not have an existing Teach First network.

There were, however, some statistically significant differences across teacher characteristics. The data shows that retention rate gaps for Teach First teachers compared to other routes differed significantly by the age and ethnicity of the trainee, and the subject in which they qualified. These comparisons were made between Teach First teachers compared to similar teachers in similar schools but who trained through other routes and were of either the same age, ethnicity or who qualified in the same subject. For example, we compared Teach First teachers who were under 23 when they began their training to similar comparison teachers who were also under 23 when they began training. These results are shown in Sections 5.4.1 – 5.4.3.

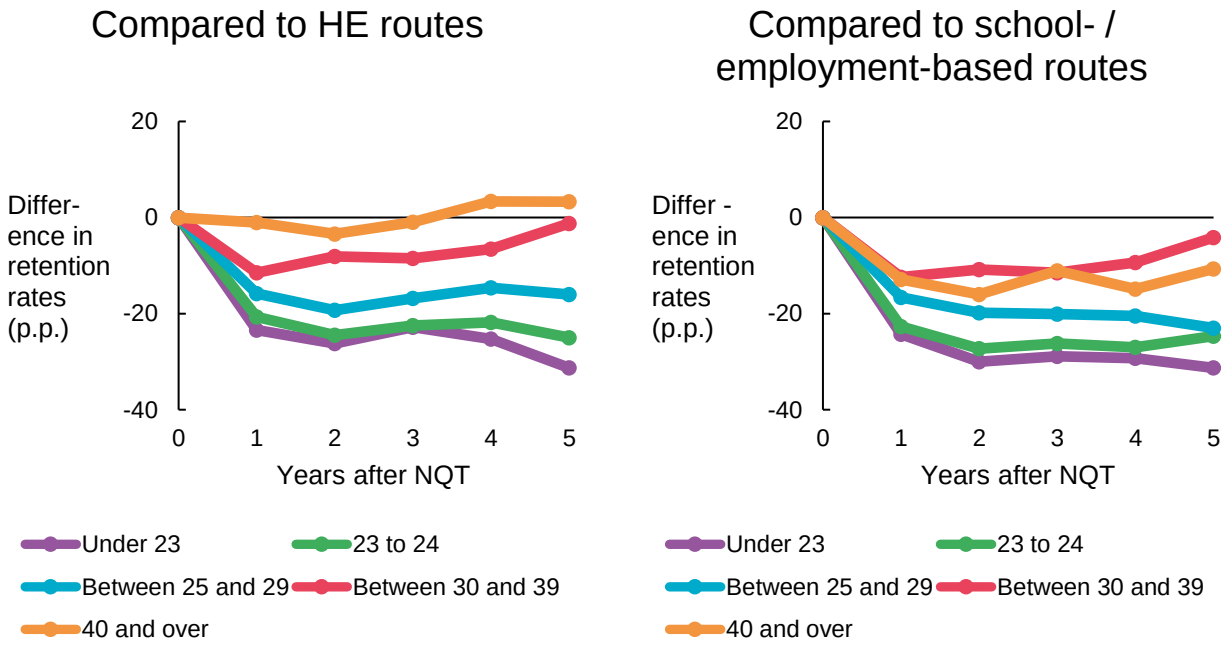
We only show differences in retention rates up to five years after NQT year as the sample size of teachers who were in each of the age, ethnicity and subject categories from six to seven years after NQT year was too small to report. All of the retention rate gaps we included in this section showed a substantial increase in the retention rate gap one year after NQT year. As we noted in Section 5.2.1, this was due to the end of the Teach First programme in a teacher's NQT year, while teachers who trained through other routes completed their programme in the previous year.

### 5.4.1 Differences by age

Figure 22 shows that the difference in retention rates compared to similar teachers who trained through other routes tended to be larger for teachers who were younger when they began their training. Specifically, retention rates one year after NQT year for Teach First teachers who were under 23, or 23 to 24 when they began their training were, respectively, 24 and 23 percentage points lower than similar teachers of the same age who trained through higher education routes. The gap in retention rates was statistically significantly smaller for teachers in older age categories (retention rates one year after NQT year for those age 40 and over when they began their training

were 13 percentage points lower than teachers who trained through higher education routes) than in the youngest age categories.

**Figure 22 The difference in retention rates for Teach First teachers compared to similar teachers who trained through higher education routes was largest for younger teachers**




Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

The gap in retention rates was largest for teachers who were in the youngest age categories when they began their training (retention rates were, respectively, 23 and 21 percentage points lower one year after NQT year for teachers aged under 23, or 23 to 24 when they began their training). Gaps in retention rates were also statistically significantly narrower for those in older age categories. However, retention rates for Teach First teachers who were 40 or over when they began their training were not statistically significantly different from those of similar teachers in the same age category who trained through school- and employment-based routes.[35]

We observed this pattern of smaller retention rate gaps for older teachers because the relationship between age and retention is different for Teach First teachers compared to teachers trained through other routes. Teach First teachers in the youngest age categories were less likely to remain in teaching than for older age categories. Conversely, however, teachers trained through other routes who were in the youngest age categories were more likely than older teachers to stay in teaching. This means that the gap in retention rates was largest for Teach First teachers in the

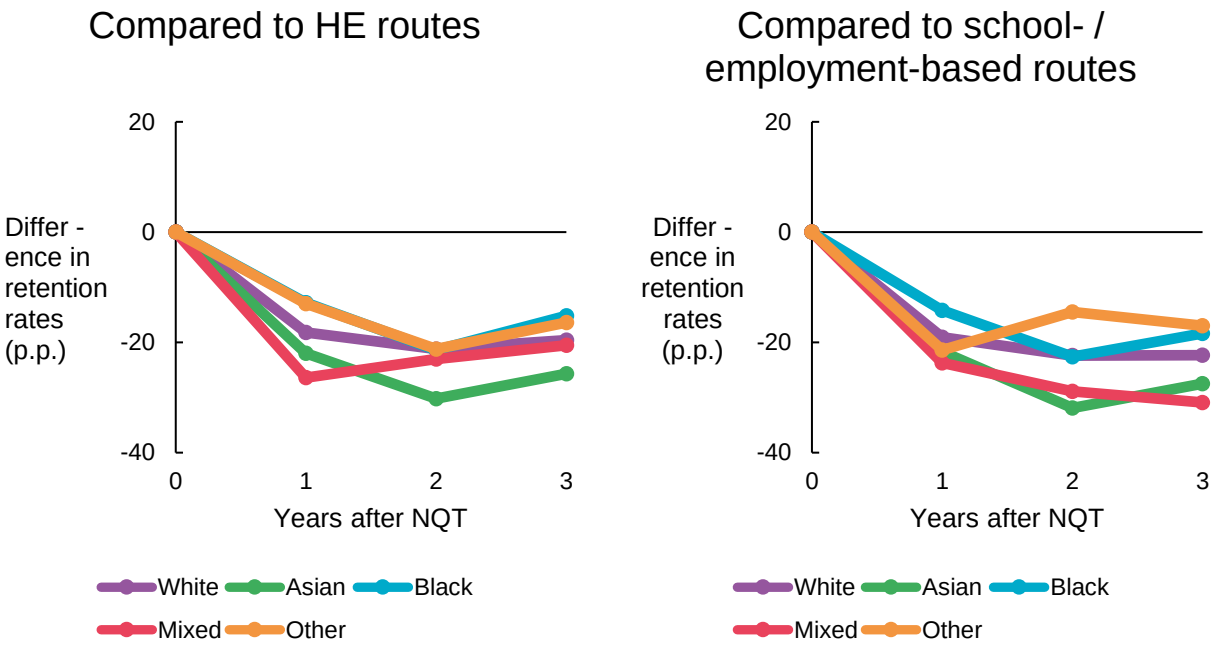
[35] The proportion of trainees who were 40 and over when they began their training is the smallest of all the age groups, which could mean that the lack of significance was due to small sample sizes.

youngest age categories, because younger teachers may have used their training and teaching experience accrued through Teach First to transition out of teaching into other occupations at an early stage in their careers

### 5.4.2 Differences by ethnicity

We also found differences in the gap in retention rates between Teach First teachers and other routes across teachers from different ethnic backgrounds. We focussed on analysing differences in retention rates within the first three years after NQT year as sample sizes of teachers from each ethnic background were too small to report from four to seven years after NQT.

**Figure 23 The gap in retention rates for Teach First teachers compared to teachers who trained through higher education routes was larger for teachers from Asian backgrounds than for teachers from white backgrounds**




Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

Figure 23 shows that the gap in retention rates for Teach First teachers from Asian backgrounds compared to similar teachers from Asian backgrounds who trained through other routes was larger than the same gap for teachers from white and black ethnic backgrounds. Specifically, the retention rate two years after NQT year for teachers from Asian backgrounds was 32 percentage points lower than similar teachers from Asian backgrounds who trained through higher education routes. This was statistically significantly larger than the gap of 22 and 23 percentage points for teachers from white and black ethnic backgrounds.

Similarly, the retention rate two years after NQT year for teachers from Asian backgrounds was 30 percentage points lower than similar teachers from Asian backgrounds who trained through school-

and employment-based routes. This was statistically significantly larger than the 21-percentage point difference for teachers from white and black ethnic backgrounds.

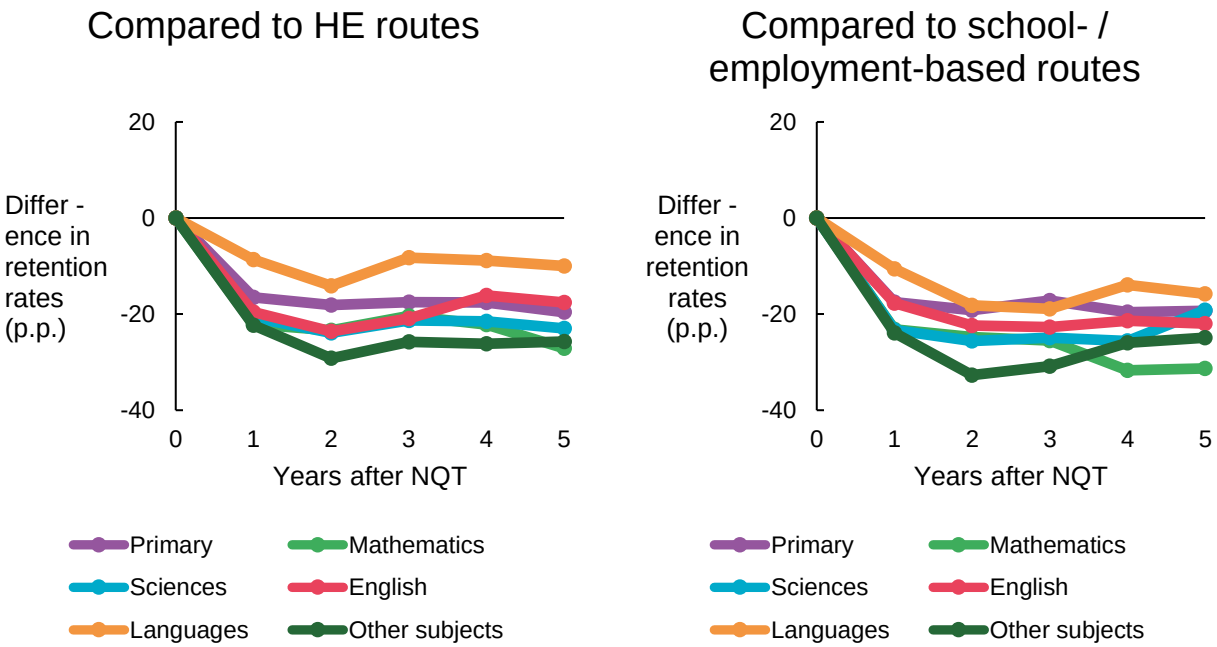
### 5.4.3 Differences by phase and subject

We also observed statistically significant differences in the retention rate gap between Teach First teachers and similar teachers across the phase and subject they trained in. The gap in the retention rate for primary Teach First teachers (the largest group) was relatively small (17 and 18 percentage points lower than similar primary teachers who trained through higher education and school- and employment-based routes, respectively). This gap was not statistically significantly different from the gap for secondary teachers who trained in English, history, art & design, music or drama (not shown in Figure 24 as the gaps were not statistically significantly different from primary teachers).

The retention rate one year after NQT year for secondary Teach First teachers qualified in languages was 11 and 9 percentage points lower than similar teachers who trained through higher education and school- and employment-based routes, respectively. This was statistically significantly smaller than for primary teachers.

Conversely, the gap for secondary Teach First teachers who qualified in mathematics and sciences was larger than for primary teachers and secondary teachers in other subjects. Specifically, the retention rate one year after their NQT year for Teach First teachers who qualified in mathematics or sciences was 23 percentage points lower than similar teachers qualified in the same subject but who trained through higher education routes. Compared to similar teachers who trained through school- and employment-based routes, the same gap was 22 and 21 percentage points for mathematics and science teachers, respectively.

**Figure 24 The gap in retention rates compared to teachers who trained through other routes was larger for Teach First teachers qualified in mathematics and sciences, and smaller for those qualified in art & design, music and drama and languages**




Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

# 6 Mobility of Teach First teachers

We have shown in the previous sections how teachers who trained through Teach First between 2011/12 and 2017/18 and stayed in teaching were substantially more likely than similar teachers who trained through other routes to progress into higher leadership positions. As a result, Teach First teachers tended to earn more within the first seven years of their careers.

This section provides additional findings on the proportion of Teach First teachers who remained in disadvantaged schools, moved school and region and moved to schools with different Ofsted ratings after their NQT year, compared to teachers who trained through other routes. This is intended to assess the extent to which Teach First teachers remained teaching (and therefore progressed) within disadvantaged schools.

We used the same matched sample for this section as in the previous sections in order to compare Teach First teachers who trained between 2011/12 and 2017/18 to teachers with similar characteristics and teaching in similar schools but who trained through other routes in the same years. The analysis is also based on the sample of teachers who did not leave teaching.

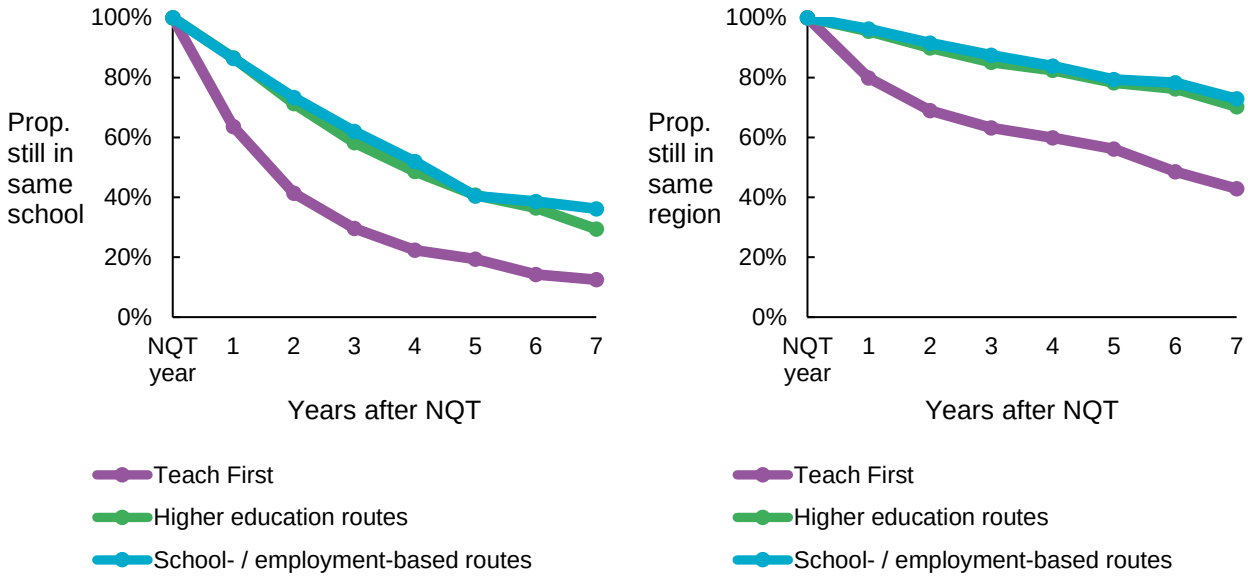
## 6.1 The proportion of teachers who remained in the same school and region after NQT year

The Teach First Training Programme is designed such that trainees are placed in the same school for the duration of their two-year training programme. Accordingly, we found that virtually all (96 per cent)[36] of Teach First teachers who trained between 2011/12 and 2017/18 stay in the same school between the first and second years of their placement. This may not necessarily be the case for teachers who trained through other routes. However, as placement schools were not recorded in the ITT-PP data, we could not compare the proportion of teachers who stayed in the same school between their qualification year and NQT year across all training routes.

From NQT year onwards, however, we were able to compare the proportion of teachers who stayed in the same school and region across training routes. Figure 25 shows that, after their NQT year, a smaller proportion of Teach First teachers stayed in the same school and region they were in during their NQT year, when compared to similar teachers who trained through either higher education or school- and employment-based routes.

[36] This figure was based on Teach First teachers who did not withdraw from the programme and whose Teach First placement and NQT year school were recorded in the Teach First and SWC databases.

**Figure 25 Nearly all Teach First teachers remained in the same school during their two-year placement, but a smaller proportion stayed in the same school and region after their NQT year compared to teachers who trained through other routes. This is likely partly due to Teach First placing trainees in schools across the country and differences in programme duration**




Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

Specifically, 64 per cent of Teach First teachers were still in the same school one year after their NQT year. This fell over time as teachers moved school such that, seven years after NQT year, 13 per cent of Teach First teachers were still in the same school they were in during their NQT year. For similar teachers who trained through higher education and school- and employment-based routes, 87 and 86 per cent of teachers were still in the same school one year after their NQT year and this fell to 29 and 36 per cent seven years after NQT year. This means that the proportion of teachers who were still in the same school was 23 percentage points lower in the year after NQT year for Teach First teachers than for those who trained through higher education and school- and employment-based routes. The gap was similar seven years after their NQT year, where the proportion of teachers who trained through higher education and school- and employment-based routes and who were still in the same school was 16 and 23 percentage points lower for Teach First.

A smaller proportion of Teach First teachers than similar teachers who trained through other routes also stayed in the same region after their NQT year. Specifically, 80 per cent of Teach First teachers were still in the same region one year after their NQT year. This compared to 96 per cent of teachers who trained through higher education and school- and employment-based routes who were still in the same region one year after their NQT year. The proportion of Teach First teachers who stayed in the same region one year after NQT year was therefore 16 percentage points lower

than similar teachers who trained through higher education and school- and employment-based routes, respectively. The gap grew over time, such that seven years after NQT year, 43 per cent of Teach First teachers were still in the same region. This compared to 70 and 73 per cent of similar teachers who trained through higher education and school- and employment-based routes, which was 27 and 30 percentage points lower, respectively.

Regional movements broadly reflected a flow into London. Of all Teach First teachers who moved region one year after NQT year, four per cent of teachers in London in their NQT year moved outside of London. A much larger proportion (39 per cent) of those who moved region one year after NQT year moved from other regions of England into Inner or Outer London. Similar teachers teaching in similar schools but who trained through other routes showed much less of a tendency to move into London after their NQT year. For matched teachers who trained through higher education routes and moved region one year after NQT year, 14 per cent moved from Inner or Outer London to other regions. Similarly, 13 per cent (less than half the proportion of Teach First teachers) moved from other regions to Inner and Outer London. For matched teachers who trained through school- and employment-based routes and moved region one year after NQT year, 19 per cent moved from Inner or Outer London to other regions. Nine per cent moved from other regions to Inner and Outer London.

The difference in the proportion of teachers who trained through different routes who stayed in the same school and region is at least partly reflective of differences in their training programmes. One particularly important difference is programme duration, as we noted in Section 5.2.1. Teach First teachers complete their training after their NQT year. This is a natural break point at which qualified trainees may wish to leave their training school or training region. This same break point occurs between qualification and NQT years (a year earlier in the career pipeline) for teachers who trained through other routes.

Additionally, as part of their training, Teach First teachers were placed anywhere in the country in which schools were in disadvantaged areas and were struggling to recruit teachers through other means. The higher proportion of Teach First teachers than those who trained through other routes who moved school and region after their NQT year may therefore have also reflected a flow of teachers into schools and regions which were closer to their home region after the completion of their programme.

We found in Section 4 that Teach First teachers were more likely than similar teachers who trained through other routes to progress to middle and senior leadership, and the gap in progression rates to middle leadership was largest compared to other routes within the first few years after NQT year. Higher mobility between schools and regions for Teach First teachers may also have therefore reflected Teach First teachers who moved to different schools and regions in order to fill vacant leadership positions.

For Teach First teachers who qualified in early years education and stayed in teaching, a smaller proportion (26 per cent) than for primary teachers who trained through higher education (60 per cent) or school- and employment-based routes (61 per cent) stayed in the same school three years after NQT year. A similar proportion (87 per cent) than similar primary teachers who trained in

higher education (88 per cent) or school- and employment-based routes (87 per cent) stayed in the same region three years after NQT year.

## 6.2 The proportion of teachers who remained in disadvantaged schools after NQT year

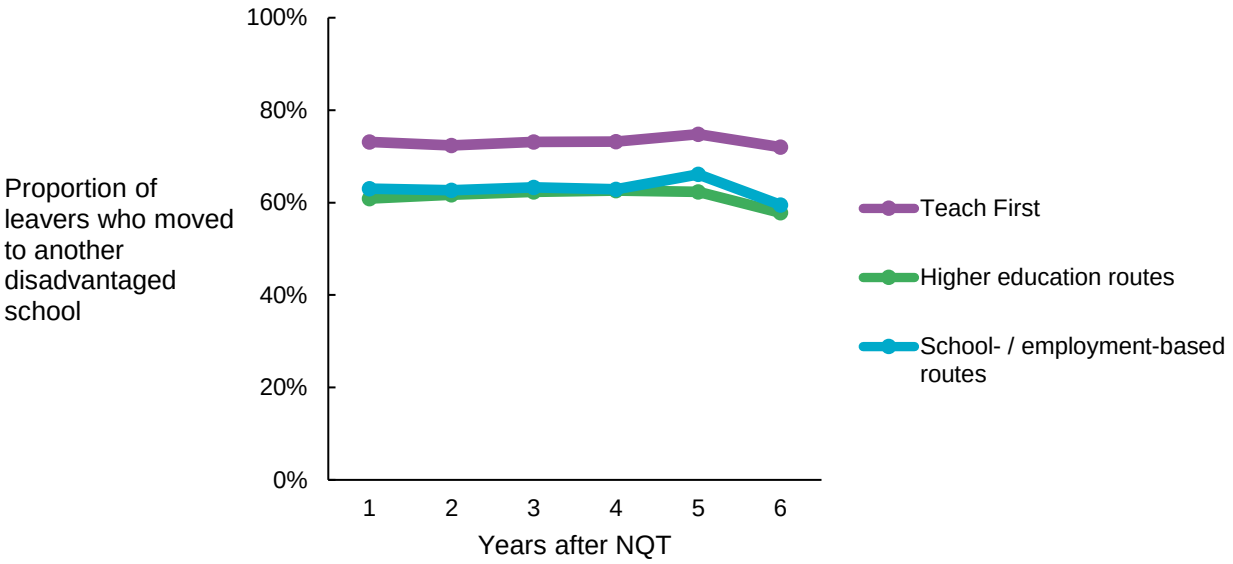
As we noted in Section 1.3, Teach First teachers as part of their training are placed in schools serving disadvantaged communities.[37] In their NQT year, when Teach First teachers who trained between 2011/12 and 2017/18 were in the second year of their programme, virtually all (96 per cent) of Teach First teachers were in a school which met the Teach First eligibility criteria. In our matched sample of similar teachers in similar schools who trained through higher education and school- and employment-based routes but who trained through different routes, a similarly large proportion of teachers were teaching in Teach First-eligible schools during their NQT year. The proportion was slightly lower, however, than for Teach First teachers, at 88 and 89 per cent for matched teachers who trained through higher education and school- and employment-based routes.[38]

After NQT year, when Teach First teachers have completed their training, those who remained in teaching appeared to be committed to the aim of teaching in schools serving disadvantaged communities (Section 5 described how retention rates differed between training routes). We showed in Section 6.1 that Teach First teachers were less likely to be teaching in the same school within the first seven years after NQT year. However, this did not represent a flow of Teach First teachers into less-disadvantaged schools, as Figure 26 shows that Teach First teachers who moved school tended to move to other disadvantaged schools. Specifically, 73 per cent of Teach First teachers who moved to a different school one year after NQT year moved to another disadvantaged school.

[37] We used the Teach First school eligibility criteria to define schools serving disadvantaged communities:
- The proportion of disadvantaged pupils at the school (measured by IDACI score) is > 40
- IDACI is 35 – 40 and the school is in an Achieving Excellence Area (AEA) 4 – 6
- IDACI is 30 – 35 and AEA is 5 – 6
- IDACI is 25 – 30 and AEA is 6.

[38] In the matched sample, while there were still slight differences in the proportion of teachers teaching in disadvantaged schools across training routes, schools were much more comparable than in the unmatched sample. A stricter match of Teach First teachers to teachers trained through other routes only who taught in Teach First-eligible schools would have reduced this difference but led to much smaller sample sizes. See the Methodological appendix for further details on the matching process.

**Figure 26 A higher proportion of Teach First teachers that moved school moved to another disadvantaged school compared to teachers who trained through other routes**




Note: We observed IDACI (one of the components in defining disadvantage) by linking the SWC to the NPD. We were only able to observe IDACI up to the 2018/19 academic year in the NPD and therefore only observe school disadvantage for up to six years after NQT.

Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

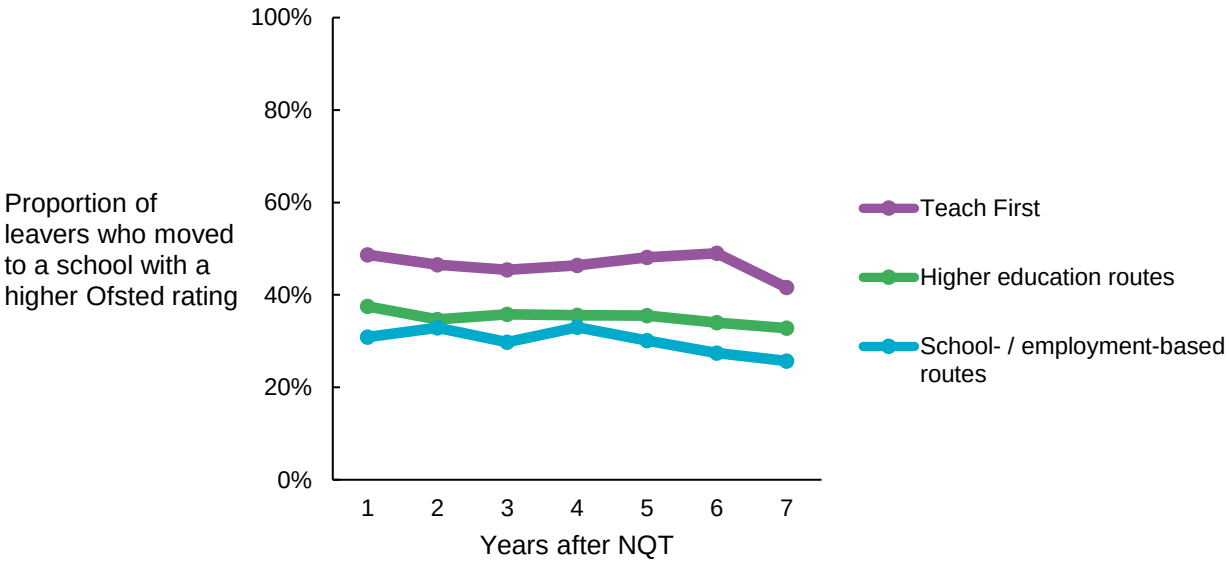
This was a higher proportion than for similar teachers who were teaching in similar schools in their NQT year who moved school. For matched teachers who trained through higher education routes, 63 per cent of those who stayed in teaching one year after NQT year but moved school remained within a disadvantaged school, and this is 61 per cent for matched teachers who trained through school- and employment-based routes. The proportion of those who moved school but remained within a disadvantaged school was therefore 14 and 13 percentage points higher for Teach First teachers than for similar teachers teaching in similar schools who trained through higher education and school- and employment-based routes, respectively.

## 6.3 The proportion of teachers who moved to schools with higher Ofsted ratings after NQT year

Teach First teachers who stayed in teaching and moved school were also more likely than similar teachers who trained through other routes to move into schools with higher Ofsted ratings. Specifically, of Teach First teachers who moved school one year after NQT year, almost half (49 per cent) moved to a school with a higher Ofsted rating.

Of similar teachers placed in similar schools[39] in their NQT year who trained through higher education routes and who moved school one year after NQT year, 38 per cent moved to a school with a higher Ofsted rating. This was 11 percentage points lower than for Teach First teachers. For similar teachers teaching in similar schools in their NQT year who trained through school- and employment-based routes and moved school one year after their NQT year, 31 per cent moved to a school with a higher Ofsted rating. This was 18 percentage points lower than for Teach First teachers. This gap was similar seven years after NQT year.

**Figure 27 Of teachers who left for other schools, a higher proportion of Teach First teachers than teachers who trained through other routes moved to schools with a higher Ofsted rating**




Source: NFER analysis of SWC (for 2010/11 – 2019/20), ITT-PP (for 2008/09 – 2019/20) and Teach First (for 2008/09 – 2018/19) data.

The results suggest that Teach First teachers who stayed in teaching appeared to remain committed to the aim of teaching in disadvantaged schools. This appears to be particularly the case if those schools were judged to have effective leadership, quality teaching and personal development opportunities which go along with a Good or Outstanding Ofsted rating.

[39] We included the Ofsted rating of the school in which teachers were teaching during their NQT year as a variable which we included in the matching. This ensures we compared the Ofsted rating of schools which teachers moved to on a like-for-like basis between training routes.

# 7 Conclusions

Our findings highlight the very different career trajectories of Teach First teachers compared to the trajectories of teachers who trained through other higher education and school- and employment-based training routes.

Teach First aims to provide a leadership pipeline for schools serving disadvantaged communities by supporting trainees to make rapid progression into leadership positions. Among the teachers who stayed in teaching, we find that those who trained through Teach First were more likely to be in middle leadership positions earlier in their careers. Three years after their NQT year, the proportion of Teach First teachers who were in middle leadership positions was 38 per cent higher than for similar teachers who trained through higher education routes and 22 per cent higher than for similar teachers who trained through school- and employment-based routes (50 per cent of Teach First teachers, compared to 36 and 40 per cent of similar teachers who trained through higher education and school- and employment-based routes, respectively). Five years after their NQT year, Teach First teachers were 20 per cent more likely to be a middle leader compared to similar teachers who train through other routes.

Those who trained through Teach First were also considerably more likely to be in senior leadership positions earlier in their careers. Three years after their NQT year, the proportion of Teach First teachers in senior leadership positions was 12 times higher than for similar teachers who trained through higher education routes and three times higher than for similar teachers who trained through school- and employment-based routes (four per cent of Teach First teachers compared to one-third and one per cent of similar teachers who trained through higher education and school- and employment-based routes, respectively). This progression gap persisted over time such that, seven years after their NQT year, the proportion of Teach First teachers in a senior leadership position was four and two times higher than for similar teachers who trained through higher education and school- and employment-based routes, respectively (30 per cent of Teach First teachers, compared to eight and 15 per cent).

Rates of qualified teacher status (QTS) achievement were similar between Teach First teachers and other routes. Furthermore, due to the two-year, employment-based nature of the Teach First Training Programme, Teach First trainees were considerably more likely than teachers trained through other routes to be working in state-funded schools during their NQT year (the second year of their training). For the cohort who began training in 2017/18, 94 per cent of Teach First teachers progressed from the first to the second year of the programme and were teaching in a state-funded school during their NQT year. This compared to 68 per cent of trainees who trained through higher education routes and 80 per cent of trainees who trained through school- and employment-based routes.

However, recruiting and training teachers, some of whom may not otherwise have entered teaching, to work in schools serving disadvantaged communities has a trade-off; they were less likely to remain in teaching after their NQT year (once they completed their programme) compared to teachers trained through other routes. Specifically, the retention rate of Teach First teachers in the year after NQT year was 18 and 19 percentage points lower than among similar teachers who trained through higher education and school- and employment-based routes respectively. It is

important to recognise that this is somewhat predictable. A trainee's NQT year marks the end of the two-year Teach First Training Programme, whereas other training routes are one-year programmes that end before a trainee's NQT year. The end of a training programme is a natural break point where a portion of trainees decide not to work in teaching altogether or move into teaching in independent schools or outside of England.

The average difference in retention rates between Teach First teachers and teachers who trained through other routes also masked improvements in the retention rate differences among more recent cohorts. For example, the proportion of Teach First teachers who began their training in 2011/12 and were still in teaching in the year after their NQT year was 16 and 22 percentage points lower than for teachers who began their training in the same year on higher education and school- and employment-based routes respectively. However, the proportion of Teach First teachers who began their training in 2017/18 and were still in teaching one year after their NQT year was four percentage points *higher* than for teachers who began their training in the same year on a higher education route.

This was partly due to cohorts of Teach First teachers being increasingly more likely than teachers trained through other routes to be teaching in the state-sector during their NQT years. It was also due to a narrowing of the gap in retention rates from a teacher's NQT year to the following year between Teach First teachers and teachers trained through other routes. Comparing similar NQTs in similar schools, the gap in retention rates between Teach First teachers and similar teachers who trained through higher education routes one year after NQT year was 23 percentage points for the 2012/13 cohort but narrowed to 14 percentage points for the 2017/18 cohort. Similarly, the gap in retention rates between Teach First teachers and similar trainees who trained through school- and employment-based routes one year after NQT year narrowed from 23 percentage points for the 2012/13 cohort to 17 percentage points for the 2017/18 cohort.

Teach First aims to recruit graduates and career changers into its training programme who are committed to the aim of teaching in schools serving disadvantaged communities. We found that at the end of the two-year training programme, among those who stayed in teaching, Teach First teachers were more likely to move school and move region than similar teachers who trained through other routes. This was likely due to the design of programme which placed trainees in schools all over the country and who then were more likely to move after the completion of their training.

However, Teach First teachers appeared to remain committed to the Teach First mission. Among those that did move school, Teach First teachers were more likely than teachers who trained through other routes to remain teaching in schools serving disadvantaged communities. Teachers who trained through Teach First were also more likely than those who trained through other routes to move to a school that was rated as Good or Outstanding by Ofsted. Teach First teachers were therefore particularly likely to remain in disadvantaged schools if they were judged to have effective leadership, quality teaching and personal development opportunities which go along with a Good or Outstanding Ofsted rating.

# References


Allen, R. *et al.* (2014) *The costs and benefits of different Initial Teacher Training routes*. IFS Report R100. IFS. Available at: https://doi.org/10.1920/re.ifs.2014.0100.

Allen, R. and Allnutt, J. (2017) 'The impact of Teach First on pupil attainment at age 16', *British Educational Research Journal*, 43(4), pp. 627–646. Available at: https://doi.org/10.1002/berj.3288.

Allen, R., Mian, E. and Sims, S. (2016) *Social inequalities in access to teachers*. Available at: https://ffteducationdatalab.org.uk/wp-content/uploads/2016/05/Social-Market-Foundation-Social-inequalities-in-access-to-teachers.pdf (Accessed: 30 June 2023).

Allen, R., Parameshwaran, M. and Nye, P. (2016) *The careers of Teach First Ambassadors who remain in teaching: job choices, promotion and school quality.* Available at: https://ffteducationdatalab.org.uk/wp-content/uploads/2016/07/The-careers-of-Teach-First-Ambassadors-who-remain-in-teaching-FINAL.pdf (Accessed: 30 June 2023).

An, Y. and Koedel, C. (2021) 'How do teachers from alternative pathways contribute to the teaching workforce in urban areas? Evidence from Kansas City', *AERA Open*, 7, pp. 1–20. Available at: https://doi.org/10.1177/23328584211026952.

Birchall, M. (2021) *The Times Top 100 Graduate Employers: the definitive guide to the leading employers recruiting graduates during 2021-2022.* London: High Fliers Publications Limited.

Chacon, A. and Pena, P. (2017) *The impact of Enseña por México on student socioemotional skills*. Available at: http://www.microanalitica.com/TFA/The%20impact%20of%20Ensena%20por%20Mexico%20on%20student%20socioemotional%20skills.pdf (Accessed: 30 June 2023).

DfE (2017) *Analysis of teacher supply, retention and mobility*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/615729/SFR33_2017_Text.pdf (Accessed: 9 September 2022).

Hutchings, M. *et al.* (2006) *An evaluation of innovative approaches to teacher training on the Teach First programme*. Available at: https://www.academia.edu/867948/An_Evaluation_of_Innovative_Approaches_to_Teacher_Training_on_the_Teach_First_Programme_Final_Report_to_the_Training_And (Accessed: 30 June 2023).

Hutchinson, J. (2016) *School inspection in England: Is there room to improve?* Available at: https://epi.org.uk/publications-and-research/school-inspection-england-room-improve/ (Accessed: 30 June 2023).

Kuznetsova, D. (2021) 'Diversity and inclusion on our training programme 2020/21', *Diversity and inclusion on our training programme 2020/21*, 27 May. Available at: https://www.teachfirst.org.uk/blog/diversity-inclusion-training-programme-2020 (Accessed: 17 November 2022).

Leuven, E. and Sianesi, B. (2018) 'PSMATCH2: Stata module to perform full Mahalanobis and propensity score matching, common support graphing, and covariate imbalance testing', *Statistical Software Components*. Boston College Department of Economics. Available at: https://ideas.repec.org/c/boc/bocode/s432001.html (Accessed: 9 September 2022).

McLean, D. and Worth, J. (2023) *The impact of the Teach First Training Programme on schools and pupils*. Slough: NFER. Available at: www.nfer.ac.uk/the-impact-of-the-teach-first-training-programme-on-schools-and-pupils.

Muijs, D., Chapman, C. and Armstrong, P. (2013) 'Teach First: pedagogy and outcomes. The impact of an alternative certification programme', *Journal for educational research online*, 4(2), pp. 29–64. Available at: https://doi.org/10.25656/01:7480.

OECD (2022) *Mending the education divide: getting strong teachers to the schools that need them most*. Paris: OECD. Available at: https://www.oecd.org/education/talis/mending-the-education-divide-92b75874-en.htm (Accessed: 9 September 2022).

Ofsted (2011) *Teach First: Initial teacher education inspection report*. Available at: https://files.ofsted.gov.uk/v1/file/1720861 (Accessed: 9 September 2022).

Ofsted (2015) *Teach First London ITE Partnership: Initial teacher education inspection report*. Available at: https://files.ofsted.gov.uk/v1/file/2563560 (Accessed: 9 September 2022).

Penner, E.K. (2021) 'Teach For America and teacher quality: increasing achievement over time', *Educational Policy*, 35(7), pp. 1047–1084. Available at: https://doi.org/10.1177/0895904819843595.

Rubin, D.B. (1980) 'Bias reduction Using Mahalanobis-metric matching', *Biometrics*, 36(2), pp. 293–298. Available at: https://doi.org/10.2307/2529981.

Sibieta, L. (2020) *Teacher shortages in England: analysis and pay options*. London. Available at: https://epi.org.uk/wp-content/uploads/2020/02/Teacher-shortages-and-pay_2020_EPI.pdf (Accessed: 9 September 2022).

Starkey-Midha, G. (2020) *Building a fairer future.Tackling the attainment gap in GCSE English and maths*. Teach First. Available at: https://www.teachfirst.org.uk/sites/default/files/2020-08/GCSE%20report%20-%20Building%20a%20fairer%20future..pdf (Accessed: 9 September 2022).

Teach First (2021) *A fighting chance for every child: a manifesto for ending educational inequality*. London: Teach First. Available at: https://www.teachfirst.org.uk/sites/default/files/2021-08/Manifesto_v3_Aug2021.pdf (Accessed: 9 September 2022).

Teach First (2022a) *Annual Report and Accounts: 2020-2021*. Available at: https://www.teachfirst.org.uk/sites/default/files/2022-04/2020-21%20TF%20Annual%20Report.pdf (Accessed: 9 September 2022).

Teach First (2022b) *Application and assessment FAQs*, *Teach First application and assessment FAQs*. Available at: https://www.teachfirst.org.uk/knowledge-base/training-programme/application (Accessed: 9 September 2022).

Worth, J. *et al.* (2018) *Teacher workforce dynamics in England, nurturing, supporting and valuing teachers*. Slough: NFER. Available at: https://www.nfer.ac.uk/media/3111/teacher_workforce_dynamics_in_england_final_report.pdf (Accessed: 9 September 2022).

Worth, J. and Faulkner-Ellis, H. (2022) *Teacher labour market in England. Annual report 2022*. NFER, p. 20. Available at: https://www.nfer.ac.uk/media/4885/teacher_labour_market_in_england_annual_report_2022.pdf (Accessed: 9 September 2022).

Worth, J., McLean, D. and Sharp, C. (2022) *Racial equality in the teacher workforce, an analysis of representation and progression opportunities from Initial Teacher Training to headship - full report*. Slough: NFER, p. 147. Available at: https://www.nfer.ac.uk/media/4922/racial_equality_in_the_teacher_workforce_full_report.pdf (Accessed: 9 September 2022).

Worth, J., Rennie, C. and Lynch, S. (2018) *Teacher supply, retention and mobility in London.* Slough: NFER. Available at: https://www.nfer.ac.uk/teacher-supply-retention-and-mobility-in-london/ (Accessed: 9 September 2022).

Wright, A. *et al.* (2019) *Evaluation report for teach for America*. Center on Research and Evaluation. Available at: https://www.smu.edu/-/media/Site/Simmons/Research/CORE/PDFs/TFA_TXImpact_Final-Report_February2019.pdf (Accessed: 9 September 2022).

# Methodological appendix

This section provides additional details on the methodology used in this evaluation. We outlined the main methodology of the evaluation (including data sources, the statistical matching and regression modelling) in Section 2 as these are key components to the evaluation. This section complements the summary in Section 2 and is intended to address further details on the methodology, including specifics on how we linked datasets, imputations performed on the main datasets, balance tables, and details on the matching and regression model specification.

## 1 Data matching

This analysis used linked data from the SWC, ITT-PP and Teach First database. The DfE performed the data linkage prior to the start of the evaluation by linking first the ITT-PP data to the SWC and then the Teach First database to the ITT-PP/SWC linkage. The DfE used identifiable teacher characteristics (e.g. Teacher Reference Number (TRN), names and birth dates) as part of the linkage process, which were then converted to anonymised identifiers for analytical use.

To generate our main analysis sample, we linked each dataset together using the anonymised identifiers. The School Workforce Census (SWC) is a longitudinal dataset (meaning it records the same teachers over time), while the Initial Teacher Training Performance Profiles (ITT-PP) and Teach First database contain only one record per trainee.[40] We first matched the Teach First database to the ITT-PP as a one-to-one match (on the anonymised identifier) and then matched the product of this linkage to the SWC as a one-to-many match.

We linked in further information on school characteristics which were derived from the DfE's public register of school information.[41] This encompassed geographic, financial, deprivation, pupil capacity, attainment and other school-level workforce variables which we used as part of the matching and regression analysis. We linked this information to the SWC/ITT-PP/Teach First database linkage using a school's Unique Reference Number (URN). We generated an additional school indicator which was used to account for schools changing URNs over time, merging and splitting apart, which ensured that we linked each SWC URN to the correct URN in the school-level database. We also linked school-level IDACI information to our main analysis database (using the URN identifier). IDACI information was derived from the National Pupil Database (NPD), for which we observed data up to 2018/19.

[40] There were, however, some duplicate records in the Teach First dataset which we removed as part of the initial data cleaning. Most of these duplicate records were identical except for the school in which the trainee was placed in their NQT year. In these cases, we used the linkage to the SWC in order to determine which record was correct, and we discarded the other, duplicate record. In cases where neither school linked to an SWC record, we discarded one of the duplicate Teach First records at random.
[41] https://www.get-information-schools.service.gov.uk/

# 2 Imputations

Since the SWC is longitudinal, there is a possibility for data errors in some of the teacher records. This can consist of incorrect observations of teacher characteristics or missing entries in the database, which can occur where schools do not return the SWC census or return it with errors. While data errors only exist in the minority of cases, as we noted in Section 2, errors are most likely to affect NQTs. This is because in most cases, NQTs begin working in a school only a few months before the census is taken and so are more likely than other teachers already working at the school to have been missed off the census return.

Since NQTs are key to our research, we imputed SWC records where errors in the data were very likely. Specifically, we set immutable teacher or school characteristics (e.g. ethnic group, school region, phase) to their modal value if they were inconsistent across all observations of that teacher or school. We set age to be equal to age in the previous year plus one in cases where age was likely incorrect (e.g. where age decreased or did not increase over time, or increased by more than one year in subsequent records).

In the case of missing SWC entries, we used two strategies to impute records where possible. In some cases, a teacher may be missing an SWC record but will have a record from the Database of Teacher Records (DTR). The DTR is an administrative database of pension records which is used to fill in 'holes' in the SWC records where they may exist. DTR records identify whether teachers are in teaching in a year when they do not have an SWC record, but the records themselves do not provide any detail on the school, role or characteristics of the teacher.

We also used the date recorded in the SWC of when a teacher began teaching in a particular school to impute any additional missing records not identified by the DTR. If a teacher did not have either an SWC or DTR record, but their recorded start date in a school was at least one year before their first SWC record, we inserted an SWC record. Since this inserted SWC record would be missing all teacher and school characteristics, we then filled in missing information using the same teacher's records from later years (where they were not missing).

We also applied additional imputation on the earnings variable used to analyse salary progression. As we noted in Section 4, we used gross pay in our analysis as it encompassed any potential TLR payments which a teacher may have received for taking on additional leadership responsibilities. We used the FTE-adjusted version of gross pay so that our earnings measure was comparable between those working full-time and part-time.

We did not adjust salary observations to account for inflation. This is because during the matching process, we matched Teach First teachers to teachers who trained through other ITT routes exactly on training year. This means that our comparisons between Teach First teachers and teachers who trained through other routes were made on a within-year basis and inflation adjustment was not necessary. We also included NQT year fixed effects within all of the salary progression regression specifications in order to further wash out the effect of inflation over time.

There were some likely cases of incorrect earnings data in the SWC, mainly where earnings were implausibly low or implausibly high. We set to missing any earnings records which were negative

or which were more than £250,000. We then further set to missing any earnings records which were in the top and bottom one per cent of the distribution of earnings records.

# 3 Matching methodology

A key part of our analysis of the progression and retention rates of Teach First teachers compared to teachers who trained through other routes was matching on a like-for-like basis. This was done to ensure that we were not confounding differences in retention rates which were attributable to the different school contexts in which Teach First teachers tended to teach.

As we noted in Section 2, we matched Teach First teachers to teachers who trained through other routes using Mahalanobis metric matching (Rubin, 1980). The variables we used for the matching included teacher and school characteristics (of the school a teacher was in during their NQT year) which are listed in Tables 2 and 4. We performed Mahalanobis matching separately for teachers who trained through higher education and school- and employment-based routes.

We also matched exactly on training year and region. That is, we matched Teach First teachers to similar teachers who were teaching in similar schools in their NQT year but who trained through higher education or school- and employment-based routes in the same year and region. To do this, we performed stratified matching (Leuven and Sianesi, 2018). That is, we defined groups within our sample of teachers based on the combination of region and year in which a trainee began their training. We then performed Mahalanobis matching within that group.

Within the same year and region group, we matched each Teach First teacher with up to ten of their 'nearest neighbours', that is, the most-similar teachers who trained through other routes, where similarity was based on the Mahalanobis distance. We applied a caliper of 90 on the nearest neighbour matching to ensure that we matched each Teach First trainee with a reasonably similar trainee in the comparison group.[42] We also implemented nearest neighbour matching with replacement, meaning that each teacher in the comparison group may have matched with Teach First teachers multiple times. Post-matching, we ensured that this did not lead to potential bias due to comparison teachers being matched to Teach First teachers an excessive amount of times.

As a final step, we combined all stratified matches together (including matching weights) into the main matched groups for the analysis. We derived one matched group for the comparison to higher education routes and one for school- and employment-based routes.

We also explored whether propensity score matching or coarsened exact matching were viable alternative matching methods, in order to ensure that our methodological choices were not a key driver of our results. However, neither alternative technique was able to provide a usable matched sample.

[42] A caliper in Mahalanobis metric matching is less interpretable than in the propensity score matching framework. Nonetheless, the caliper reflects an upper limit on the allowable Malahanobis distance between each Teach First trainee and a potential match in the comparison group. As with all research designs which use a matching methodology, the imposition of a caliper involves a bias-variance trade-off. We used a caliper of 90 as it led to both acceptable balanced in the matched sample and reasonable sample sizes.

Due to the stratified matching approach (which we used in order to match exactly on training year and region), we were unable to include the full suite of matching variables within a propensity score matching model. This was because there was insufficient sample size of teachers within each training year and region combination to estimate a logit model explaining selection into the Teach First programme as a function of all observed covariates.

Additionally, it is not clear that propensity score matching was the most appropriate tool to account for differences in school characteristics. Since NQTs are placed in schools after completing their ITT programme (or, for Teach First teachers at the beginning of their programme but after selection into the programme has taken place), characteristics of the school that teachers were in during their NQT year are unlikely to affect the likelihood that they select onto Teach First as their training programme.

Similarly, coarsened exact matching was not able to provide a usable matched sample because the sample size of comparison teachers within each training year and region group was too small to exactly match on the observed characteristics. While removing characteristics or further coarsening them would potentially be a potential solution to the problem, this would likely lead to a worse balance than Mahalanobis matching.

# 4 Matching output

## 4.1 Matching output for the higher education comparison group

Table 2 shows that there were differences between Teach First teachers and the full sample of teachers who trained through higher education routes. Teach First teachers tended to be slightly younger, were considerably more likely to have first and upper second-class undergraduate degrees, and were much less likely to qualify as a primary teacher than teachers who trained through higher education routes. Teach First teachers were also considerably more likely to be working in schools during their NQT year that were more deprived, spent more of their school budget on supply teachers and were schools with the highest proportions of inexperienced teachers.

The matching led to a better balance in the matched sample, particularly in school characteristics. After the matching, the proportions of Teach First teachers across each characteristic was within 10 percentage points of teachers who trained through higher education routes (e.g. in the matched sample, the proportion of Teach First teachers who were under 23 when they began their training was within 10 percentage points of teachers who trained through higher education routes).

The matching inevitably discarded teachers from the sample who did not have a suitable match, both for the Teach First and comparison group. This was mainly because the matching included only those comparison teachers in the sample who had the most similar characteristics to Teach First teachers. However, Teach First teachers were also discarded from the matched sample because they also did not have a suitable match in the comparison group (e.g. if, in a particular region and training year, there were no NQTs of a particular ethnic group, or who qualified in a particular subject).

However, the matched sample included virtually all (99.4 per cent) of the Teach First teachers in the sample and 32.6 per cent of comparison teachers, who were the most similar in teacher and school characteristics. The final sample size was 27,278, including 6,859 Teach First teachers and 20,419 teachers who trained through higher education routes.

**Table 2 Trainee and school characteristics before and after matching for the higher education routes comparison group**

| Variable | | Unmatched sample proportions (%) | | Matched sample proportions (%) | |
|---|---|---|---|---|---|
| | | Comparison | Teach First | Comparison | Teach First |
| **Age** | Age under 23 | 13.6 | 13.8 | 11.6 | 13.8 |
| | Between 23 and 24 | 34.4 | 45.7 | 44.2 | 45.7 |
| | Between 25 and 29 | 33.3 | 32.8 | 36.7 | 32.9 |
| | Between 30 and 39 | 12.4 | 6.2 | 6.1 | 6.2 |
| | 40 and over | 6.3 | 1.5 | 1.4 | 1.4 |
| | | | | | |
| **Gender** | Female | 73.1 | 70.2 | 73.2 | 70.2 |
| | Male | 26.9 | 29.8 | 26.8 | 29.8 |
| | | | | | |
| **Ethnicity** | White or White British | 82.0 | 80.4 | 83.5 | 80.7 |
| | Asian or Asian British | 8.5 | 6.2 | 7.7 | 6.2 |
| | Black or Black British | 3.1 | 2.5 | 2.2 | 2.4 |
| | Mixed ethnic background | 2.8 | 4.3 | 2.8 | 4.3 |
| | Other ethnic background | 1.1 | 0.9 | 0.6 | 0.8 |
| | Unknown or refused | 2.5 | 5.7 | 3.2 | 5.6 |
| | | | | | |
| **Degree class** | First | 16.1 | 22.4 | 15.2 | 22.5 |
| | Upper second | 57.7 | 69.7 | 72.3 | 69.9 |
| | Lower second | 22.1 | 2.4 | 10.7 | 2.4 |
| | Other | 2.6 | 0.3 | 0.3 | 0.3 |
| | Unknown | 1.6 | 5.1 | 1.6 | 4.9 |
| | | | | | |
| **Ofsted rating** | Outstanding | 24.0 | 17.0 | 20.5 | 17.0 |
| | Good | 56.7 | 51.4 | 58.0 | 51.4 |
| | Requires improvement | 14.0 | 21.0 | 14.8 | 21.0 |

| Variable | | Unmatched sample proportions (%) | | Matched sample proportions (%) | |
|---|---|---|---|---|---|
| | Inadequate | 3.2 | 7.5 | 4.6 | 7.5 |
| | Ofsted rating unknown | 2.1 | 3.1 | 2.0 | 3.1 |
| | | | | | |
| **Quintile of FSM eligibility** | First quintile | 16.7 | 0.9 | 4.1 | 0.9 |
| | Second quintile | 18.0 | 1.9 | 4.8 | 1.8 |
| | Third quintile | 19.6 | 11.8 | 12.2 | 11.8 |
| | Fourth quintile | 21.9 | 31.0 | 28.5 | 31.0 |
| | Fifth quintile | 23.7 | 54.5 | 50.3 | 54.5 |
| | | | | | |
| **Quintile of teachers in their first year of teaching** | First quintile | 2.5 | 0.4 | 0.4 | 0.4 |
| | Second quintile | 10.0 | 4.0 | 4.1 | 3.9 |
| | Third quintile | 19.3 | 9.5 | 10.9 | 9.4 |
| | Fourth quintile | 29.3 | 24.2 | 25.0 | 24.2 |
| | Fifth quintile | 38.9 | 62.0 | 59.6 | 62.0 |
| | | | | | |
| **Quintile of expenditure on supply staff per pupil** | First quintile | 19.9 | 17.4 | 17.6 | 17.4 |
| | Second quintile | 18.7 | 12.2 | 12.5 | 12.2 |
| | Third quintile | 18.5 | 15.7 | 15.1 | 15.6 |
| | Fourth quintile | 19.3 | 20.6 | 20.9 | 20.6 |
| | Fifth quintile | 20.7 | 30.5 | 31.7 | 30.5 |
| | Unknown | 3.0 | 3.6 | 2.3 | 3.5 |
| | | | | | |
| **Quintile of IDACI deprivation index** | First quintile | 15.1 | 0.4 | 4.0 | 0.5 |
| | Second quintile | 16.9 | 1.0 | 4.1 | 1.0 |
| | Third quintile | 18.6 | 5.9 | 7.4 | 5.9 |
| | Fourth quintile | 21.8 | 28.9 | 26.4 | 28.9 |
| | Fifth quintile | 27.5 | 63.8 | 58.1 | 63.8 |
| | | | | | |
| **Phase and subject** | Primary | 44.4 | 25.3 | 24.3 | 25.2 |
| | Mathematics | 10.5 | 15.9 | 14.1 | 15.9 |
| | Sciences | 11.6 | 13.6 | 16.3 | 13.6 |
| | English | 8.0 | 24.1 | 18.7 | 24.2 |
| | Languages | 6.8 | 5.7 | 6.4 | 5.7 |
| | History and geography | 6.5 | 9.6 | 10.0 | 9.6 |
| | Art & design, music, drama | 4.0 | 0.9 | 1.7 | 0.9 |
| | Other subjects | 8.3 | 4.9 | 8.4 | 4.9 |
| | | | | | |

| Variable | | Unmatched sample proportions (%) | | Matched sample proportions (%) | |
|---|---|---|---|---|---|
| **Number of obs.** | | **62,646** | **6,902** | **20,419** | **6,859** |
| **Proportion of sample kept** | | **-** | **-** | **32.6%** | **99.4%** |

Source: NFER analysis of SWC, ITT-PP and Teach First data for 2010/11 – 2018/19.

Additional variables such as school attainment and school type were not included in the matching. This is because they did not play a direct role in school eligibility for Teach First, and were likely correlated with other school characteristics included in the matching (e.g. Ofsted ratings and deprivation). We checked that there were no substantial differences in these characteristics, and that therefore the school characteristics included in the matching sufficiently captured the key differences in school contexts into which teachers were placed. Table 3 shows that this seems to be the case. We also show that region and training year were nearly perfectly balanced in the matched sample, as we matched exactly on these attributes.

### Table 3 Other characteristics not used in the matching for the higher education routes comparison group

| Non-matching variables | | Post-matching | |
|---|---|---|---|
| | | Comparison | Treatment |
| **School type** | LA maintained | 42.8 | 34.9 |
| | Single academy | 18.2 | 17.4 |
| | Multi-academy trust | 39.0 | 47.7 |
| | | | |
| **Quintile of KS2 attainment** | First attainment quintile | 5.2 | 6.9 |
| | Second attainment quintile | 5.0 | 5.3 |
| | Third attainment quintile | 4.3 | 4.5 |
| | Fourth attainment quintile | 3.6 | 3.0 |
| | Fifth attainment quintile | 3.4 | 2.8 |
| | Secondary - has KS4 data | 74.1 | 75.7 |
| | Unknown | 4.3 | 1.8 |
| | | | |
| **Quintile of KS4 attainment** | First attainment quintile | 15.7 | 23.9 |
| | Second attainment quintile | 16.5 | 20.2 |
| | Third attainment quintile | 17.1 | 14.7 |
| | Fourth attainment quintile | 14.0 | 11.0 |
| | Fifth attainment quintile | 10.8 | 5.8 |
| | Primary - has KS2 data | 21.6 | 22.5 |
| | Unknown | 4.3 | 1.8 |
| | | | |
| **Region** | East of England | 4.4 | 4.5 |

| Non-matching variables | | Post-matching | |
|---|---|---|---|
| | East Midlands | 5.9 | 6.1 |
| | West Midlands | 12.8 | 12.7 |
| | London | 42.1 | 41.6 |
| | North East | 4.7 | 4.7 |
| | North West | 8.5 | 8.6 |
| | South East | 7.9 | 7.9 |
| | South West | 3.8 | 3.9 |
| | Yorkshire and the Humber | 10.0 | 10.0 |
| | | | |
| **NQT year** | 2012 | 7.3 | 7.2 |
| | 2013 | 9.5 | 9.7 |
| | 2014 | 13.9 | 13.9 |
| | 2015 | 16.9 | 16.7 |
| | 2016 | 19.5 | 19.4 |
| | 2017 | 16.5 | 16.6 |
| | 2018 | 16.4 | 16.4 |
| | | | |
| **Average school capacity (number of pupils)** | | 1,091 | 1,078 |

Source: NFER analysis of SWC, ITT-PP and Teach First data for 2010/11 – 2018/19.

## 4.2 Matching output for the school- and employment-based route comparison group

Similarly to the comparison with higher education routes, Table 4 shows that there were differences between Teach First teachers and the full sample of teachers who trained through school- and employment-based routes. Teach First teachers tended to be younger (more so than compared to teachers who trained through higher education routes), more likely to have first and upper second-class undergraduate degrees, and less likely to be qualified as a primary teacher than teachers who trained through school- and employment-based routes. Teach First trainees also tended to be placed in schools during their NQT year that were more deprived, spent more of their school budget on supply teachers and had the highest proportions of inexperienced teachers.

The matching led to a better balance in the matched sample, though the balance in the matched sample was not as close as with the higher education route sample. After the matching, the proportions of Teach First teachers across each characteristic were generally closer than pre-matching, though there were some instances of differences across age categories which were greater than 10 percentage points. For example, in the matched sample, the proportion of Teach First teachers who were between 25 and 29 is 33 per cent and 45 per cent in the comparison group.

This reflects a key difference in training routes, namely that teachers who trained through school- and employment-based routes were considerably older than teachers who trained through other routes. Accordingly, in all of the regression modelling, we included all matching covariates as explanatory variables in all of the overall regression models in order to control for any differences in factors such as age which remained after the matching.

As with the matching to the sample of teachers who trained through higher education routes, some teachers were discarded from the matched sample as they did not have a counterpart in the other sample close in characteristics. The matched sample contained nearly all (99.2 per cent) of the Teach First teachers in the sample and 36.7 per cent of comparison teachers, who were the most similar in teacher and school characteristics. The final sample size was slightly smaller than the sample matched to teachers who trained through higher education routes at 24,029, including 6,850 Teach First teachers and 17,179 teachers who trained through school- and employment-based routes.

**Table 4 Trainee and school characteristics before and after matching for the school- and employment-based routes comparison group**

| Variable | | Pre-matching proportions (%) | | Post-matching proportions (%) | |
|---|---|---|---|---|---|
| | | Comparison | Treatment | Comparison | Treatment |
| Age | Age under 23 | 7.2 | 13.8 | 7.3 | 13.7 |
| | Between 23 and 24 | 23.1 | 45.7 | 32.7 | 45.7 |
| | Between 25 and 29 | 36.3 | 32.8 | 45.1 | 32.9 |
| | Between 30 and 39 | 20.2 | 6.2 | 11.8 | 6.2 |
| | 40 and over | 13.2 | 1.5 | 3.1 | 1.4 |
| | | | | | |
| Gender | Female | 72.3 | 70.2 | 72.3 | 70.2 |
| | Male | 27.7 | 29.8 | 27.7 | 29.8 |
| | | | | | |
| Ethnicity | White or White British | 86.5 | 80.4 | 88.5 | 80.8 |
| | Asian or Asian British | 5.3 | 6.2 | 4.3 | 6.2 |
| | Black or Black British | 2.3 | 2.5 | 1.6 | 2.4 |
| | Mixed ethnic background | 2.2 | 4.3 | 2.4 | 4.2 |
| | Other ethnic background | 0.8 | 0.9 | 0.5 | 0.8 |
| | Unknown or refused | 3.0 | 5.7 | 2.7 | 5.5 |
| | | | | | |

| Variable | | Pre-matching proportions (%) | | Post-matching proportions (%) | |
|---|---|---|---|---|---|
| **Degree class** | First | 16.0 | 22.4 | 14.9 | 22.5 |
| | Upper second | 53.1 | 69.7 | 71.3 | 69.9 |
| | Lower second | 23.6 | 2.4 | 11.5 | 2.4 |
| | Other | 3.8 | 0.3 | 0.4 | 0.3 |
| | Unknown | 3.5 | 5.1 | 1.9 | 4.9 |
| | | | | | |
| **Ofsted rating** | Outstanding | 25.8 | 17.0 | 25.7 | 17.0 |
| | Good | 55.7 | 51.4 | 55.0 | 51.4 |
| | Requires improvement | 12.5 | 21.0 | 13.6 | 21.0 |
| | Inadequate | 3.2 | 7.5 | 3.9 | 7.5 |
| | Ofsted rating unknown | 2.9 | 3.1 | 1.9 | 3.0 |
| | | | | | |
| **Quintile of FSM eligibility** | First quintile | 17.6 | 0.9 | 3.8 | 0.9 |
| | Second quintile | 18.8 | 1.9 | 5.1 | 1.8 |
| | Third quintile | 19.9 | 11.8 | 12.8 | 11.7 |
| | Fourth quintile | 21.7 | 31.0 | 28.2 | 31.1 |
| | Fifth quintile | 22.0 | 54.5 | 50.2 | 54.4 |
| | | | | | |
| **Quintile of teachers in their first year of teaching** | First quintile | 3.6 | 0.4 | 0.4 | 0.5 |
| | Second quintile | 10.7 | 4.0 | 4.2 | 3.9 |
| | Third quintile | 21.1 | 9.5 | 11.0 | 9.5 |
| | Fourth quintile | 28.7 | 24.2 | 24.7 | 24.2 |
| | Fifth quintile | 35.9 | 62.0 | 59.7 | 62.0 |
| | | | | | |
| **Quintile of expenditure on supply staff per pupil** | First quintile | 24.4 | 17.4 | 21.1 | 17.4 |
| | Second quintile | 20.3 | 12.2 | 13.1 | 12.2 |
| | Third quintile | 19.1 | 15.7 | 15.5 | 15.6 |
| | Fourth quintile | 17.7 | 20.6 | 19.4 | 20.6 |
| | Fifth quintile | 16.3 | 30.5 | 28.7 | 30.5 |
| | Unknown | 2.3 | 3.6 | 2.1 | 3.6 |
| | | | | | |
| **Quintile of IDACI deprivation index** | First quintile | 15.8 | 0.4 | 3.7 | 0.5 |
| | Second quintile | 18.1 | 1.0 | 4.1 | 0.9 |
| | Third quintile | 19.7 | 5.9 | 8.2 | 5.9 |
| | Fourth quintile | 22.2 | 28.9 | 25.2 | 29.0 |
| | Fifth quintile | 24.2 | 63.8 | 58.7 | 63.8 |
| | | | | | |
| | Primary | 49.9 | 25.3 | 24.4 | 25.2 |

| Variable | | Pre-matching proportions (%) | | Post-matching proportions (%) | |
|---|---|---|---|---|---|
| Phase and subject | Mathematics | 7.9 | 15.9 | 10.6 | 15.9 |
| | Sciences | 8.6 | 13.6 | 12.4 | 13.6 |
| | English | 10.8 | 24.1 | 27.3 | 24.1 |
| | Languages | 3.7 | 5.7 | 4.1 | 5.7 |
| | History and geography | 7.3 | 9.6 | 11.5 | 9.6 |
| | Art & design, music, drama | 4.6 | 0.9 | 2.3 | 0.9 |
| | Other subjects | 7.1 | 4.9 | 7.4 | 4.9 |
| | | | | | |
| **Number of obs.** | | **46,801** | **6,902** | **17,179** | **6,850** |
| **Proportion of sample kept** | | **-** | **-** | **36.7%** | **99.2%** |

Source: NFER analysis of SWC, ITT-PP and Teach First data for 2010/11 – 2019/20.

As with the matched higher education route sample, additional variables such as school attainment and school type were not included in the matching as they did not play a direct role in school eligibility for Teach First. We checked that there were no substantial differences in these characteristics, which seemed to be the case. We also show that region and training year were nearly perfectly balanced in the matched sample, as we have matched exactly on these attributes.

### Table 5 Other characteristics not used in the matching for the school- and employment-based routes comparison group

| Variable | | Post-matching proportions (%) | |
|---|---|---|---|
| | | Comparison | Treatment |
| School type | LA maintained | 37.8 | 34.9 |
| | Single academy | 16.0 | 17.4 |
| | Multi-academy trust | 46.2 | 47.7 |
| | | | |
| Quintile of KS2 attainment | First attainment quintile | 4.8 | 6.8 |
| | Second attainment quintile | 4.8 | 5.3 |
| | Third attainment quintile | 4.5 | 4.6 |
| | Fourth attainment quintile | 3.9 | 3.0 |
| | Fifth attainment quintile | 3.7 | 2.7 |
| | Secondary - has KS4 data | 73.1 | 75.7 |
| | Unknown | 5.3 | 1.8 |
| | | | |
| Quintile of KS4 attainment | First attainment quintile | 17.0 | 23.9 |
| | Second attainment quintile | 16.0 | 20.2 |
| | Third attainment quintile | 15.1 | 14.7 |

| Variable | | Post-matching proportions (%) | |
|---|---|---|---|
| | Fourth attainment quintile | 13.7 | 11.1 |
| | Fifth attainment quintile | 11.3 | 5.8 |
| | Primary - has KS2 data | 21.6 | 22.5 |
| | Unknown | 5.3 | 1.8 |
| | | | |
| **Region** | East of England | 4.5 | 4.6 |
| | East Midlands | 5.8 | 6.1 |
| | West Midlands | 12.8 | 12.7 |
| | London | 42.4 | 41.6 |
| | North East | 4.8 | 4.7 |
| | North West | 8.4 | 8.5 |
| | South East | 7.7 | 7.8 |
| | South West | 3.7 | 3.8 |
| | Yorkshire and the Humber | 10.0 | 10.1 |
| | | | |
| **NQT year** | 2012 | 7.2 | 7.2 |
| | 2013 | 9.4 | 9.7 |
| | 2014 | 13.9 | 13.9 |
| | 2015 | 16.5 | 16.7 |
| | 2016 | 19.6 | 19.4 |
| | 2017 | 16.7 | 16.7 |
| | 2018 | 16.7 | 16.5 |
| | | | |
| **Average school capacity (number of pupils)** | | 1090 | 1078 |

Source: NFER analysis of SWC and Teach First data from 2010/11 – 2019/20.

# 5 Regression analysis

## 5.1 Specification of the overall models

We used regression modelling to estimate the difference in progression and retention rates between Teach First teachers and teachers who trained through other routes. This was to include a regression adjustment in the estimates. The regression adjustment provided an estimate of progression and retention rates that accounted for the effect of any remaining differences in teacher and school characteristics in the matched sample (such as remaining imbalance in age between Teach First teachers and teachers who trained through school- and employment-based routes).

We used a logistic regression model for all the binary progression and retention outcomes. Our regression-adjusted estimates for the binary outcomes (progression and retention) were the

marginal predicted probabilities from the estimated model. The difference between progression and retention rates which we reported in Sections 4 and 5 was the marginal effect (or the difference in predicted probabilities between Teach First and the comparison group).

We included a treatment indicator in the model that took a value of one for Teach First teachers and a value of zero for all other teachers who trained through other routes. This was our main variable of interest. We also included all matching variables as covariates in the regressions in order to perform the regression adjustment accounting for the remaining differences in all of the matching variables. We included NQT year and region fixed effects in all specifications in order to wash out any idiosyncratic effects of year and region on our estimates (and in the salary progression regressions to wash out any remaining effects of inflation after performing the exact match on region and year).

We used a linear regression model for our salary progression estimates which followed a similar specification to the logistic regression models. Our marginal effect estimates were based on the coefficient point estimate of the treatment indicator on salary. In addition to regional fixed effects, we also included an additional variable indicating which of the London weighting regions the teacher is teaching in (Inner London, Outer London, London Fringe and Rest of England). This was to wash out the differential effect of London weighting regions on salary. We included both GOR region and London weighting region in the specification as GOR region offered more granularity for teachers teaching in the Rest of England.

## 5.2 Specification of the interaction term models

The interaction term models (which we used to explore differences in progression and retention rate gaps over different characteristics) followed a similar specification to the overall models. However, we were not able to include all characteristics in these models. This is because we estimated these models using an interaction term, and there were often small sample sizes within each characteristic (e.g. those who were 40 and over when they began their training). Including the full set of characteristics in the modelling led to cases where a variable was perfectly correlated with the outcome and the models were unable to converge.

Accordingly, we selected a subset of variables which explained a statistically significant amount of the variation observed in progression and retention rates to use for the interaction modelling. We assessed statistical significance using a likelihood-ratio test of the full model (including all matching characteristics) on the restricted model (including only a subset of the characteristics). We found that NQT year, region, age, gender, ethnicity, subject and undergraduate degree class jointly explained a statistically significant amount of the variation in progression and retention rates and so were included in the modelling for progression and retention to middle leadership.

Since the rate of progression to senior leadership was even lower than progression to middle leadership, we selected an even further restricted set of covariates for the interaction modelling. For these models we used only region, gender and subject, which jointly explained a statistically significant amount of the variation in the rates of progression to senior leadership.

NFER
National Foundation for Educational Research

# Evidence for excellence in education

**Confidential**



The Mere, Upton Park, Slough, Berks SL1 2DQ
**T:** +44 (0)1753 574123 • **F:** +44 (0)1753 691632 • enquiries@nfer.ac.uk

**www.nfer.ac.uk**

**NFER ref.** TFIR

ISBN: 978-1-912596-74-4