

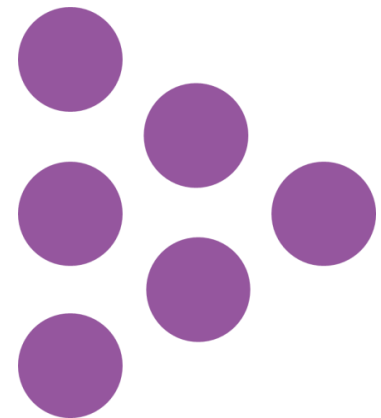
Report

Teacher supply and shortages

The implications of teacher supply challenges for schools and pupils

National Foundation for Educational Research (NFER)

Public



Teacher supply and shortages: the implications of teacher supply challenges for schools and pupils

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The Nuffield Foundation is an endowed charitable trust that aims to improve social wellbeing in the widest sense. It funds research and innovation in education and social policy and also works to build capacity in education, science, and social science research. The Nuffield Foundation has funded this project, but the views expressed are those of the authors and not necessarily those of the Foundation. More information is available at www.nuffieldfoundation.org



Executive Summary

Recruiting and retaining sufficient numbers of teachers is a significant challenge that schools in England currently face. National data on the teacher labour market suggests that the supply of new trainees is insufficient to meet future demand, which implies that schools are likely to face challenges recruiting teachers, perhaps leading to staff shortages.

However, ‘staff shortages’ in practice rarely means classrooms without teachers in them. School leaders have a range of actions they can take to mitigate the impact of recruitment difficulties on the school and on pupils, such as increasing class sizes, filling posts temporarily with supply teachers, employing teachers of lower-than desired quality, deploying non-specialist teachers to teach hard-to-recruit-for subjects and making curriculum changes to reduce the amount of teaching in hard-to-recruit-for subjects (Smithers and Robinson, 2000). Many of these actions may have negative implications for pupils’ education and learning.

This NFER research project, supported by the Nuffield Foundation, aims to build on the analysis of national- and local-level trends in teacher recruitment and retention in England to provide insights on the challenges that school leaders in England face when teacher recruitment becomes difficult.

NFER surveyed nationally-representative samples of senior leaders with responsibility for staffing in autumn 2020 and autumn 2021 to

gather information about their experience of teacher recruitment, retention, and what actions, if any, they had taken to manage shortages. The survey explored how easy or difficult schools reported finding teacher recruitment in different key stages (in the primary phase) and subjects (in the secondary phase) and gathered information about how schools currently deal with shortages in the most challenging subjects. The surveys were conducted during the Covid-19 pandemic, which affected the interpretation of some questions, given the disruption to school operations.

Our analysis of the survey data provides insights into the recruitment challenges schools face and draws out some of their potential implications for pupils’ education and learning. This analysis complements the insights that administrative data can give us about these issues, enhancing understanding of the importance of ensuring sufficient teacher supply.

Schools reported that, alongside budget pressures, insufficient quantity and quality of available applicants for teacher vacancies was a key recruitment challenge

The evidence from the survey analysis paints a picture of two key challenges for school leaders in recruiting high-quality teachers to their school. The first is budget pressures, which schools report being a significant challenge when it comes to recruitment. In the autumn 2020 survey, only 13 per cent of primary school leaders and 27 per cent of secondary school leaders reported that they could have afforded to recruit another teacher, regardless of whether they wanted

to do so or not. The figures were only marginally higher in 2020/21 at 17 per cent and 32 per cent respectively.

The second is the quantity and quality of available applicants for teacher vacancies. This is a particularly acute challenge for secondary schools, where recruitment of trainees to teacher training programmes has been below the target numbers required for many years. School leaders were asked to rate the extent they were ‘unable to assemble a field of quality applicants’ (1 being ‘not at all’ and 8 being ‘to a great extent’). On average, secondary school leaders said 5 and primary school leaders 3.8.

The schools that reported finding it the most difficult to recruit teachers reported that their key recruitment challenges, alongside budget pressures, were being unable to assemble a field of quality applicants and experiencing issues with the suitability/ quality of staff applying.

Under-recruitment of trainees to initial teacher training is associated with schools finding recruitment for teachers of those subjects more challenging

Our analysis of which subjects schools find it most difficult to recruit for when filling vacancies aligns strongly with the extent to which initial teacher training (ITT) targets have been met.

It is clearly not the case that there is a substantial, ready supply of potential or returning teachers waiting to fill the gaps left by insufficient recruitment of new trainees to teacher training courses. Whether or not the ITT recruitment targets are met has material implications for how challenging schools find it to hire teachers the following year.

The worsening post-pandemic teacher recruitment and retention situation – the number of entrants to ITT in 2022 is expected to be well below the level of 2019 and retention levels are returning to pre-pandemic levels – therefore suggests that secondary schools are likely to struggle with filling vacancies in the coming years (Worth and Faulkner-Ellis, 2022).

School leaders take actions to mitigate teacher shortages, but some actions are likely to have detrimental implications for pupils’ education and learning

Schools finding teacher recruitment challenging is also associated with important negative implications for school operations, and therefore likely to be detrimental to pupils’ education and learning.

Faced with a low-quality field of applicants, senior leaders can either hire a teacher that applies but that may be less than ideal, or not hire at all and mitigate the impact of the resulting shortage. Schools that reported finding teacher recruitment the most difficult were considerably more likely than other schools to report recruiting less-experienced-than-ideal teachers, and more likely to employ unqualified teachers than they normally would. Recruiting inexperienced or unqualified teachers may have negative implications for teaching quality.

Deploying non-specialist teachers is a key approach for mitigating shortages, most prevalent in schools struggling with recruitment and schools in disadvantaged areas

However, not hiring a teacher in such a situation also has potential negative consequences for the school and pupils. A key mitigation strategy used in secondary schools when teacher recruitment is difficult is deploying non-specialist teachers to teach certain subjects. Among three key shortage subjects we explored, schools reported high levels of non-specialists teaching maths (45 per cent reporting at least 'some' lessons) and physics (39 per cent reporting at least 'some' lessons), with a smaller but notable proportion of modern foreign languages (MFL) lessons being taught by non-specialists (17 per cent reporting at least 'some' lessons).

Deployment of non-specialist teachers was far more prevalent in schools that reported finding teacher recruitment the most difficult, compared to other schools. In schools that reported finding teacher recruitment the most difficult, 62 per cent reported at least 'some' maths lessons being taught by non-specialists, 55 per cent for physics and 26 per cent for MFL.

There were also notable differences across school disadvantage level in the use of non-specialist teachers in physics and MFL, but not significantly for maths. More than half (57 per cent) of secondary school leaders with the highest level of disadvantage reported that at least some physics lessons were staffed by non-specialists compared to 38 per cent for the lowest level of disadvantage. Around a quarter (28 per cent) of leaders in schools with the highest level of disadvantage reporting that at least some MFL lessons were staffed by non-specialists compared to 16 per cent for schools with the lowest level of disadvantage.

Indeed, the quintile of schools with the highest proportion of pupils eligible for free school meals were far more likely to report that the school being in a deprived area was a significant recruitment challenge affecting their school.

However, there were no significant differences in how easy or difficult schools reported finding teacher recruitment. This may be explained by other research, which has found that the increase in teacher supply during the Covid-19 pandemic may have had a somewhat equalising effect on how schools found teacher recruitment (Allen and Hannay, 2021) by disproportionately benefiting schools with more disadvantaged intakes.

There was some evidence of secondary schools deploying leaders to teach more and using curriculum changes to mitigate teacher shortages

Schools that reported finding teacher recruitment the most difficult were considerably more likely than other schools to have school leaders doing more teaching than usual. This may reduce the school's leadership capacity and, in turn, limit the schools' ability to function well operationally and make improvements to teaching.

Challenges with teacher recruitment may also be having a disproportionate impact on schools with low Ofsted ratings, and school leaders' efforts to improve outcomes. There is likely to be a complex relationship between a school's Ofsted rating and recruitment challenges, rather than a simple effect of an Ofsted rating downgrade making it more challenging to recruit. Nonetheless, our survey data suggests there seems to be an association between a low Ofsted

rating and increased recruitment challenges. These recruitment challenges may exacerbate the challenges of improving the quality of education in the school, whether through leaders doing more teaching reducing leadership capacity, lower-quality teachers being employed, or other related factors.

There was mixed evidence of secondary schools using curriculum changes – such as reducing the offer of triple science or MFL qualifications to some or all pupils – to mitigate teacher shortages. Teacher under-supply was not a key reason for not all pupils studying MFL, even in schools that reported finding teacher recruitment the most difficult. However, sufficient supply of science teachers appears to be an important factor for some schools deciding not to offer triple science to any pupils (alongside pupil interest in studying sciences, which is a major factor reported in the survey).

There was also some evidence of schools that reported finding teacher recruitment the most difficult being more likely than other schools to reduce non-contact time for existing teachers, with implications for their workload, stress, ability to engage in CPD and potentially for retention as a result.

The Government needs to place a renewed focus on improving teacher recruitment and retention to reduce teacher shortages and their impacts on schools

This evidence points to substantial negative implications of the currently growing recruitment and retention challenges in England for pupils' education and learning. Insufficient numbers of teacher trainees in some subjects have real implications for schools, and school leaders' actions to mitigate the resulting shortages cannot fully insulate pupils from the effects.

These negative implications may be acting as a drag on system-wide improvement of pupil outcomes. This is likely to have a negative impact on longer-term skill development and supply, particularly in STEM subjects, and ultimately on long-term economic growth.

We recommend that the Government places a renewed focus on improving teacher recruitment and retention, to ensure a sufficient supply of teachers and in turn support the improvement of pupil outcomes in schools throughout the education system.

1. Introduction

1.1. Motivation

Recruiting and retaining sufficient numbers of teachers is a significant challenge that schools in England currently face. While the Covid-19 pandemic slightly eased recruitment and retention issues in the short-term, the long-standing challenge of ensuring sufficient teacher supply is again growing in significance for schools after the pandemic (Worth and Faulkner-Ellis, 2022).

National data on the teacher labour market suggests that the supply of new trainees is insufficient to meet future demand, which implies that schools are likely to face challenges recruiting teachers, perhaps leading to staff shortages. However, ‘staff shortages’ in practice rarely means classrooms without teachers in them. School leaders have a range of actions they can take to mitigate the impact of recruitment difficulties on the school and on pupils, such as increasing class sizes, employing teachers of lower-than desired quality, filling posts temporarily with supply teachers, deploying non-specialist teachers to teach hard-to-recruit-for subjects and making curriculum changes to reduce the amount of teaching in hard-to-recruit-for subjects (Smithers and Robinson, 2000). Many of these actions may have negative implications for pupils’ education and learning.

This NFER research project, supported by the Nuffield Foundation, aims to build on the analysis of national- and local-level trends in teacher recruitment and retention in England to provide insights on the

challenges that school leaders in England face when teacher recruitment becomes difficult.

NFER surveyed nationally-representative samples of senior leaders with responsibility for staffing in autumn 2020 and autumn 2021. The aim of the surveys was to gather information about senior leaders’ experience of teacher recruitment, retention and what actions, if any, they had taken to manage shortages. The surveys also explored the level of difficulty schools found teacher recruitment in different key stages (primary) and subjects (secondary) and gathered information about how schools currently deal with shortages in the most challenging subjects.

Both surveys were conducted during the Covid-19 pandemic. Many of the survey questions were adapted to fit the context of the disruption to education during the pandemic and others were included to try to understand the effect of the pandemic on schools. However, there was no similar survey data from before the pandemic for many questions, making any specific impacts of the pandemic challenging to infer unless through respondents’ own perceptions.

Our analysis of the survey data provides insights into the recruitment challenges schools face and draws out some of their potential implications for pupils’ education and learning. This analysis complements the insights that administrative data can give us about these issues, enhancing understanding of the importance of ensuring sufficient teacher supply.

1.2. Previous literature

1.2.1. Surveys to understand how schools cope with teacher shortages

Previous research has shown that, when faced with significant challenges to teacher recruitment, school leaders have a range of strategies to employ. Smithers and Robinson (2000) used interviews and a survey with school leaders to provide insights into the strategies they used to mitigate teaching staff shortages during a period of supply challenge in the late 1990s.

Some of the routes that schools took when they were unable to fill vacancies were to increase class sizes, reduce teacher non-contact time and/or increase teaching outside of teachers' subject specialism. While these strategies were commonly used and allowed schools to address recruitment difficulties, these approaches increase the burden on existing teachers and have negative implications for their workload.

Using temporary and short-term supply teachers to fill gaps was also reported to be common for addressing teacher shortages. However, this approach comes with extra costs and also concerns over quality, particularly of supply teachers.

Schools also reported changing their recruitment practices. Proactive and pre-emptive recruitment, lack of specificity in job vacancies and taking on applicants without adequate skills and then training them on the job were all changes schools reported having made to attempt to ease the recruitment process and increase the chances of filling their vacancies.

1.2.2. Proxies for teacher shortages from administrative data

A number of different proxy measures of teacher shortages are available from a range of administrative data sources, which have been used to quantify and assess teacher shortages by different researchers. A key aim of the NFER senior leader survey described in this report is to complement the insights derived from these measures.

One such measure of teacher shortages in England is to use administrative data on the number of vacancies and temporarily-filled teaching posts in the School Workforce Census (SWC) (DfE, 2022a). The SWC measures vacancies and temporarily-filled teaching posts as of November, which is not a usual time to have a vacancy unless either a teacher has left suddenly in the autumn term, or the school struggles to recruit in the previous recruitment window (which typically is most active from March to July). However, as highlighted in Smithers and Robinson (2000), measures are often employed to ensure that vacancies do not remain open for schools during the rest of the academic year. Hence data on vacancies alone may not reveal the full extent of teacher shortages across the country.

There are several administrative data sources used to quantify the extent that different strategies may be used to mitigate teacher shortages. DfE collects and publishes data on class sizes, which may rise if teacher supply becomes challenging (DfE, 2022b).

Another strategy is deploying teachers to teach subjects outside of their specialism. The extent to which this is done by schools can be measured using SWC data, by identifying the subjects that teachers

teach and whether the teachers have relevant degree-level qualifications in that subject. The DfE and other researchers have used the data to measure the extent to which different subjects are taught by non-specialist teachers (Sibieta, 2018).

However, limitations exist with this methodology. First, missing data on teaching hours and qualifications means it can be measured with error and without full national coverage. Second, the mapping of degree subjects to subject knowledge for teaching is unlikely to capture all subject-relevant knowledge teachers might have.

The Department for Education created a school-level measure of teacher supply challenges (Supply Index), which attempted to identify schools that may be struggling with recruiting and retaining teachers. It was a composite measure based on vacancies and temporarily-filled posts, numbers of teachers entering and leaving, staff contracted temporarily, loss of experience through teachers leaving and specialist teachers (based on qualifications, as described above) (DfE, 2017).

Follow-up work for verification confirmed that many of the schools identified as having a high Supply Index reported that they had significant problems with recruitment, retention or both. A notable proportion of those identified as having a low Supply Index also report that they had significant problems, but a smaller proportion than the schools with high values. Therefore, the methodology may have identified a *group* of schools that, on average, experienced more teacher supply issues than other schools, but not necessarily to accurately identify individual schools with the most issues. The

research also identified some circumstances where the index methodology did not work as well, such as for small schools.

In summary, administrative data is useful for highlighting national trends using some proxies for teacher shortages but does not give a completely accurate or comprehensive picture of the issues. Survey data can therefore be useful to complement the picture from administrative data and explore the issues in greater depth, but has its own limitations, including lacking coverage at large scale.

1.3. Structure of this report

Section 2 describes the school leader survey and the methodology used to analyse the data. Section 3 presents the type and magnitude of recruitment challenges schools reported having faced over the last two years. Section 4 explores some approaches school leaders have taken to mitigate the impact of teacher shortages on their schools. Section 5 outlines the differences in difficulty school leaders reported facing in recruiting teachers to different roles, key stages and subjects. Section 6 explores the recruitment challenges and shortage mitigation approaches used for three key subjects (maths, physics and modern foreign languages (MFL)), and section 7 explores the extent to which curriculum changes have been used to mitigate teacher shortages. Section 8 explores the differences in recruitment difficulties and challenges across different types of school. Section 8 draws out the conclusions and key implications from our findings.

2. Methodology

2.1. Survey background

NFER developed an online survey instrument in summer 2020, piloting it with a primary school headteacher and a secondary school headteacher. The purpose of piloting the survey instrument was to check that respondents interpreted the survey questions and instructions correctly. The process involved a researcher listening to the senior leader as they completed an online version of the questionnaire. Participants were asked to sound out their thoughts as they read through and answered each question in turn.

Supplementary questions were asked about the clarity of the questionnaire at the end of this process. A number of comments were made in response to piloting the survey instrument and resulting amendments were made to the survey.

Primary and secondary schools in England were contacted about participating in the survey by email. Wherever possible this email was directed to the headteacher or deputy headteacher and those that went to a generic school email address were marked for the attention of the headteacher. Emails were sent to a representative, randomly drawn sample of schools, selected to ensure that the opportunity to complete the survey was offered to senior leaders from schools across all levels of free school meal eligibility, school types, and

regions across the country. Survey responses were also achieved by using the School Zone and Teacher Voice panel surveys¹.

After all the data had been collected and processed, we applied statistical weights to the respective samples of primary and secondary school responses to ensure the findings were nationally representative (a more detailed description of the weighting process is in the appendix).

The survey asked senior leaders to reflect on their experience of recruitment, retention and staffing in the previous academic years, which were 2019/20 for the autumn 2020 survey and 2020/21 for the autumn 2021 survey. There was some crossover in the samples: many responses to the autumn 2021 survey were received from senior leaders in schools that had also responded to the autumn 2020 survey. However, there were also responses from school leaders that only responded to one of the surveys.

The majority of survey responses were carried out by the targeted senior leader positions, 57 per cent of responses came from headteachers and 31 per cent by deputy/assistant headteachers, the remaining 12 per cent of surveys were completed by other senior leadership roles and school business managers. In total, we received responses from 863 senior leaders for the 2019/20 academic year, and 848 responses for the 2020/21 academic year.

¹ <http://www.schoolzone.co.uk/>
<https://www.nfer.ac.uk/publications-research/teacher-voice-omnibus-survey>

The survey questions covered a number of topics, including issues relating to staffing and recruitment during the Covid-19 pandemic. This report focuses specifically on analysis of the questions relating to the challenges of teacher recruitment and retention. We also explore the responses to questions regarding the issues schools faced with staff shortages, generally and in some shortage subjects.

We used data on school-level characteristics to analyse differences in the recruitment and staffing experiences of different types of schools. These characteristics were:

- Type of school – schools were categorised into one of three types, a local authority-maintained school, an academy that is a single academy trust (SAT) or an academy in a multi-academy trust (MAT).
- Geographical location – this includes both the region the school is located in and the type of travel to work area (TTWA). TTWAs are geographical areas developed by the Office for National Statistics (ONS) using census data, which constitute areas where most people both live and work (ONS, 2016). They can therefore be seen as relatively self-contained labour market areas. We categorise TTWAs into five area types – London, large urban, medium-sized urban, small non-coastal and small coastal area. The appendix contains more information on the classification of these areas.
- Ofsted rating – schools are rated on a four-point scale: ‘outstanding’, ‘good’, ‘requires improvement’ and ‘inadequate’. Due to the small sample of schools in our survey that received

an inadequate rating we combined schools that received ‘requires Improvement’ or ‘inadequate’ ratings into one group.

- Level of pupil disadvantage – this is defined by the percentage of pupils in the school that have been eligible for free school meals (FSM) in the past six years. We created a quintile variable for primary and secondary schools, respectively.

2.2. Recruitment ease measure

A key question this survey was designed to provide insight on was how easy or difficult schools found teacher recruitment during the academic year. First, senior leaders were asked which teaching posts their school had recruited for during the previous academic year. The options for the types of teaching posts differed for primary and secondary schools. For primary schools, the options were teaching posts across school key stages, from early years foundation stage to key stage 3 (included for middle deemed primary schools). For secondary schools, the options were different curriculum subjects. The option of recruiting for a senior leader post (e.g. deputy or assistant headteacher) was also included for both primary and secondary schools.

For every type of post that senior leaders indicated that they had recruited for in the academic year, senior leaders were asked ‘How easy or difficult was it to recruit to the following posts...’. Senior leaders were asked to rate the difficulty on a scale of one to eight, where one indicated ‘very difficult’ and eight indicated ‘very easy’.

We used the responses to this question to create a measure of recruitment ease using an item response theory (IRT) model, which allow individual traits to be inferred from responses to the survey items. Using this methodology allowed us to create a single measure of school recruitment ease, from the ratings senior leaders gave for different key stages/ subjects. A key strength of the IRT model is that it did not rely on schools reporting difficulty measures for every key stage/ subject, and could estimate a measure for schools and subjects based on only data about the key stages/ subjects that each school had recruited for.

We used the IRT model to estimate recruitment ease scores for schools and for individual key stages/ subjects using a common scale. School-level scores represented how easy or difficult the school found recruitment, compared to other schools in the sample. Another key strength of IRT is that the resulting school-level scores accounted for the mix of key stages/ subjects the school was recruiting for, and how easy or difficult those key stages/ subjects were to recruit for generally. Similarly, the subject-level scores represented how easy or difficult recruitment for teachers of that subject was, while accounting for the mix of schools that were recruiting for that subject, and how easy or difficult they were finding it to recruit.

The IRT model generated school-level recruitment ease scores that we rescaled onto a score running between zero and 100. Each school's score was scaled relative to the school with the lowest score (i.e. found recruitment the most difficult) that was given a score of 0, and the school with the highest score (i.e. found recruitment the easiest) that was given a score of 100. Key stage/ subject-level recruitment ease scores were similarly scaled onto the same zero to 100 scale.

From the school-level scores, we created a quintile measure for school-level recruitment ease within each school phase and academic year for further analysis. These quintiles were used in the analysis to compare the schools that reported finding recruitment the most difficult and the least difficult.

Across both primary and secondary schools in our sample, there were no significant differences between the average recruitment ease score across the two academic years the survey was conducted over.

The recruitment ease measure has several important limitations. The measure is necessarily subjective, and when school leaders were asked to rate the difficulty of recruitment their school faced, they would likely have considered the overall feel for recruitment in that year compared to how well the school has recruited in the past. School leaders who had recently served in other schools may also draw on that experience.

This means that the recruitment ease score may already factor in ease or difficulty that is inherent in the school context the leaders is working in. A judgement of how easy or difficult recruitment was, may be rated relative to a leader's expectations, which might differ between contexts. As a result of this, comparisons of recruitment ease across different types of schools and geographies may not be as reliable as comparisons of recruitment ease across subjects and teacher types. The latter are based on scores given by the same respondent and are therefore very likely to be subject to the same expectations, and therefore more comparable.

3. Recruitment challenges reported being faced by school leaders

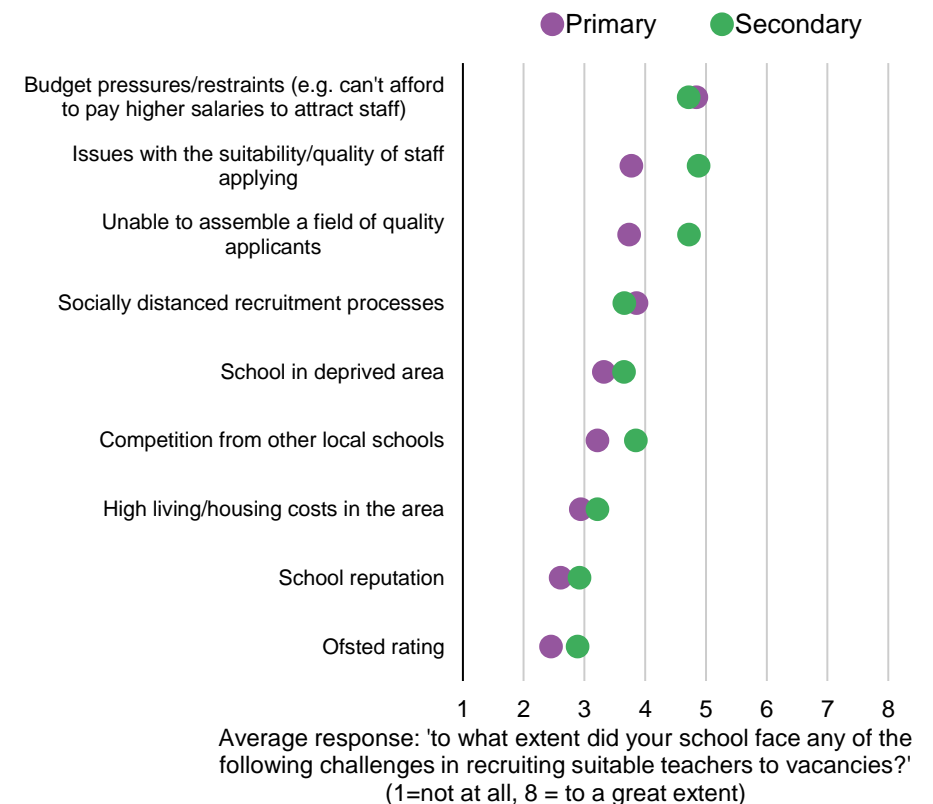
3.1. Recruitment challenges

We asked senior leaders about the extent to which they perceived facing a number of different recruitment challenges during the previous academic year. Respondents were asked to rate each recruitment challenge on a scale of one to eight, with one representing ‘not at all’ and eight representing ‘to a great extent’.

The recruitment challenges presented to senior leaders spanned a range of factors that could potentially affect teacher recruitment. They included financial constraints that may limit the school’s ability to afford to employ additional teachers or pay higher salaries to attract staff (‘budget pressures/ restraints’) and the quantity and quality of applicants to teaching vacancies (‘unable to assemble a field of quality applicants’/ ‘issues with the suitability/quality of staff applying’). As the Covid-19 pandemic imposed limits on the methods of recruitment that schools could use during the 2019/20 and 2020/21 academic years, one of the options was ‘socially distanced recruitment processes’ (Lucas, 2021). Some geographical factors and school characteristics that may impact on recruitment were also presented as options.

Figure 1 presents the average responses given by senior leaders in primary and secondary schools to each recruitment challenge in the 2019/20 survey.

Figure 1 Budget pressures and issues with the quantity and quality of applicants were the most pressing recruitment challenges schools reported facing in 2019/20



Source: NFER Senior Leader Survey – autumn 2020. Primary N = 353. Secondary N = 301.

Budget pressure was a significant recruitment challenge that both primary and secondary schools reported facing. Senior leaders in primary schools reported finding this the most significant challenge to recruitment, and it was a major challenge reported by senior leaders in secondary schools.

Senior leaders were also asked in the survey: ‘could your school have afforded to recruit one or more additional teachers during the academic year, regardless of whether you wanted to do so or not?’. In the 2019/20 survey, only 13 per cent of primary schools and 27 per cent of secondary schools reported that they could have afforded to recruit another teacher. This was slightly higher in the 2020/21 survey: 17 per cent of primary schools and 32 per cent of secondary schools reported that they could have afforded to recruit another teacher. This is a further indication that schools were significantly restricted by their budgets in recent years. The 2010s was a decade in which schools experienced real-terms cuts to spending per pupil in England (Sibieta, 2022).

A key recruitment challenge that senior leaders reported was issues relating to the quantity and quality of applicants to teaching vacancies. These challenges were of most significant concern for senior leaders in secondary schools, but were also significant for senior leaders in primary schools. It found that many secondary schools are facing recruitment challenges. School leaders were asked to rate the extent they were ‘unable to assemble a field of quality applicants’ (1 being ‘not at all’ and 8 being ‘to a great extent’). On average, secondary school leaders said 5 and primary school leaders 3.8.

This difference by phase is likely to be associated with the greater challenges at a national level in attracting enough new trainees to meet the future need for teachers. The number of registered primary trainees in 2018/19 – the cohort that would have been applying for posts during the 2019/20 academic year – was three per cent above the required target. In contrast, the number of registered secondary trainees in 2018/19 was 17 per cent below the required target, with recruitment in many subjects even lower. Under-supply of trainees is likely to lead to many schools being unable to assemble fields of quality applicants and experiencing issues of suitability among the applicants applying.

Socially distanced recruitment processes were a notable challenge to recruitment for both primary and secondary schools in the 2019/20 academic year.

For the full sample of primary and secondary schools, other recruitment challenges were not reported as significantly affecting recruitment. However, for schools with certain characteristics, additional recruitment challenges were identified by senior leaders.

Few schools overall reported that the school’s Ofsted rating was a significant challenge to recruitment, with the average primary school rating it as 2.5 and secondary schools 2.9. However, senior leaders from both primary and secondary schools with ‘requires improvement’ or ‘inadequate’ Ofsted ratings identified their Ofsted rating as a highly significant challenge to recruitment, with an average rating of 5.7 for primary schools and 5.0 for secondary schools. For schools with an

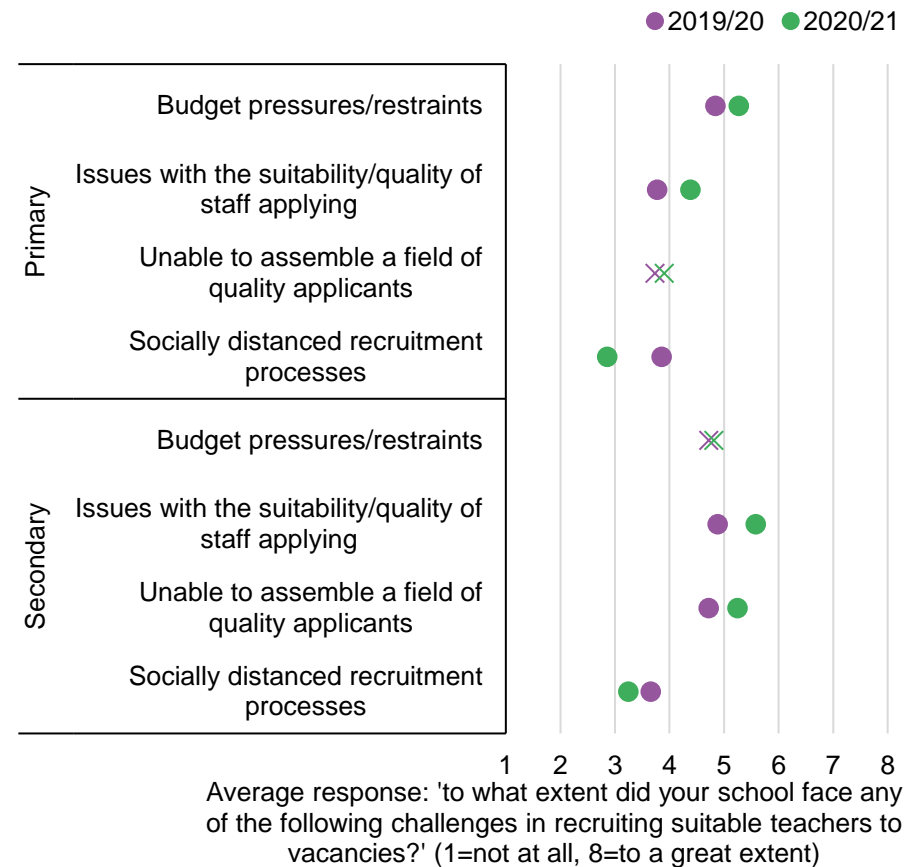
‘outstanding’ or ‘good’ rating, Ofsted rating was not identified as a notable challenge to recruitment.

Similarly, the quintile of schools with the highest proportion of pupils eligible for free school meals (FSM) were far more likely to report that the school being in a deprived area was a significant recruitment challenge affecting their school. Primary schools with the highest FSM levels rated the factor as, on average 6.0, compared to 1.4 in the schools with the lowest FSM levels. Secondary schools with the highest FSM levels rated the factor as, on average 5.9, compared to 1.6 in the schools with the lowest FSM levels. There was also a substantial difference in the extent to which schools with the highest and lowest FSM levels reported ‘school reputation’ as being a challenge to recruitment.

Figure 2 shows the changes in how schools rated some of the recruitment challenges between the 2019/20 and 2020/21 academic years. Where the recruitment challenge ratings are denoted with crosses, this indicates that the year-on-year change was not statistically significant.

For secondary schools, issues surrounding the quality and quantity of applicants affected schools to a greater extent in 2020/21 than they did during the 2019/20 year. While schools do not exclusively recruit candidates from initial teacher training courses, the increases in issues relating to the quality and quantity of applicants may be surprising since the number of entrants to postgraduate teacher training increased by 23 per cent from the 2019/20 cohort to the 2020/21 cohort (DfE, 2022c).

Figure 2 Issues relating to the quality and quantity of applicants became a greater issue for both primary and secondary schools



Source: NFER senior leader survey – autumn 2020 and 2021. Primary 2020 N = 358. Secondary 2020 N = 313. Primary 2021 N = 385. Secondary 2021 N = 281.

However, the quality and suitability of applicants becoming a greater challenge for schools may have related to the disruption the Covid-19 pandemic caused to initial teacher training. In a separate survey question, school leaders were asked to rate their level of agreement on a scale of one to eight with whether they 'were reluctant to employ NQTs for a September 2021 start because the disruption to initial teacher training resulted in them having less experience in schools', where one was 'not at all' and eight was 'to a great extent'. For the majority of schools, this was not perceived to be a significant issue, with an average rating of 3.6 for primary schools and 2.7 for secondary schools. Nonetheless, one in eight primary schools rated this challenge with the highest score of eight, indicating it affected their school 'to a great extent'. While senior leaders clearly had differing opinions over the extent to which disruption to teacher training led to candidates of lower experience, there is some evidence for this being a reason some schools perceived applicants to be of lower quality, especially for primary schools. This is important context for considering how generalisable some of the findings on teacher recruitment from this survey are to periods outside of the pandemic.

For primary schools, budget-related issues affected schools to an even greater extent in 2020/21 than the previous year and remained the greatest recruitment challenge. Issues with the quality of applicants also became a greater issue for primary schools in the 2020/21 academic year.

Both primary and secondary schools found socially distanced recruitment practices less of a challenge in the 2020/21 academic year. Across the 2020/21 academic year, social distancing restrictions

were somewhat reduced and this allowed schools to engage in more face-to-face and on-site interviewing, rather than doing so remotely. In 2020/21, 84 per cent of school leaders reported that they used face-to-face interviews during their recruitment process compared to only 31 per cent of schools in the 2019/20 survey.

There were no significant changes to other recruitment challenges between the 2019/20 and 2020/21 academic years.

3.2. Differences in the recruitment challenges faced by schools reporting relatively easy or difficult recruitment situations

We use the recruitment scale score explained in section 2.2 to explore the extent to which the recruitment challenges reported by schools that found recruiting teachers the most difficult (bottom 20 per cent on the recruitment ease measure) differed to those reported by schools that found recruiting relatively easier (the top 20 per cent).

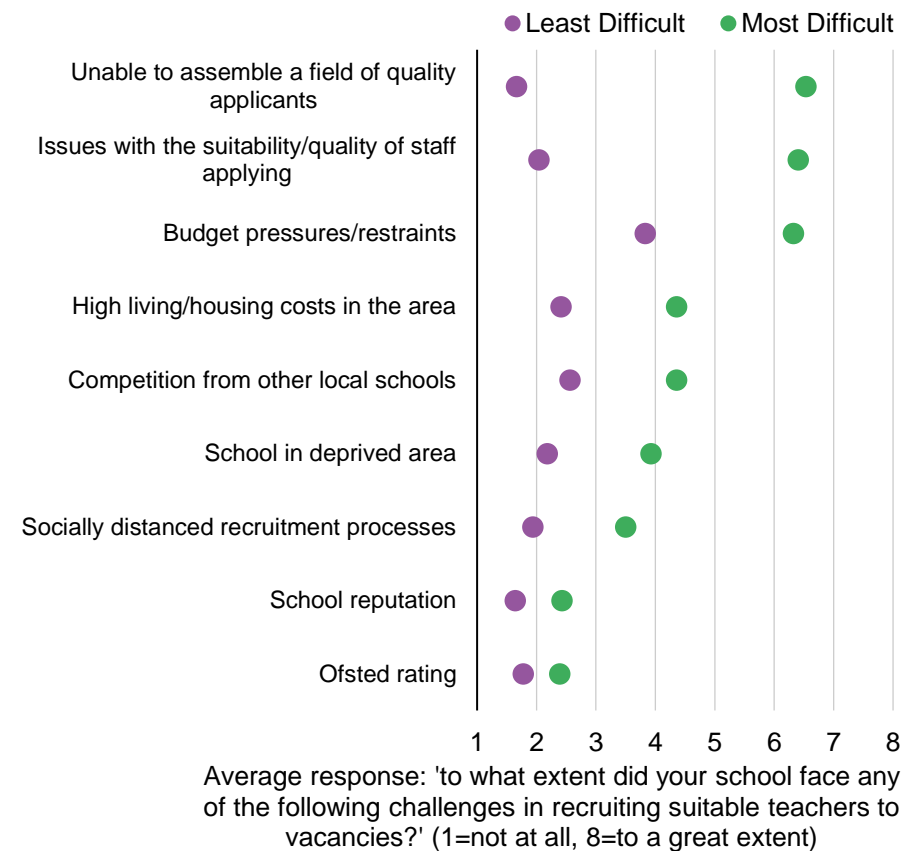
Figures 3 (primary) and 4 (secondary) compare how senior leaders from the top and bottom recruitment ease quintiles, respectively, rated the recruitment challenges. These charts present the findings from the most recent 2020/21 survey wave, but both years followed a similar pattern.

For both primary and secondary schools, all the recruitment challenges were rated as a more significant issue for the schools that found recruitment the hardest compared to the schools that found recruitment the easiest. However, for both primary and secondary schools, the most significant differences between the two groups of schools were

evident for issues relating to the quantity and quality of applicants to vacancies.

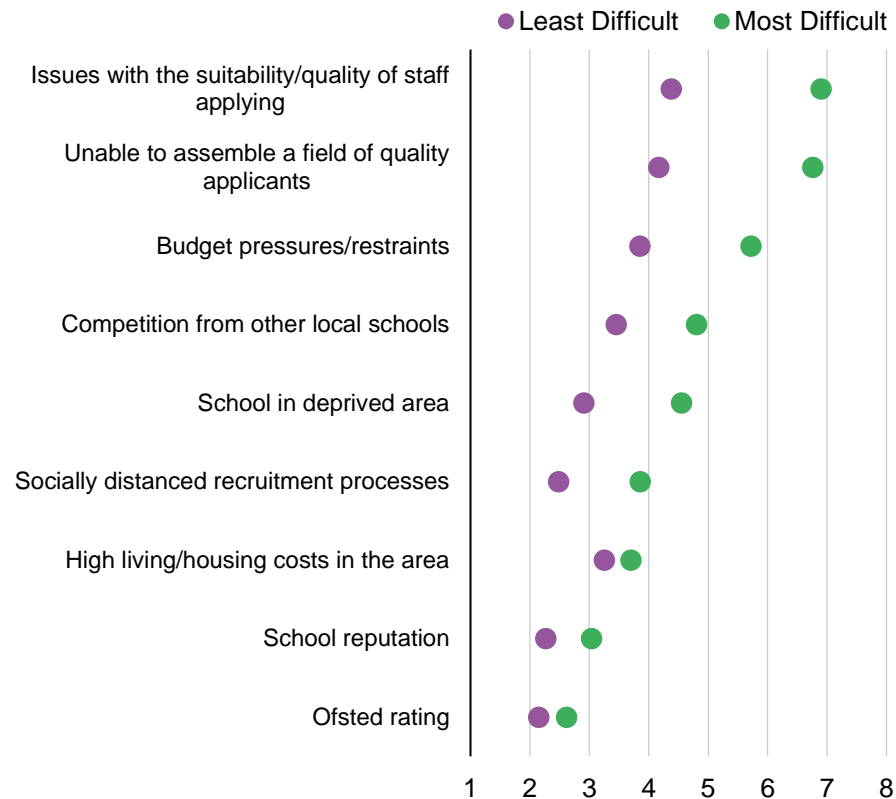
This suggests that the quantity and quality of applicants to vacancies is the primary challenge linked to an overall sense of recruitment difficulty. While other challenges affecting recruitment, such as budget pressures or school/ geographical context issues, may influence school leaders' overall sense of the challenge to some extent, it is the response they get to vacancies that is the most significant.

Figure 3 Issues relating to the quantity and quality of staff applying seemed to be the strongest drivers of recruitment difficulty for primary schools



Source: NFER senior leader survey – autumn 2021. N = 147.

Figure 4 Issues relating to the quantity and quality of staff applying were the strongest drivers of recruitment difficulty for secondary schools



Average response: 'to what extent did your school face any of the following challenges in recruiting suitable teachers to vacancies?' (1=not at all, 8=to a great extent)

Source: NFER senior leader survey – autumn 2021. N = 104.

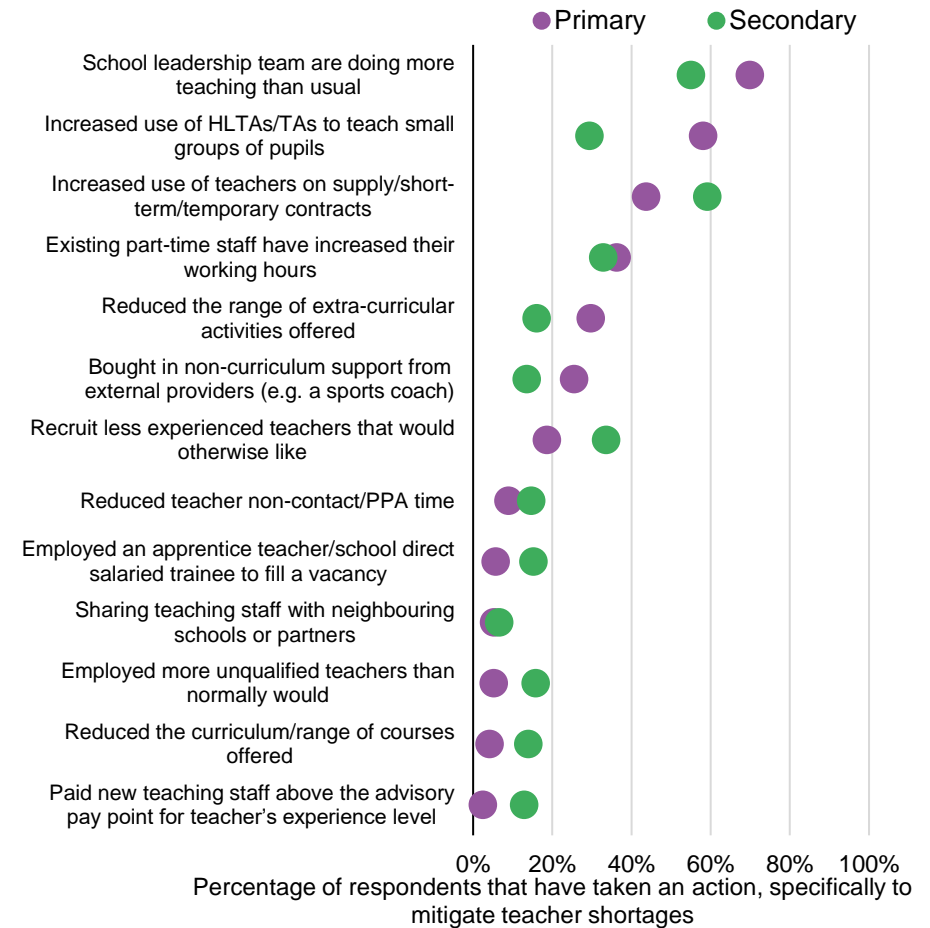
4. Approaches for mitigating teacher shortages

We asked senior leaders about the extent to which they had taken any of a range of potential actions to mitigate the impact of teacher shortages. The aim of the question was to explore what approaches school leaders take to mitigating the issues of under-recruitment and low retention that might arise from the availability of teachers in the labour market.

However, it is important to note that the survey was conducted during the Covid-19 pandemic, which also raised more immediate staffing issues that school leaders needed to manage. These issues may have influenced senior leaders' responses to this question. For example, staff absence due to illness or self-isolation meant that even if schools were well-staffed with permanently employed teachers, they may have needed to use some of these strategies temporarily.

Figure 5 shows that the most commonly-used actions by primary senior leaders to mitigate shortages were school leaders doing more teaching than usual, increased use of teaching assistants and increased use of temporary or supply teachers. School leaders doing more teaching and increased use of temporary, or supply staff were also actions that many secondary senior leaders reported taking, but fewer reported increased use of teaching assistants. The primary sector employs far more teaching assistants than secondary schools, which likely explains this.

Figure 5 Senior leaders reported taking a range of actions when mitigating teacher shortages



Source: NFER senior leader survey – autumn 2021. Primary N = 465.

Secondary N = 262.

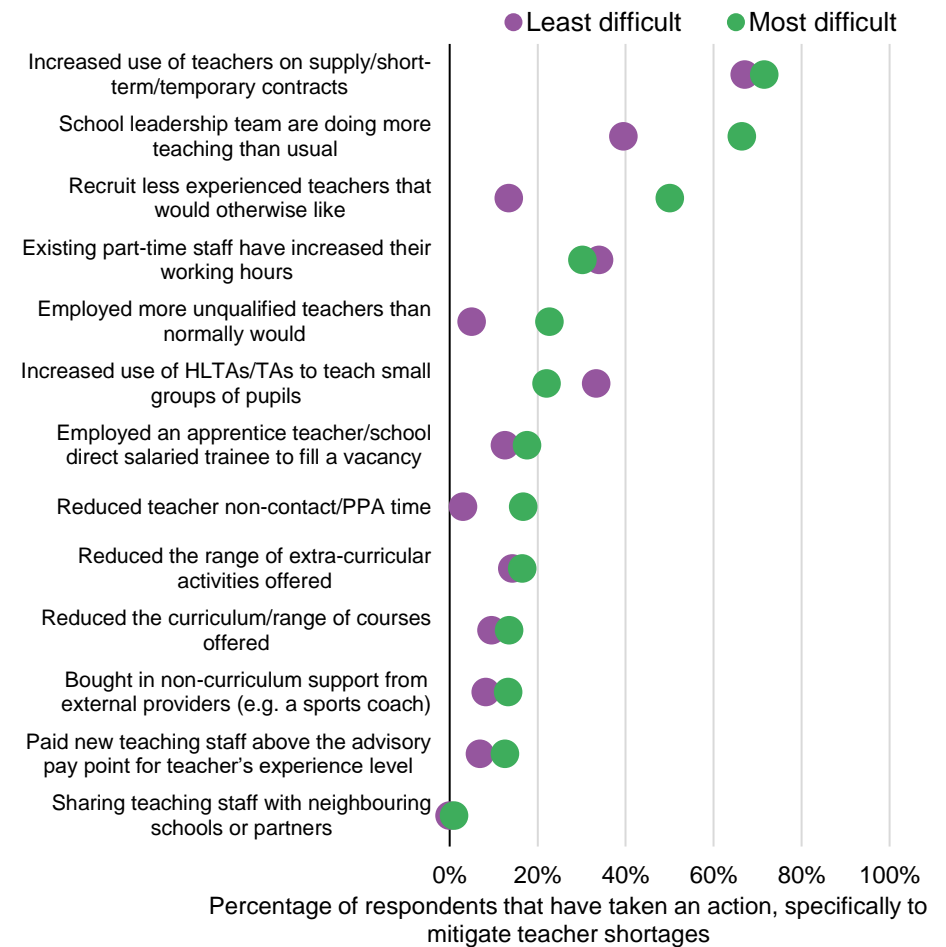
Asking part-time teachers to increase their working hours was also an action taken by around a third of both primary and secondary senior leaders. Among secondary senior leaders, around a third reported that they had recruited less experienced teachers than they would otherwise have liked.

The proportions of senior leaders that reported they reduced teachers' planning, preparation and administration (PPA) time, employed apprentice or salaried trainee teachers, shared teaching staff with other schools, used unqualified teachers, made curriculum changes and paid staff above the recommended advisory point to mitigate shortages were low, particularly among primary senior leaders.

Figure 6 shows the same measures, for secondary senior leaders only, split between schools that reported finding recruiting teachers the most difficult and schools that reported finding recruiting relatively easier. This data indicates that some actions were taken equally by both schools that found it relatively easy and relatively difficult to recruit teachers. These actions may perhaps be ones that were disproportionately taken to deal with Covid-19 staffing issues, since most schools experienced these issues during the pandemic. These actions included increasing the use of temporary or supply teachers and asking part-time teachers to increase their hours.

However, some actions were taken disproportionately by schools that tended to find recruiting teachers relatively more difficult compared to schools that tended to find recruiting less difficult. These actions may be those that relate more to persistent supply and shortage issues relating to recruitment difficulty.

Figure 6 Senior leaders reported taking a range of actions to mitigate teacher shortages



Source: NFER senior leader survey – autumn 2021. N = 251.

The actions that differed depending on how difficult the secondary school leader reported finding recruiting teachers included the school leadership team doing more teaching than usual (66 per cent of schools that found recruitment most difficult, compared to 40 per cent among those that found it the least difficult) and recruiting teachers with less experience than they would otherwise like (50 per cent of schools that found recruitment most difficult, compared to 13 per cent among those that found it the least difficult).

This suggests that schools that perceive the teacher recruitment environment to be challenging may fill their vacancies by employing teachers that are less experienced than they would ideally like, likely as a result of a depleted field of applicants in terms of quality and/or quantity.

A potential implication of teacher shortages being mitigated by school leaders doing more teaching than usual is that deploying leaders to teaching assignments reduces the school's leadership capacity. This in turn may limit the schools' ability to function well operationally, make improvements to teaching and support teachers to create a positive learning environment.

5. Recruitment ease by key stage, staff type and subject

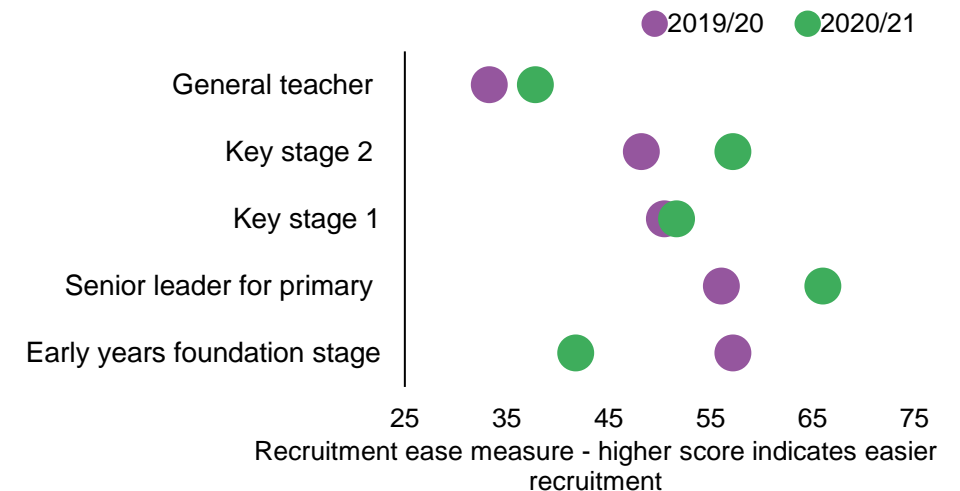
Figure 7 presents the recruitment ease measure, estimated from an IRT model, as explained in section 2.2, at the level of key stage/ type of teacher for primary schools. Figure 8 presents the same data at the subject level for secondary schools. The key stages/ subjects are ordered from the most difficult to the easiest type of teacher/subject to recruit for in the 2019/20 academic year.

For the types of teachers recruited by primary schools, there were some differences in how difficult certain teachers were to recruit for. General teachers were reported to be among the easier types of teacher for primary schools to recruit in both years. However, taken together across the two years of data, there were no major differences between the level of recruitment ease for teachers in the three main key stages that primary schools recruit: Early Years Foundation Stage, Key Stage 1 and Key Stage 2.

There has been much recent concern expressed in the education sector about the supply of school leaders, particularly during the Covid-19 pandemic as school leaders managed new and significant pressures (Greany *et al*, 2021; NAHT, 2021). We included 'senior leaders (i.e. assistant and deputy headteachers)' as a recruitment category, to measure the ease or difficulty of recruiting senior leaders on the same scale as the different key stages and secondary subjects. The data suggests that relative to classroom teachers of various key stages and subjects, there is little evidence that schools find recruiting

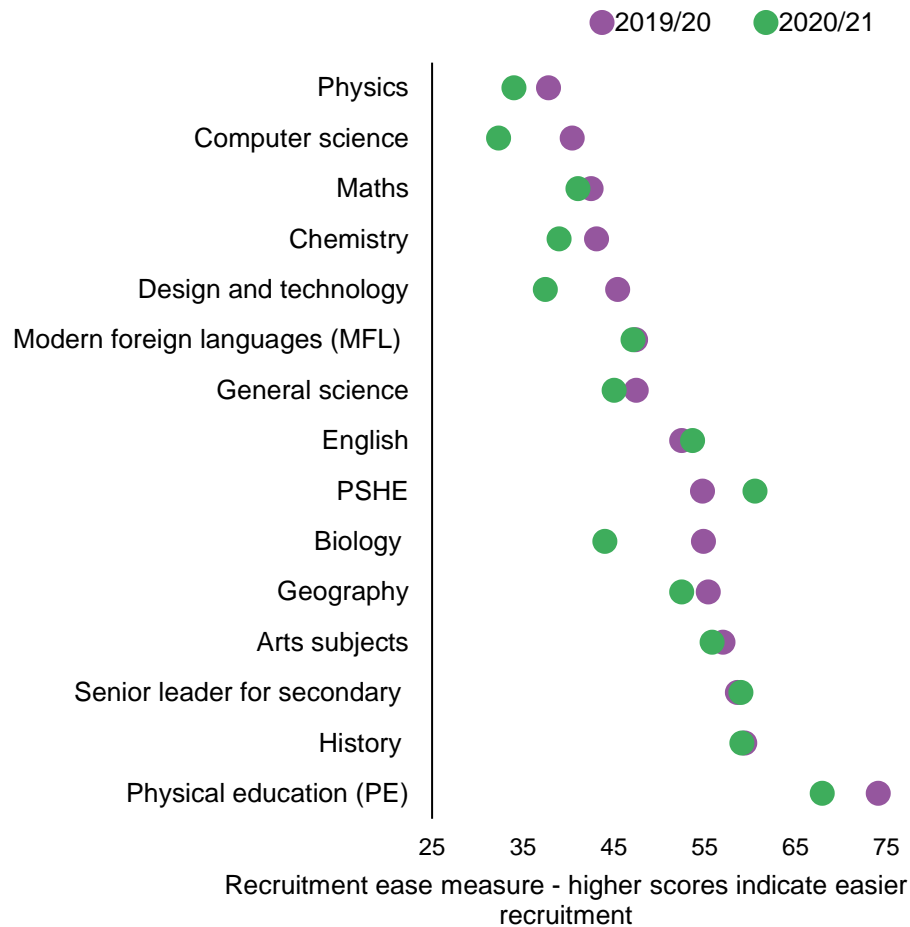
senior leaders more difficult than teachers. Indeed, for secondary schools, schools reported that recruiting senior leaders was similar in ease to recruiting the easiest subjects, such as history teachers. It is important to note that some schools may find recruiting senior leaders more challenging than others. It also does not measure the ease or difficulty of recruiting headteachers, who have been of particular recent concern. We did not include headteachers as an option in the senior leader survey as they are usually appointed by governing boards and/or trust leaders.

Figure 7 Senior leaders were easier to recruit for than most teaching posts for primary schools



Source: NFER senior leader survey – autumn 2020 and 2021. 2020 N = 376. 2021 N = 392.

Figure 8 There were substantial differences in how easy or difficult schools found recruiting across subjects



Source: NFER senior leader survey – autumn 2020 and 2021. 2020 N = 313. 2021 N = 299.

For secondary schools, physics, maths, computer science and chemistry were reported to be the most difficult subjects to recruit for. In contrast, arts subjects, history and PE were reported to be among the easiest to recruit for. Where there were differences in the ease of recruitment reported by school leaders between the two years, it generally became easier in 2020/21. This was likely driven by the Covid-related increase in the number of entrants from ITT on the teacher labour market in 2020/21. For example, there was a 53 per cent increase in the number of trainees for design and technology in entering ITT in 2020 compared to the previous year. The differences between years may also have been influenced by other factors such as changes in teacher retention rates.

These findings on secondary subjects align with data on the number of registrations to teacher training programmes, which also identify physics, computer science and maths as being significant shortage subjects, and PE supply being relatively plentiful relative to need. This suggests that subjects failing to meet their teacher training recruitment targets, especially where targets are repeatedly missed for many consecutive years, has substantial implications for the availability of applicants to teacher vacancies in those subjects and makes teacher recruitment more challenging for schools.

This point – that the same subjects that struggle to recruit enough trainees are also the ones for which schools report difficulty recruiting to fill vacancies – may seem tautological. However, schools do not exclusively recruit teachers straight from training courses, as they also hire teachers who move school and returners. It is reasonable to consider whether there is a substantial, ready supply of potential or

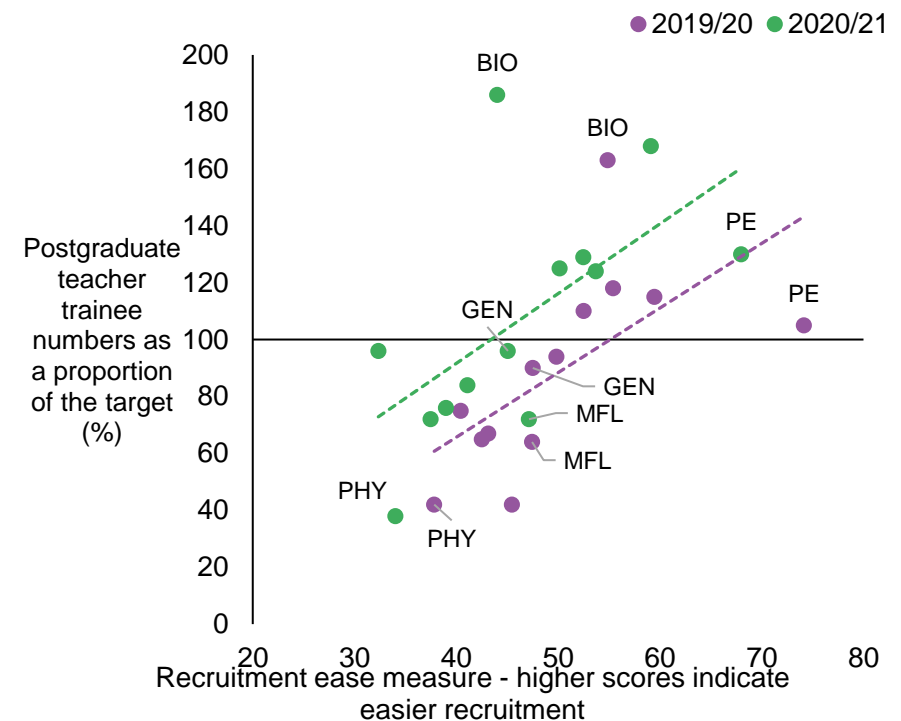
returning teachers waiting to fill the gaps left by insufficient recruitment of new trainees to teacher training courses.

However, newly-qualified teachers represent a large share of new entrants to the state-funded sector. Indeed, this survey data suggests that there is not such a ready supply of other sources of teachers, despite there being substantial numbers of inactive teachers of working age². This is an important relationship to confirm in the data because it supports the idea that failing to meet the ITT recruitment targets has important implications for the teacher labour market and for schools' recruitment efforts.

Figure 9 shows the relationship between our recruitment ease measure and the number of postgraduate teacher trainees as a proportion of the target required for different subjects. Schools will recruit trainee teachers during the academic year to start in the following academic year, and so we compare our recruitment ease measure and the trainee recruitment compared to target in the same academic year.

For both academic years, there is a clear positive relationship between these two measures. In general, the subjects that outperformed their ITT recruitment target tended to have a higher recruitment ease score, and the subjects that did not meet their ITT recruitment target tended to have lower recruitment ease scores.

Figure 9 The subjects that did not meet their ITT recruitment targets were more difficult for schools to recruit for



Source: NFER senior leader survey – autumn 2020 and 2021. 2020 N = 313. 2021 N = 299.

Note: PHY=physics, BIO=biology, GEN=general science, MFL=modern foreign languages, PE=physical education.

further 106,000 teachers with qualified teacher status who have never been in service.

² According to the DfE, in 2018 there were 260,000 qualified teachers of working age who were out of service but had previously been in service and a

Between 2019/20 and 2020/21 the lines of best fit stayed very similar in slope, suggesting the relationship between the two was quite stable. The line for 2020/21 is further up and to the left than in 2019/20, which reflects both the increase in ITT recruitment due to the Covid-19 pandemic (Worth and Faulkner-Ellis, 2022) and a slight increase in recruitment ease in many subjects as a result.

One subject that appears not to follow the general pattern is biology. For both academic years, biology ITT recruitment was substantially above the target, yet its recruitment ease score does not indicate that it is a significantly easier subject to recruit for. This can be explained by the fact that a significant number of trainee teachers qualifying as biology teachers, are recruited as general science teachers.

General science was included as an option in the subject recruitment difficulty question, so we compare our recruitment ease score for general science teachers against the total number of science trainees as a percentage of the combined target. The relationship between the two measures for general science follows the trend seen for other subjects, indicating that once general science recruitment is accounted for, the discrepancy for biology teachers reduces between the two measures. This suggests that biology teachers are disproportionately recruited into general science teaching roles, filling the gaps that appear from under-recruitment of physics and chemistry teachers into training.

6. Recruitment challenges and shortage mitigations for specific subjects

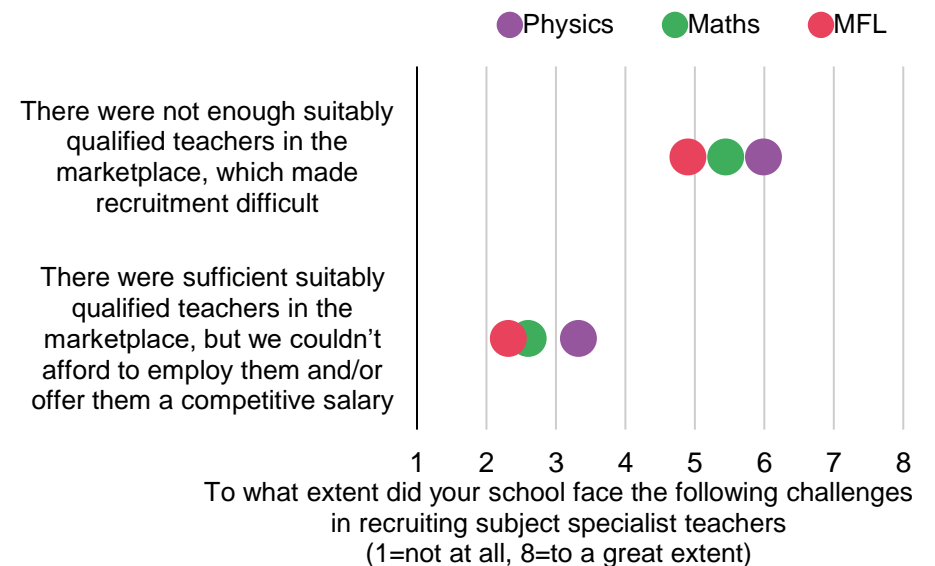
6.1. Recruitment challenges for physics, maths and MFL

Physics, maths and modern foreign languages (MFL) have been consistently identified in data on recruitment to teacher training as shortage subjects that have failed to meet their recruitment targets over a number of years. We asked senior leaders further questions about these subjects in the survey, covering the recruitment challenges school leaders faced and for more information about a key mitigating strategy: deploying non-specialist teachers to teach the subject. The latter is a particular mitigating strategy that could have important negative implications for pupils' education and learning.

For each of the three subjects, secondary senior leaders were asked to rate the extent to which their school faced two particular recruitment challenges in that subject, on a scale of one to eight. A response of one represented 'not at all' and eight represented 'to a great extent'. The two challenges presented to senior leaders were: 'there were not enough suitably qualified teachers in the marketplace, which made recruitment difficult' and 'there were sufficient suitably qualified teachers in the marketplace, but we couldn't afford to employ them and/or offer them a competitive salary'.

Figure 10 presents the average ratings senior leaders gave for these recruitment challenges in the most recent academic year.

Figure 10 The lack of suitable candidates was a greater recruitment challenge than budget constraints for the key shortage subjects



Source: NFER senior leader survey – autumn 2021. N = 134.

For all three subjects, senior leaders rated there not being enough suitably qualified teachers in the marketplace as a far more significant recruitment challenge than the challenge related to affordability. Senior leaders rated these recruitment challenges as affecting their schools to the greatest extent for physics, followed by maths and MFL. This suggests that the sustained under-recruitment of trainees in physics, maths and MFL is contributing to an overall lack of teacher supply and

substantial challenges affecting schools' ability to recruit suitably-qualified teachers to vacancies.

6.2. Mitigating subject-specific shortages by deploying non-specialist teachers

A potential consequence of school leaders finding recruitment of suitably-qualified physics, maths and MFL teachers challenging is that schools fill the resulting shortages by using strategies that may have significant negative implications for the quality of pupils' education and learning. One such approach for schools to fill staff shortages is to deploy non-specialist teachers to teach subjects where there are significant challenges to recruiting and retaining suitably-qualified teachers.

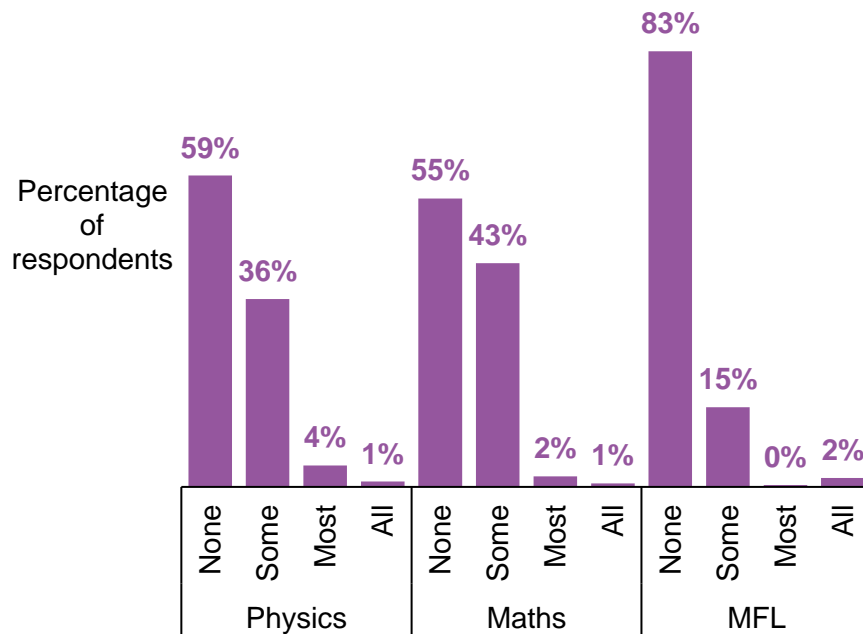
Measuring teachers' subject specialism is complex. Specialism can be framed in terms a range of factors, including degree qualifications in a subject, teacher training in that subject and experience of teaching a subject. For example, DfE publishes data on subject specialism based on post-A level qualifications, which includes degree and teaching qualifications. However, this measure has limitations, particularly for subjects such as MFL. For example, a teacher who is a native speaker of French may not have a degree in French, but have the required ability to be a teacher of French. This would not necessarily be captured in the DfE's measure of subject specialism.

We asked senior leaders to define subject specialism themselves, and asked them: 'approximately what proportion of lessons were staffed by non-subject specialist teachers during the academic year?'. There

were four response options given for these questions: 'none', 'some', 'most' and 'all'.

Figure 11 presents the responses to these questions for the 2020/21 academic year. The responses across the two years were similar and so we present the most recent academic year. For both maths and physics, close to half of secondary senior leaders reported that at least some non-specialists were used to teach the subjects. The use of non-specialists was not as prevalent for MFL, where only one in five schools used non-specialists for some lessons.

Figure 11 A significant proportion of schools used at least some non-specialist teachers when staffing maths and physics lessons



Approximate proportion of lessons staffed by non-subject specialist teachers during the academic year, by subject

Source: NFER senior leader survey – autumn 2021. N = 294.

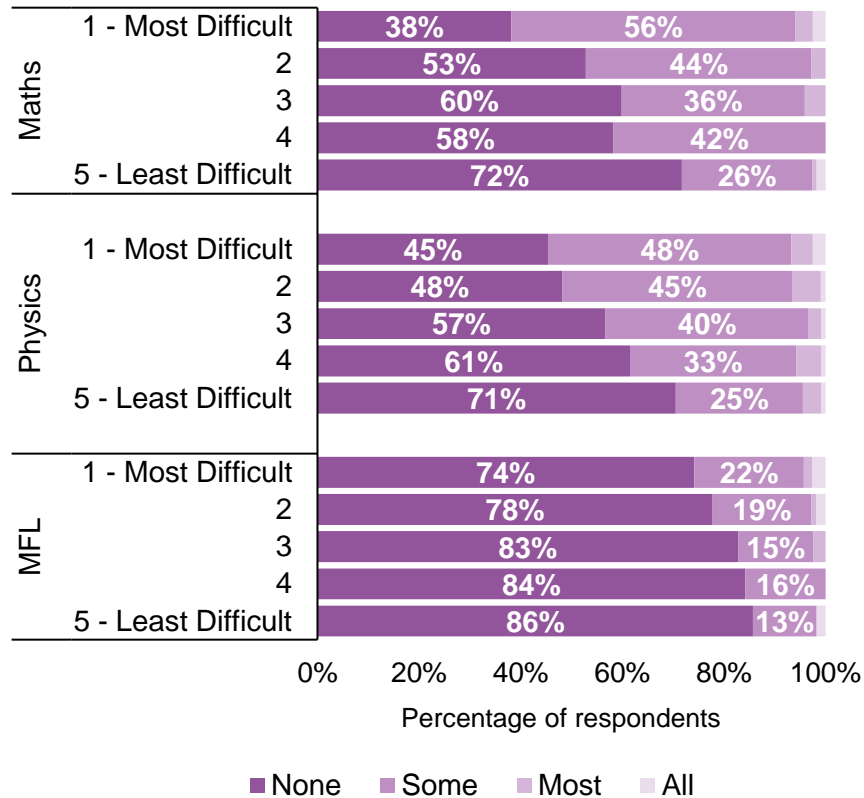
Figure 12 breaks down the responses on the use of non-specialist teachers across quintiles of the recruitment ease measure to explore the relationship between schools' difficulty recruiting teachers and the deployment of non-specialist teachers.

The first quintile is the fifth of schools that found recruitment the most difficult and the highest quintile is the fifth of schools that found recruitment the least difficult. The data shows that there is a clear relationship: schools that found teacher recruitment the most difficult were more likely to deploy non-specialist teachers to teach these three shortage subjects.

These findings indicate that schools facing greater challenges with recruiting teachers make greater use of non-specialist teachers, likely as a direct result of those challenges. Deploying non-specialists to teach a subject is likely to have negative implications for the quality of the pupils' learning in the classroom, as having deep and fluent knowledge and flexible understanding of the content you are teaching is an important element of effective teaching (Coe *et al.*, 2020).

Figure 12 The schools that reported finding teacher recruitment more difficult were more likely to use non-specialist teachers

Approximate proportion of lessons staffed by non-subject specialist teachers during the academic year, by subject and quintile of recruitment ease



Source: NFER senior leader survey – autumn 2021. N = 282

7. Mitigating subject-specific shortages by making curriculum changes

7.1. Factors influencing schools' decisions to offer triple science at GCSE

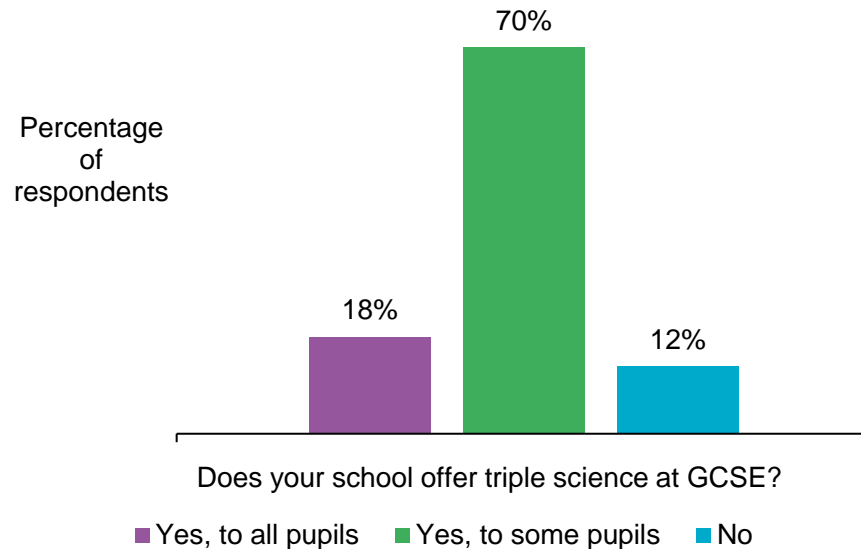
A longer-term strategy to mitigate staff shortages for secondary schools is to make changes to the curriculum and change the set of subjects available to pupils to learn and qualifications open to them to study towards. Science, particularly for physics and chemistry, have experienced acute shortages of trainee numbers for many years. Moreover, there are different curriculum and qualification options available for schools to offer pupils for science. We therefore asked secondary senior leaders about the GCSE options their school offers for pupils studying science subjects, to explore the impact of teacher recruitment issues on those decisions.

There are two main options for studying sciences at GCSE level: studying biology, chemistry and physics as three GCSEs (known as 'triple science') and a double science award (a qualification worth two GCSEs that covers the three science subjects). A double science award GCSE covers a third less of the curriculum content covered by pupils studying triple science. Schools facing particularly acute staff shortages in the sciences may decide to restrict the offer of triple science to fewer pupils, or no pupils at all. However, there are also likely to be other reasons influencing schools' decisions about what options to offer pupils.

In the survey we asked senior leaders from secondary schools: 'does your school offer triple science at GCSE?' and provided three options: 'Yes, to all pupils', 'Yes, to some pupils', and 'No'.

Figure 13 presents the responses secondary senior leaders gave to the question: 'does your school offer triple science at GCSE?' across both the 2019/20 and 2020/21 academic years. The majority of secondary schools reported offering triple science to some pupils, while only 12 per cent of secondary schools did not offer triple science at all. We combine the responses from both academic years for further analysis as the sample size of secondary schools not offering triple science in each single academic year is small.

Figure 13 The majority of schools did offer triple science to at least some pupils



Source: NFER senior leader survey – autumn 2020 and 2021. N = 648.

If the respondent selected ‘Yes, to some pupils’ or ‘No’, then senior leaders were routed to the question ‘To what extent, if at all, do the following factors constrain you from offering triple science to all pupils?’. Senior leaders were provided with a range of factors, with a response scale of one to eight to rate the extent to which these factors affected their school in not offering triple science to all pupils, where one represented ‘not at all’ and eight represented ‘to a great extent’.

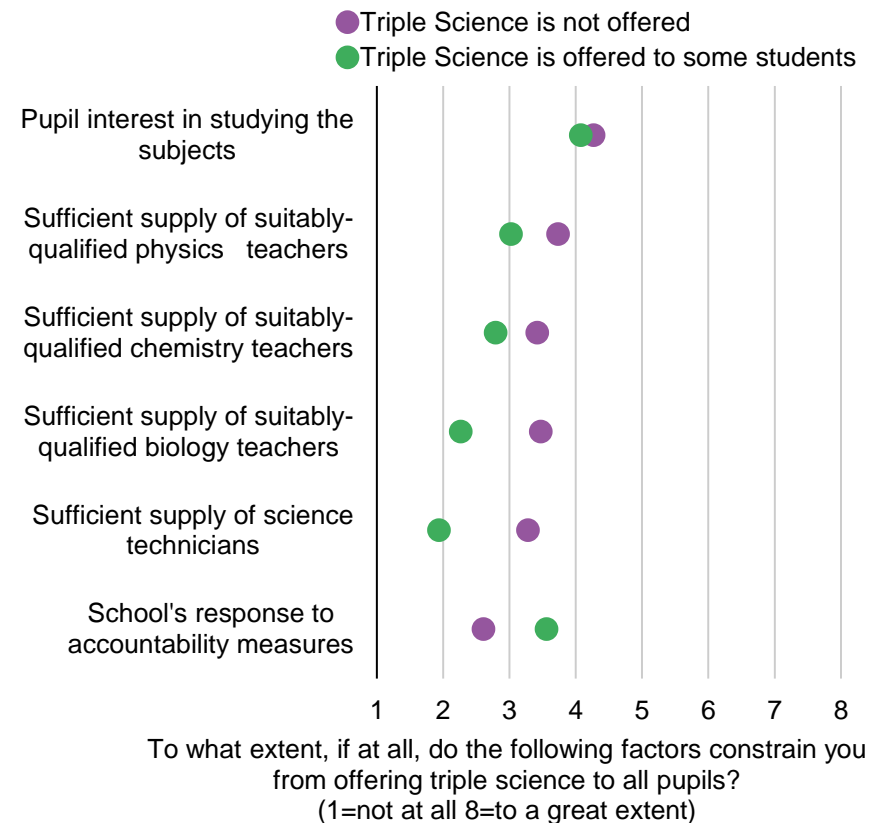
The options presented to senior leaders were issues relating to recruitment challenges and staff shortages as well as other reasons why triple science might not be offered. The constraints surrounding recruitment challenges leading to staff shortages were the lack of sufficient supply of suitably qualified teachers of science subjects and science technicians. Other constraints to not offering triple science presented in the survey were the lack of pupil interest in studying triple science and accountability measures.

Figure 14 presents the average responses to the question ‘To what extent, if at all, do the following factors constrain you from offering triple science to all pupils?’ for both academic years of the survey. The separate average responses are presented for the group of schools that responded with ‘Yes, to some pupils’ and the group of schools who responded with ‘No’ to the previous question of triple science being offered.

For both groups of schools, the most significant reason why triple science is not offered to all pupils is (the lack of) pupil interest in studying science subjects. This is significant as issues relating to recruitment challenges and staff shortages appear not to be the main reason why schools are not offering triple science to all pupils. However, pupil interest itself may relate to the quality of teaching, particularly in earlier key stages, and therefore to the availability of suitably qualified teachers.

There are considerable differences between the two groups of schools in the other reasons why triple science is not offered to some or all pupils. For the secondary schools that did not offer triple science at all, the sufficient supply of suitably-qualified physics, chemistry and biology teachers and science technicians were cited as greater constraints by senior leaders, relative to the schools where triple science was offered to some pupils but not all.

Figure 14 Pupil interest was the most significant reason why triple science wasn’t offered, while teacher supply affected the schools that didn’t offer triple science at all the most



Source: NFER senior leader survey – autumn 2020 and 2021. N = 462

Conversely, the group of schools that did not offer triple science at all did not highlight that responding to accountability measures was a significant factor, while senior leaders in schools where triple science was offered to some pupils but not all cited the response to accountability measures to almost the same extent as ‘pupil interest in studying the subjects’.

The key secondary school accountability measure is ‘Progress 8’. Progress 8 measures the GCSE results of pupils relative to pupils nationally with the same prior attainment, and is published as an indicator of school performance. Science subjects count towards the three EBacc GCSE ‘slots’ in the measure alongside history, geography and MFL. The accountability measure may therefore, on its own, provide little incentive to schools concerned with maximising their accountability scores to offer triple science to pupils, given that each pupils’ third-highest science GCSE grade is unlikely to count towards the overall score within the EBacc pillar, alongside GCSE grades from other EBacc subjects. This may explain why the school’s response to accountability measures was not such an important factor reported by school leaders for decisions about whether to offer triple science at all.

Overall, the most salient factor for schools that did not offer triple science at all was pupil interest. The impact of recruitment challenges, particularly the sufficient supply of physics and chemistry teachers was another significant factor, particularly for schools where triple science was not offered at all.

However, for schools that offered triple science to at least some pupils but not all, the response to accountability measures was a more salient factor and sufficient supply of teachers was less of an important factor.

Therefore, it appears that there is a minority of schools that were constrained in offering triple science by a lack of suitably-qualified science teachers.

7.2. Mitigating subject-specific shortages by making MFL curriculum changes

The survey also considered how recruitment challenges have affected the provision of MFL for secondary schools. Secondary school senior leaders were asked to rate the extent to which recruitment challenges had caused their school to limit the number of students who studied MFL. This was rated on the same scale as other questions, on a scale of one to eight, where one represented ‘not at all’ and eight represented ‘to a great extent’.

The data indicated that MFL teacher recruitment challenges have played a very limited role in decisions about the provision of MFL (average rating of 2.1 on the one to eight scale). Even for the quintile of schools that reported finding teacher recruitment the most difficult, the average rating for this question was only 2.5. Other factors, such as the role of pupil interest and responses to accountability measures are therefore likely to be the most salient factors.

These findings are consistent with the underlying policy factors affecting the demand for MFL teachers. Until 2020, the Government deliberately set very high recruitment targets for MFL trainees, to provide the supply of teachers necessary for reaching its target of 90 per cent of pupils entering qualifications in one of each of the EBacc subject groups, including MFL. However, the nature of the main secondary school accountability measures meant that it gave schools

weak incentives to enter large number of pupils for MFL qualification (Worth and De Lazzari, 2017). Indeed, the number of entries to MFL GCSEs has not increased over the last five years in spite of the ambitious target for GCSE entries.

While maintaining that it remains committed to the target for GCSE entries, the Government lowered the teacher trainee target for MFL considerably in 2021 and 2022, suggesting that it is now taking a more pragmatic approach. It seems clear that despite the number of MFL trainees being considerably below target for many years, and the recruitment of MFL teachers still being challenging, a lack of suitably-qualified teachers was not the main reason why GCSE entries in MFL failed to rise over the last decade. However, as above for science, it is plausible that the quality of teaching at earlier key stages, perhaps influenced by teacher under-supply, could itself influence pupil interest in the subject.

8. Issues with recruitment and strategies used across different types of school

This section explores whether and how schools with different characteristics found recruiting teachers more or less challenging, and whether particular types of school were using strategies to mitigate potential staff shortages caused by recruitment challenges to a greater or lesser extent. We use the recruitment ease measure to make comparisons across school characteristics.

The key potential limitations of using this measure to compare across schools, which are highlighted in section 2.2, are important to bear in mind when interpreting these comparisons. School leaders will likely have differing views of what a 'difficult' environment for teacher recruitment is for their school compared to others, and this may be linked to their school characteristics. Hence, comparing the recruitment ease measure across schools with different characteristics may not capture a direct and objective comparison of recruitment difficulty, because it is based on school leaders' perceptions.

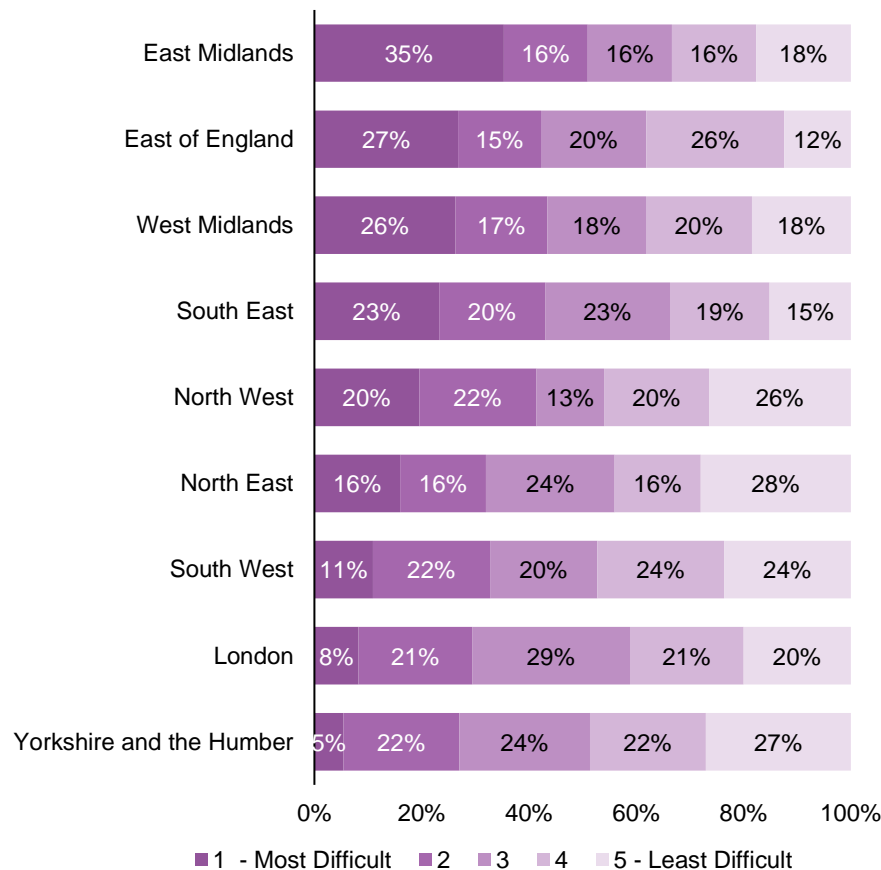
8.1. Recruitment and shortages challenges across geographical location

There were some regional differences in the recruitment ease measure for schools in our sample. For secondary schools there were significant differences across region for the recruitment ease measure, while for primary schools there were no significant differences across regions.

Figure 15 presents the regional split of the recruitment ease quintile measure for secondary schools. Secondary schools in the East Midlands, East of England and West Midlands were disproportionately more likely to be in the lowest quintiles of the recruitment ease measure and less likely to be schools that reported finding recruiting the easiest. In contrast, schools in London, Yorkshire and the Humber and the South West were disproportionately less likely to be schools that reported finding recruitment the most difficult.

However, there was also a range of responses within each region, with some schools in all regions being distributed across the quintiles from those that reported finding recruitment the most and the least difficult.

Figure 15 Secondary schools across the country faced significant differences in recruitment difficulty



Source: NFER senior leader survey – autumn 2020 and 2021. N = 599.

These regional differences were not driven by the types of cities, towns, and areas the schools are located in. For both primary and secondary schools, there were no significant differences across the recruitment ease measure between the type of travel to work area (TTWA) the school was in (such as large urban areas, small coastal areas or small, non-coastal areas). This suggests that regional differences are not occurring due to differences in regional composition, such as London being more urban than other regions. For example, if schools in larger cities found recruitment significantly easier, then this would drive regional differences in recruitment difficulty as certain regions have more larger cities than others.

Despite the overall finding that London schools were less likely to report the highest levels of difficulty recruiting, schools in London reported a few specific recruitment challenges to a greater extent than schools in other parts of the country. For both primary and secondary schools in London, high living costs were more likely to be reported as a recruitment challenge by senior leaders. Also, primary school leaders in London were more likely to report budget constraints as a significant recruitment challenge than primary schools across the rest of England.

Schools across all types of area used non-specialist teachers to a similar extent for maths, physics and MFL. The only exception was small, non-coastal areas, in which 60 per cent of secondary senior leaders in 2019/20 reported that non-specialists taught at least some maths, 58 per cent for physics and 34 per cent for MFL, compared to 44 per cent for maths, 47 per cent for physics and 23 per cent for MFL nationally.

8.2. Recruitment and shortages challenges across school Ofsted rating

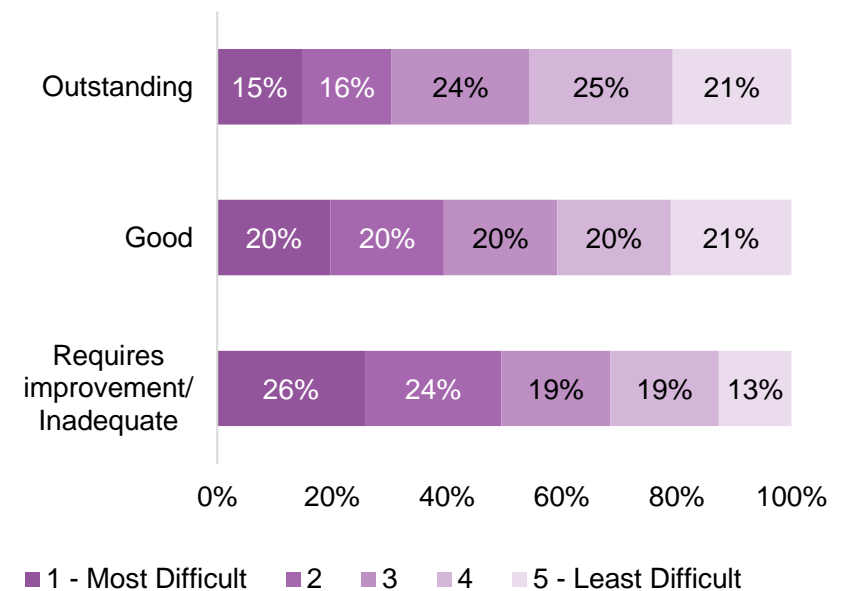
The survey data shows a clear relationship between a school’s Ofsted rating and how difficult the school leader reported finding teacher recruitment.

Figure 16 presents a breakdown for primary and secondary schools of the recruitment ease quintile measure and the three groups of Ofsted ratings. Schools that were rated ‘outstanding’ were less likely to be schools that reported finding recruitment the most difficult, while schools that were rated ‘requires improvement’ or ‘inadequate’ were more likely to be schools that reported finding recruitment the most difficult.

As well as overall recruitment difficulty, schools with lower Ofsted ratings reported more types of recruitment challenge than schools with higher ratings. Senior leaders from both primary and secondary schools rated as ‘requires improvement’ or ‘inadequate’ identified their Ofsted rating as a significant challenge to recruitment, while schools with an ‘outstanding’ or ‘good’ rating did not tend to report their school’s Ofsted rating as a challenge to recruitment. Schools with lower Ofsted ratings also identified budget constraints as a much greater recruitment challenge than schools with higher Ofsted ratings.

Schools with lower Ofsted ratings also reported using non-specialists across maths, physics and MFL to a greater extent than schools with higher Ofsted ratings.

Figure 16 Schools that had lower Ofsted ratings found recruitment more difficult



Source: NFER senior leader survey – autumn 2020 and 2021. N = 1304.

A school’s Ofsted rating clearly has a significant association with difficulty recruiting teachers. However, it is difficult to disentangle the nature of this relationship. There are likely many factors that result in a school receiving a lower Ofsted rating, which may also be factors associated with finding recruitment more difficult.

Previous research has identified that there can be significant negative effects of receiving multiple lower than ‘good’ Ofsted ratings for several

outcomes for schools, including increasing teacher turnover and making recruitment more challenging (Munoz-Chereau *et al.*, 2022). Our findings cannot identify the direction of this potentially complex and mutually-reinforcing relationship, but can identify that a school's Ofsted rating appears to be strongly associated with greater difficulties with recruiting teachers.

8.3. Recruitment and shortages challenges across school disadvantage level

Across the level of school disadvantage, there were no significant differences in how difficult schools reported finding teacher recruitment. This result is slightly surprising in the context of previous literature findings that schools with more disadvantaged intakes tend to find recruiting teachers more challenging (Allen *et al.*, 2016).

It is possible that the inherent limitations in comparing the recruitment ease measure may partly drive this result. For example, senior leaders in disadvantaged schools may have very different expectations of what a 'difficult' year of recruitment looks like compared to senior leaders from schools in more affluent areas, and these expectations may be anchoring their response to the question about how easy or difficult they found recruitment.

However, there may also be other explanations. Other research has found that the increase in teacher supply during the Covid-19 pandemic may have had a somewhat equalising effect on how schools found teacher recruitment (Allen and Hannay, 2021) by disproportionately benefiting schools with more disadvantaged intakes.

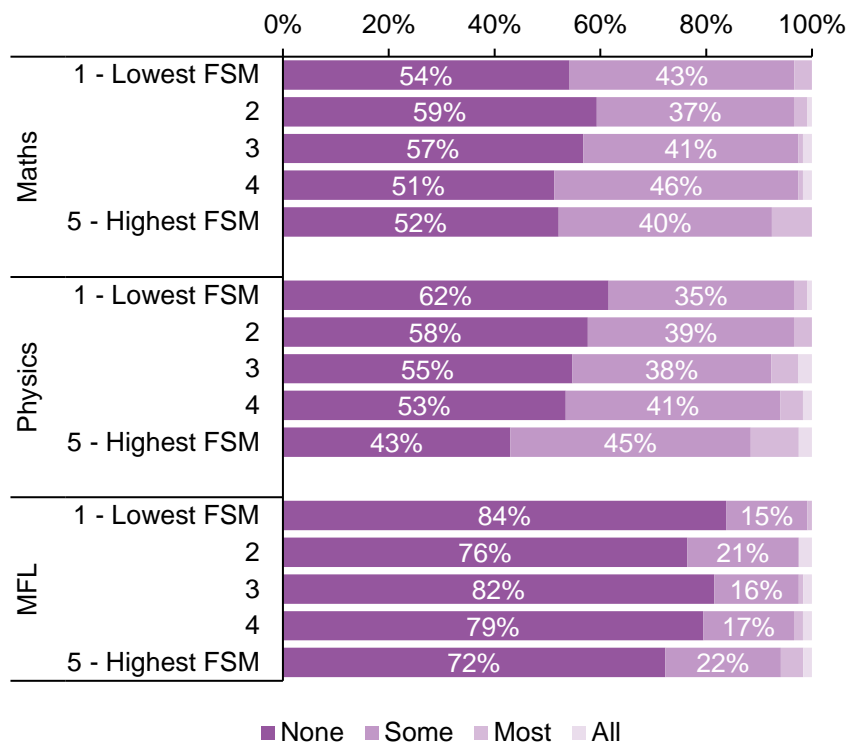
Increases in the number of teacher trainees and the reduction in teachers leaving the profession may have had a greater impact on schools with more disadvantaged intakes, which previously found recruitment more difficult. This could be another reason why the recruitment ease measure was not significantly different between the most and the least disadvantaged schools during this period.

However, the most disadvantaged schools did report more types of recruitment challenge affecting their school than schools with fewer disadvantaged pupils. Primary and secondary schools that had higher shares of pupils that had been eligible for free school meals reported that their school being in a deprived area and school reputation were significant challenges to recruitment. These recruitment challenges were not identified as substantial recruitment challenges for our full sample of schools and hence only were issues for the most disadvantaged schools.

As shown in Figure 17, there were some notable differences across school disadvantage level in the use of non-specialist teachers in physics and MFL, but not significantly for maths. More than half (57 per cent) of secondary school leaders with the highest level of disadvantage reported that at least some physics lessons were staffed by non-specialists compared to 38 per cent for the lowest level of disadvantage. Around a quarter (28 per cent) of leaders in schools with the highest level of disadvantage reporting that at least some MFL lessons were staffed by non-specialists compared to 16 per cent for schools with the lowest level of disadvantage.

Figure 17 Schools with the highest levels of disadvantage were more likely to use non-specialist physics and MFL teachers

Approximate proportion of lessons staffed by non-subject specialist teachers during the academic year, by subject and quintile of pupils eligible for free school meals



There were also significant differences between the most and least disadvantaged schools in the provision of triple science. The most disadvantaged fifth of schools were significantly more likely to report not offering triple science at all, and significantly less likely to offer triple science to all pupils, compared to the least disadvantaged fifth of schools. The most disadvantaged schools rated all the constraints to not offering triple science as affecting their school to a greater extent than the least disadvantaged schools. While recruitment challenges for all types of science teachers were a significantly greater constraint, pupil interest was the constraint that affected all types of school the most.

Overall, there is mixed evidence that more disadvantaged schools found teacher recruitment more challenging during the period of 2019/20 and 2020/21, but does support the notion that schools with the highest level of disadvantage employ more non-specialist teachers in hard-to-recruit-for subjects such as physics and MFL.

Source: NFER senior leader survey – autumn 2020 and 2021. N = 592.

9. Conclusions

The evidence from the survey analysis paints a picture of two key challenges for school leaders in recruiting high-quality teachers to their school. The first is budget pressures, which schools report being a significant challenge when it comes to recruitment. In the 2019/20 survey, only 13 per cent of primary school leaders and 27 per cent of secondary school leaders reported that they could have afforded to recruit another teacher, regardless of whether they wanted to do so or not.

The second is the quantity and quality of available applicants to teacher vacancies. This is a particularly acute challenge for secondary schools, where recruitment of trainees to teacher training programmes has been below the target numbers required for many years. Indeed, our analysis of which subjects schools find it most difficult to recruit for aligns strongly with the extent to which training targets have been met.

It is clearly not the case that there is a substantial, ready supply of potential or returning teachers waiting to fill the gaps left by insufficient recruitment of new trainees to teacher training courses. Whether or not the ITT recruitment targets are met has material implications for how challenging schools find it to hire teachers the following year. The worsening post-pandemic teacher recruitment and retention situation therefore suggests that secondary schools are likely to struggle with recruitment in the coming years (Worth and Faulkner-Ellis, 2022).

The schools that reported finding it the most difficult to recruit teachers report that their key recruitment challenges, alongside budget pressures, are being unable to assemble a field of quality applicants and experiencing issues with the suitability/ quality of staff applying.

Schools finding teacher recruitment challenging is also associated with important negative implications for school operations, and therefore likely detriments to pupils' education and learning.

Faced with a low-quality field of applicants, senior leaders can either hire a teacher that applies but that may be less than ideal, or not hire at all and mitigate the impact of the resulting shortage. Schools that reported finding teacher recruitment the most difficult were considerably more likely than other schools to report recruiting less-experienced teachers than they would otherwise like, and more likely to employ more unqualified teachers than they normally would. Recruiting inexperienced or unqualified teachers is likely to have negative implications for teaching quality.

However, not hiring in such a situation also has potential negative consequences for the school and pupils. Schools that reported finding teacher recruitment the most difficult were considerably more likely than other schools to have school leaders doing more teaching than usual. This may reduce the school's leadership capacity and, in turn, limit the schools' ability to function well operationally and make improvements to teaching.

There was also some evidence of schools that reported finding teacher recruitment the most difficult being more likely than other schools to

reduce non-contact time for existing teachers, with implications for their workload, stress and potentially retention as a result.

Another mitigation strategy used in secondary schools when teacher recruitment is difficult is deploying non-specialist teachers to teach certain subjects. Among three key shortage subjects we explored, schools reported high levels of non-specialists teaching maths (45 per cent reporting at least ‘some’ lessons) and physics (39 per cent reporting at least ‘some’ lessons), with a smaller but notable proportion of MFL lessons being taught by non-specialists (17 per cent reporting at least ‘some’ lessons).

Deployment of non-specialist teachers was far more prevalent in schools that reported finding teacher recruitment the most difficult, compared to other schools. In schools that reported finding teacher recruitment the most difficult, 62 per cent reported at least ‘some’ maths lessons being taught by non-specialists, 55 per cent for physics and 26 per cent for MFL.

There was mixed evidence of secondary schools using curriculum changes – such as reducing the offer of triple science or MFL qualifications to some or all pupils – to mitigate teacher shortages. Teacher under-supply was not a key reason for not all pupils studying MFL, even in schools that reported finding teacher recruitment the most difficult. However, sufficient supply of science teachers appears to be an important factor for some schools deciding not to offer triple science to any pupils (alongside pupil interest in studying sciences, which is a major factor reported in the survey).

Challenges with teacher recruitment may also be having a disproportionate impact on schools with low Ofsted ratings, and school leaders’ efforts to improve outcomes. There is likely to be a complex relationship between a school’s Ofsted rating and recruitment challenges, rather than a simple effect of an Ofsted rating downgrade making it more challenging to recruit. Nonetheless, our survey data suggests there seems to be an association between a low Ofsted rating and increased recruitment challenges. These recruitment challenges may exacerbate the challenges of improving the quality of education in the school, whether through leaders doing more teaching reducing leadership capacity, lower-quality teachers being employed, or other related factors.

This evidence points to substantial negative implications of the currently growing recruitment and retention challenges in England for pupils’ education and learning. Insufficient numbers of teacher trainees in some subjects have real implications for schools, and school leaders’ actions to mitigate the resulting shortages cannot fully insulate pupils from the effects.

These negative implications may be acting as a drag on system-wide improvement of pupil outcomes. This is likely to have a negative impact on longer-term skill development and supply, particularly in STEM subjects, and ultimately on long-term economic growth.

We recommend that the Government places a renewed focus on improving teacher recruitment and retention, to ensure a sufficient supply of teachers and in turn support the improvement of pupil outcomes across the education system.

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Appendix A

NFER conducted national surveys of senior leaders in primary and secondary state schools in England in autumn term 2020 and autumn term 2021. The findings from the surveys aimed to gain an understanding of teacher recruitment and retention, with a particular focus on how the experience of recruiting and retaining teachers had been affected by the Covid-19 pandemic. The survey themes included:

- the extent of teacher shortages as reported by schools
- how satisfied schools were with the quality of applicants and appointees
- strategies to mitigate the impact of unfilled vacancies on pupils and other teachers
- barriers that teacher shortages have imposed upon the school meeting any achievements
- contextual challenges schools face in terms of recruitment and retention
- the impact that Covid-19 has had on teacher recruitment, retention and deployment.

In autumn 2020, we received responses from 520 senior leaders in primary schools and 343 senior leaders in secondary schools. In autumn 2021, we received responses from 531 senior leaders in primary schools and 307 senior leaders in secondary schools. The responses were drawn from different categories of school, but the proportions of each school characteristic did not identically match the population. Notable differences between the characteristics of the

response sample and the population of all schools were mostly in school type.

We weighted the survey responses to be representative of the population of state schools in England, according to factors that may be associated with a school's general context and specifically its teacher recruitment and retention situation. We weighted the responses by:

- school type
- quintile of proportion of pupils eligible for free school meals any time in the previous six years
- achieving excellence area category – a local-area measure of educational attainment and capacity to improve.
- whether the school reported at least one open vacancy or temporarily-filled post in the 2020 School Workforce Census
- Ofsted rating
- Category of geographical area (London/ large urban/ medium-sized urban/ small non-coastal, small coastal).

We categorise travel to work areas into the five area types. The groups are defined as follows:

Table 1 Definition of travel-to-work area categories

TTWA group	Definition	Example TTWAs
London	London TTWA	London
Large urban areas	Working population: >300,000 (excl. London)	Manchester, Birmingham, Slough and Heathrow, Reading
Medium sized areas	Working population: 150,000-300,000	Coventry, Oxford, Southend, Crewe, Tunbridge Wells
Small, non-coastal areas	Working population: <150,000 and not coastal	Doncaster, Mansfield, Gloucester, Buxton, Hexham
Small, coastal areas	Working population: <150,000 and is coastal	Blackpool, Eastbourne, Chichester, Bridport, Whitby

The weighting was performed using a statistical technique called entropy balancing. The representativeness of the primary and secondary samples in 2020 – both before and after weighting – are shown, respectively, in Tables 2 and 3. The representativeness of the primary and secondary samples in 2021 are shown, respectively, in Tables 4 and 5.

Table 2 Representativeness of primary senior leader sample – autumn 2020

School characteristic		Population	Sample		
		%	N	Unweighted %	Weighted %
School type	LA Maintained	64	362	70	64
	Single-academy trust	4	27	5	4
	Multi-academy trust	33	131	25	33
Quintile of pupil FSM	Lowest 20%	19	97	19	19
	Middle-lowest 20%	20	99	19	20
	Middle 20%	19	106	20	19
	Middle-highest 20%	19	102	20	19
	Highest 20%	19	106	20	19
	Missing FSM data	3	10	2	3
Achieving Excellence Area Category	Category 1	14	74	14	14
	Category 2	15	70	13	15
	Category 3	17	98	19	17
	Category 4	20	99	19	20
	Category 5	17	97	19	17
	Category 6	17	82	16	17

School had a vacancy or temporarily-filled post	No	93	470	90	93
	Yes	6	33	6	6
	Missing data	1	17	3	1
Ofsted rating	Outstanding	17	92	18	17
	Good	70	352	68	70
	Requires improvement	9	50	10	9
	Inadequate	2	11	2	2
Type of geographical area	Missing/ not inspected yet	3	15	3	3
	London	11	55	11	11
	Large cities	30	149	29	30
	Medium-sized cities	27	163	31	27
	Small, non-coastal	19	99	19	19
Small, coastal	13	54	10	13	
Total N = 520					

Note: percentages may not sum to 100% due to rounding.

Table 3 Representativeness of secondary senior leader sample – autumn 2020

School characteristic		Population	Sample		
		%	N	Unweighted %	Weighted %
School type	LA Maintained	22	103	30	22
	Single-academy trust	22	94	27	22
	Multi-academy trust	56	146	43	56
Quintile of pupil FSM	Lowest 20%	19	83	24	19
	Middle-lowest 20%	19	78	23	19
	Middle 20%	19	66	19	19
	Middle-highest 20%	19	65	19	19
	Highest 20%	19	37	11	19
	Missing FSM data	5	14	4	5
Achieving Excellence Area Category	Category 1	17	41	12	17
	Category 2	14	67	20	14
	Category 3	17	68	20	17
	Category 4	19	56	16	19
	Category 5	17	70	20	17
	Category 6	16	41	12	16
School had a vacancy or temporarily-filled post	No	70	246	72	70
	Yes	27	89	26	27
	Missing data	2	8	2	2

Ofsted rating	Outstanding	20	70	20	20
	Good	53	205	60	53
	Requires improvement	15	45	13	15
	Inadequate	5	11	3	5
	Missing/ not inspected yet	7	12	4	7
Type of geographical area	London	15	37	11	15
	Large cities	32	93	27	32
	Medium-sized cities	26	94	27	26
	Small, non-coastal	16	70	20	16
	Small, coastal	12	49	14	12
Total N = 343					

Note: percentages may not sum to 100% due to rounding.

Table 4 Representativeness of primary senior leader sample – autumn 2021

School characteristic		Population	Sample		
		%	N	Unweighted %	Weighted %
School type	LA Maintained	62	408	77	62
	Single-academy trust	35	103	19	35
	Multi-academy trust	3	20	4	3
Quintile of pupil FSM	Lowest 20%	19	103	19	19
	Middle-lowest 20%	19	130	24	19
	Middle 20%	19	108	20	19
	Middle-highest 20%	19	89	17	19
	Highest 20%	19	100	19	19
	Missing FSM data	4	1	0	4
Achieving Excellence Area Category	Category 1	14	80	15	14
	Category 2	15	83	16	15
	Category 3	17	91	17	17
	Category 4	20	106	20	20
	Category 5	17	96	18	17
	Category 6	17	75	14	17
School had a vacancy or temporarily-filled post	No	92	475	89	92
	Yes	7	35	7	7
	Missing data	2	21	4	2

Ofsted rating	Outstanding	16	90	17	16
	Good	70	384	72	70
	Requires improvement/ inadequate	11	53	10	11
	Missing/ not inspected yet	3	4	1	3
Type of geographical area	London	11	50	9	11
	Large cities	30	180	34	30
	Medium-sized cities	27	143	27	27
	Small, non-coastal	19	94	18	19
	Small, coastal	13	64	13	13
Total N = 531					

Note: percentages may not sum to 100% due to rounding.

Table 5 Representativeness of secondary senior leader sample – autumn 2021

School characteristic		Population	Sample		
		%	N	Unweighted %	Weighted %
School type	LA Maintained	20	82	27	21
	Multi-academy trust	58	149	49	58
	Single-academy trust	21	76	25	21
Quintile of pupil FSM	Lowest 20%	19	78	25	19
	Middle-lowest 20%	19	58	19	19
	Middle 20%	18	53	17	18
	Middle-highest 20%	19	63	21	19
	Highest 20%	18	45	15	18
	Missing FSM data	7	10	3	7
Achieving Excellence Area Category	Category 1	17	45	15	17
	Category 2	14	58	19	14
	Category 3	17	57	19	17
	Category 4	19	50	16	19
	Category 5	17	55	18	17
	Category 6	16	42	14	16
School had a vacancy or temporarily-filled post	No	73	222	72	73
	Yes	24	77	25	24
	Missing data	3	8	3	3

Ofsted rating	Outstanding	19	61	20	19
	Good	53	181	59	53
	Requires improvement/ inadequate	20	55	18	20
	Missing/ not inspected yet	8	10	3	8
Type of geographical area	London	15	35	11	15
	Large cities	32	93	30	32
	Medium-sized cities	26	91	30	26
	Small, non-coastal	16	48	16	16
	Small, coastal	12	40	13	12
Total N = 307					

Note: percentages may not sum to 100% due to rounding.

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