Closing the Workforce Quality Gap

Experience, expertise and stability in disadvantaged schools

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April 2025

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Acknowledgements

This research was generously funded by The Sequoia Trust.

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Executive summary

This report examines differences between the teaching workforces at disadvantaged and affluent schools. The effectiveness of a school's workforce is commonly measured overseas by linking teachers to their pupils' attainment and estimating the value the teachers add. However, that approach is not available in England because the Department for Education does not allow those links between pupils and teachers to be made. Instead, we have constructed indirect measures of the effectiveness of the school workforce by measuring:

- The **skill and experience** of the workforce, using measures of teachers' experience.
- The **subject-matter knowledge** of the teachers, using the proportion of teachers with an academic degree or specialisation in the subject they teach.
- The **stability** of the workforce, using measures of the turnover rate of staff and teacher absence patterns.

Using these measures, we detail the evolution of the 'disadvantage gap' from 2010/11 to 2023/24, which is the most recent data available. The gap we measure is the difference between the most and least affluent quintiles of schools, as measured by the proportion of pupils eligible for free school meals. This is the first study to look at the evolution of these gaps since the COVID-19 pandemic. Our key findings are set out below.

Teachers and leaders in disadvantaged schools are less experienced

- Teachers in disadvantaged schools have less classroom experience. Teachers in disadvantaged secondary schools have approximately 3 years less experience than those in affluent schools.
- Primary schools show a narrower gap of about 2 years' experience between disadvantaged and affluent schools.
- Leadership gaps have widened in secondary schools. There was no gap for headteachers' experience in 2010, but it has now grown to 3 years in 2023/24.
- Headteachers are less experienced than in 2010. The average headteacher in secondary schools has 2 years less experience than in 2010.

Teachers in disadvantaged schools are increasingly less likely to have a relevant degree, particularly in STEM subjects

- The expertise gap in secondary schools is widening, with the proportion of lessons taught by teachers with a relevant degree in disadvantaged schools declining by 11 percentage points since 2016/17, from 58 per cent to 47 per cent.
- The gap between affluent and disadvantaged schools has grown from 6 to over 10 percentage points in recent years.
- STEM subjects show the most severe gaps, with disadvantaged schools now trailing affluent schools by 15 percentage points in the proportion of lessons taught by subject specialists.

Disadvantaged schools experience much higher levels of teacher turnover, and more teacher absences

- Annual teacher turnover in disadvantaged secondary schools exceeds affluent schools by 5-8 percentage points.
- Nearly half of the teaching workforce in disadvantaged secondary schools turns over within a four-year period, compared to only 35 per cent in affluent schools.
- The primary school turnover gap is declining, while the gap at secondary level has returned to its pre-pandemic peak.
- Teachers in disadvantaged schools miss 1.5-2 more working days annually compared to those in affluent schools.
- This absence pattern has remained consistent throughout the 13-year period studied, including during the COVID-19 pandemic.
- The absence gap represents approximately 1 per cent of instructional time lost for pupils who already face educational disadvantages.
- The gap in the total number of spells of absence is smaller, with disadvantaged primary schools having an additional half an absence spell per teacher per year, but no difference in secondary schools.

These measurable differences in the workforce between the most- and least-affluent schools are linked to educational disadvantage by an array of UK and overseas evidence. Closing these gaps is likely to also help to close the widening attainment gap.

Policy implications

Targeted interventions, including some that are currently employed by the government, may help address these workforce inequalities:

- **Retention incentives**: Financial mechanisms large enough to retain experienced subject specialists in disadvantaged settings. The existing retention payment schemes have proven helpful but the persistence of the experience gap over a decade indicates they have been insufficient. Further research is required to understand the magnitude of incentives needed.
- **Enhanced professional development**: Research indicates that more supportive professional environments can accelerate teachers' learning. Support structures such as the Early Career Framework and National Professional Qualifications for teacher development may accelerate teachers' learning in challenging contexts, potentially mitigating some effects of the experience gap.
- **Leadership training**: The data reveals that disadvantaged schools face both higher turnover and more teacher absences, creating instability in the learning environment. Previous work shows the importance of leadership for motivating and retaining staff through improved working conditions and support systems, which would address both turnover and absence rates. Additionally, implementing well-designed absence management policies with appropriate incentives and supports would help maintain consistency in the classroom.

- **Improved quality measurement:** The persistent gaps in observable teacher characteristics documented in this report highlight the need for better measurement of actual teaching quality across different school contexts. More sophisticated approaches to measuring instructional quality would help determine the extent to which differences in observable characteristics translate into differences in educational experiences for pupils.

Introduction

For over a decade, school funding policy has directed more funding towards pupils from disadvantaged backgrounds. However, despite that, the gap in attainment between children from disadvantaged backgrounds and those from more affluent backgrounds has now stalled and is no longer closing.[1] It is unclear what has caused the closing of the attainment gap to stall but it is possible that changes in the effectiveness and distribution of the school workforce account for some of it. In this report we detail the differences in the workforce between disadvantaged and more affluent schools.

There has long been an effort to improve educational opportunities for disadvantaged pupils, and the current government's opportunity mission places particular emphasis on breaking down barriers to opportunity across the education system.[2] Those barriers are likely to include differences in the quality of the education that pupils receive, and the government's policy ambitions may be constrained by workforce issues. The evidence presented in this report suggests that addressing the unequal distribution of workforce effectiveness may support progress toward these opportunity-related policy objectives.

The Department for Education's School Workforce Census (SWC) provides a rich dataset that allows us to examine these differences in detail. Current official reporting lacks any analysis of how key workforce metrics vary by school disadvantage levels, which is a gap that this report fills. We examine over fourteen years of workforce data (2010/11 to 2023/24), analysing how teachers' expertise, experience, and movement varies between disadvantaged and affluent schools.

Prior research on workforce effectiveness and disadvantage

Teacher quality is the single most important school-based factor influencing pupil achievement.[3] Research in the UK shows that being taught by a teacher who is one standard deviation better can increase test scores by 25 per cent of a standard deviation.[4] It is therefore important that the best teachers are in the schools where they can make the most difference to pupils' progress.

In some countries, teaching quality is directly measured with value-added scores, where the progress of pupils is attributed to the teacher. However, that is not possible in England because the Department for Education bars the linking of pupil and teacher data. Instead, we follow a range of earlier work and rely on workforce characteristics that are associated with teacher effectiveness:[5]

- **Experience**: More experienced teachers are generally more effective.[6]

[1] Jiménez et al., 'Breaking down the Gap'.
[2] Prime Minister's Office 10 Downing Street, 'Break Down Barriers to Opportunity'.
[3] Hanushek and Rivkin, 'The Distribution of Teacher Quality and Implications for Policy'.
[4] Slater, Davies, and Burgess, 'Do Teachers Matter?'
[5] Allen, Burgess, and Mayo, 'The Teacher Labour Market, Teacher Turnover and Disadvantaged Schools'; Sibieta, 'Teacher Shortages in England'.
[6] Rice, 'Learning from Experience?'

- **Subject expertise**: Teachers with strong subject knowledge are more effective, particularly in secondary education.[7]
- **Workforce stability**: Excessive turnover and teacher absence can disrupt school improvement efforts and affect pupils' outcomes.[8]

The distribution of teacher quality

A consistent finding across both US and UK research is that disadvantaged children are systematically less likely to be taught by high-quality teachers.[9] In England, research has documented that schools serving more disadvantaged communities are more likely to employ teachers who lack formal qualifications, are newly qualified, have less experience, or lack subject-specific expertise.[10] These patterns are particularly pronounced in secondary schools and in regions facing the most severe recruitment challenges.[11]

The allocation of the most effective teachers, both between and within schools, contributes to the perpetuation of educational inequalities. Slater, Davies, and Burgess note that "the assignment of pupils to teachers of varying quality may be an important part in generating the socio-economic attainment gaps in the first place."[12] Even within schools, more experienced, better qualified teachers are often allocated to higher-attaining classes, which can further disadvantage struggling pupils.[13]

While prior research has documented these inequalities, there has been limited longitudinal analysis of how these patterns have evolved over time, nor how the gap stands post-pandemic, which this report addresses.

Teacher experience

Research consistently shows that teachers' experience matters for student outcomes, though more so when teachers are new to the profession. The greatest gains typically occur in the first 3-5 years of teaching.[14] However, these gains can continue throughout a teacher's career, particularly when teachers work in supportive environments.[15]

Relevant to schools with a disadvantaged intake is that US evidence has found teachers in high-poverty areas may improve more slowly. Rice found that "the impact of experience differs for teachers in high- versus low-poverty schools," with experienced teachers in disadvantaged

[7] Metzler and Woessmann, 'The Impact of Teacher Subject Knowledge on Student Achievement'.
[8] Ronfeldt, Loeb, and Wyckoff, 'How Teacher Turnover Harms Student Achievement'; Miller, Murnane, and Willett, 'Do Worker Absences Affect Productivity?'
[9] Allen and Sims, 'Do Pupils from Low-Income Families Get Low-Quality Teachers?'
[10] Allen, Mian, and Sims, 'Social Inequalities in Access to Teachers'.
[11] Sibieta, 'Teacher Shortages in England'.
[12] Slater, Davies, and Burgess, 'Do Teachers Matter?'
[13] Francis et al., 'Teacher "Quality" and Attainment Grouping'; Kalogrides, Loeb, and Béteille, 'Systematic Sorting'; Allen and Sims, 'Do Pupils from Low-Income Families Get Low-Quality Teachers?'
[14] Rice, 'Learning from Experience?'
[15] Podolsky, Kini, and Darling-Hammond, 'Does Teaching Experience Increase Teacher Effectiveness?'

settings showing smaller gains in effectiveness over time compared to their counterparts in more affluent schools.[16] However, it is not clear why the difference exists, and the UK funding context is very different to the US. In the UK, schools with disadvantaged intakes typically have higher revenues per pupil, due to the pupil premium, whereas low-income US districts can struggle to find funding from taxes.

US research also indicates that the specificity of experience matters. Francis L. Huang and Tonya R. Moon found that while general teaching experience was not a significant predictor of student achievement, grade-specific experience was significantly associated with improved reading outcomes.[17] Similarly, Heather C. Hill, Charalambos Y. Charalambous, and Mark J. Chin found that experience, knowledge, and effort invested in professional activities all contribute significantly to teacher effectiveness in mathematics instruction.[18]

Subject expertise

Subject knowledge is an important dimension of teachers' effectiveness, particularly in secondary education. Metzler and Woessmann found that a one standard deviation increase in teachers' subject knowledge was associated with a 10 per cent of a standard deviation increase in student achievement.[19] In England, concerns about subject expertise are particularly acute in STEM subjects and modern foreign languages, where recruitment challenges are most severe.

The shortage of subject specialists in England is more acute in disadvantaged schools. EPI's research has found that "in the most deprived schools outside of London, for example, fewer than 17 per cent of physics teachers have a relevant degree."[20] Francis et al. also found that teachers with strong subject qualifications were disproportionately allocated to higher-attaining groups, further disadvantaging struggling students.[21]

Studies from the US provide additional evidence of the importance of subject expertise, with Charles T. Clotfelter, Helen F. Ladd, and Jacob L. Vigdor demonstrating that teacher credentials affect student achievement in systematic ways, particularly in subjects requiring specialised knowledge like mathematics and science.[22]

[16] Rice, 'Learning from Experience?'
[17] Huang and Moon, 'Is Experience the Best Teacher?'
[18] Hill and Charalambous, 'Teacher Knowledge, Curriculum Materials, and Quality of Instruction'.
[19] Metzler and Woessmann, 'The Impact of Teacher Subject Knowledge on Student Achievement'.
[20] Sibieta, 'Teacher Shortages in England'.
[21] Francis et al., 'Teacher "Quality" and Attainment Grouping'.
[22] Clotfelter, Ladd, and Vigdor, 'Teacher Credentials and Student Achievement in High School a Cross-Subject Analysis with Student Fixed Effects'.

Workforce stability

Teacher turnover and absence have been linked to negative outcomes for student achievement across multiple studies.[23] These effects operate through multiple mechanisms, including the loss of experienced teachers, disruption to collaborative professional cultures, diminished institutional knowledge, and significant loss of instructional time. NFER has documented fluctuations in teacher turnover rates in England over the past decade, with rates declining between 2016/17 and 2018/19 before rising again more recently.[24]

In the UK context, Stephen Gibbons, Vincenzo Scrutino, and Shqiponja Telhaj found that a 10-percentage point increase in annual teacher entry rates reduced student achievement by around 0.5 per cent of a standard deviation.[25] In the US, Desiree Carver-Thomas and Linda Darling-Hammond document how turnover disproportionately affects schools serving students of colour and from low-income families, creating "a particularly vicious cycle" where difficult working conditions lead to turnover, which in turn makes working conditions more challenging.[26]

Teacher absences directly affect instructional quality and continuity by taking teachers out of the classroom. In the UK, Sibieta has documented that teachers in disadvantaged schools outside London take approximately 50 per cent more sick leave than those in more affluent schools.[27] In the US, Miller, Murnane, and Willett found that ten days of teacher absence reduced student test scores by approximately 3.3 per cent of a standard deviation.[28] Similar effects have been documented in France by Asma Benhenda, who found that teacher absences reduced pupil test scores by around 0.40 per cent of a standard deviation.[29]

The effectiveness of substitute provision is a moderating influence on the cost of absence. Benhenda[30] found that certified substitute teachers could compensate for up to 25 per cent of the negative effect of teacher absence, while uncertified substitutes had no statistically significant compensatory effect. This shows the importance of both reducing unnecessary absences and ensuring high-quality cover arrangements when absences are unavoidable.

While some absence is inevitable, there are differences between disadvantaged and affluent schools. These could be due to higher workload and stress levels in challenging schools, differences in absence management practices, or compositional effects of having more inexperienced teachers who may require more time off. Research by Carol M. Speas suggests that school environments significantly influence absence patterns, with teachers' absence rates in

[23] Ronfeldt, Loeb, and Wyckoff, 'How Teacher Turnover Harms Student Achievement'; Sorensen and Ladd, 'The Hidden Costs of Teacher Turnover'; Aeschlimann, Herzog, and Sander, 'Irregular Teacher Turnover and Student Academic Achievement in High Schools'; Miller, Murnane, and Willett, 'Do Worker Absences Affect Productivity?'
[24] Dawson McLean, Jack Worth, and Andrew Smith, 'Teacher Labour Market in England Annual Report 2024'.
[25] Gibbons, Scrutino, and Telhaj, 'Teacher Turnover: Does It Matter for Pupil Achievement?'
[26] Carver-Thomas and Darling-Hammond, 'The Trouble with Teacher Turnover'.
[27] Sibieta, 'Teacher Shortages in England'.
[28] Miller, Murnane, and Willett, 'Do Worker Absences Affect Productivity?'
[29] Benhenda, 'Absence, Substitutability and Productivity'.
[30]

North Carolina varying by years of experience and schools' proportions of students receiving free or reduced-price lunches.[31]

[31] Speas, 'Teacher Absences'.

Data and methods

Data source and sample

This study uses microdata from the SWC, an administrative dataset collected annually by the Department for Education since 2010. The SWC provides comprehensive information on all teaching and support staff in state-funded schools in England, including qualifications, roles, experience, absence patterns, and curriculum information. We analyse data from the 2010/11 to 2023/24 academic years, providing over a decade of longitudinal workforce information.

The dataset covers approximately 460,000 teachers annually across roughly 20,000 state-funded schools (see appendix for more detail). This study focuses primarily on classroom teachers, senior leaders, and headteachers in mainstream primary and secondary schools. We exclude special schools, alternative provision, and independent schools due to their distinctive staffing structures.

Measuring school disadvantage

To examine workforce differences by school disadvantage level, we categorise schools into quintiles based on the percentage of pupils eligible for free school meals (FSM), a widely used proxy for socioeconomic disadvantage. Schools in the highest quintile of FSM eligibility (Q5) are classified as "disadvantaged" schools, while those in the lowest quintile (Q1) are classified as "affluent" schools. This approach aligns with previous research examining educational inequalities in England.[32] The FSM quintiles are recalculated for each academic year to account for demographic shifts over time.

Indirect measures of workforce effectiveness

Our analysis examines the three dimensions of workforce effectiveness discussed above: teacher experience, subject expertise, and workforce stability. For each dimension, we calculate school-level metrics and compare the quintile-average levels between disadvantaged and affluent schools. We examine both absolute values and the gap between quintiles over time to identify persistent patterns and trends. We present results separately for primary and secondary schools to account for their different organisational structures and workforce compositions.

Teacher experience

We measure teacher experience as the number of years since the teacher gained QTS. Experience is calculated at individual teacher level and then aggregated to create school-level means, with separate calculations for classroom teachers, senior leaders, and headteachers.

Subject expertise

For secondary schools, we assess subject expertise by calculating the percentage of lessons taught by teachers with relevant qualifications in the subjects they teach. To determine subject-

[32] Allen, Mian, and Sims, 'Social Inequalities in Access to Teachers'.

qualification relevance, we use the DfE's list of relevant subjects along with the information is extracted from the Curriculum module of the SWC, which provides detailed data on teaching hours by subject.

Workforce stability

We examine workforce stability through two sets of metrics:

- Turnover metrics:
  - **Annual turnover**: The percentage of teachers leaving a school within one academic year.
  - **Four-year cumulative turnover**: The percentage of teachers leaving a school within four academic years
- Absence metrics:
  - **Days of absence**: The average number of working days missed per teacher annually
  - **Absence spells**: The average number of separate absence episodes per teacher annually.

Together, these measures capture both the permanence of teaching staff and the consistency of their classroom presence, providing a broader view of stability in the learning environment than turnover alone.

Results

Persistent gaps in teacher experience

Our analysis reveals a substantial and persistent gap in teachers' experience between disadvantaged and affluent schools over the past decade. Secondary schools serving disadvantaged communities have teachers with, on average, 3 years less experience than their counterparts in affluent areas. That gap represents 30-40 per cent of the typical early-career development period for teachers.[33]

[33] Podolsky, Kini, and Darling-Hammond, 'Does Teaching Experience Increase Teacher Effectiveness?'

Figure 1: Trends in teacher experience by role and school type

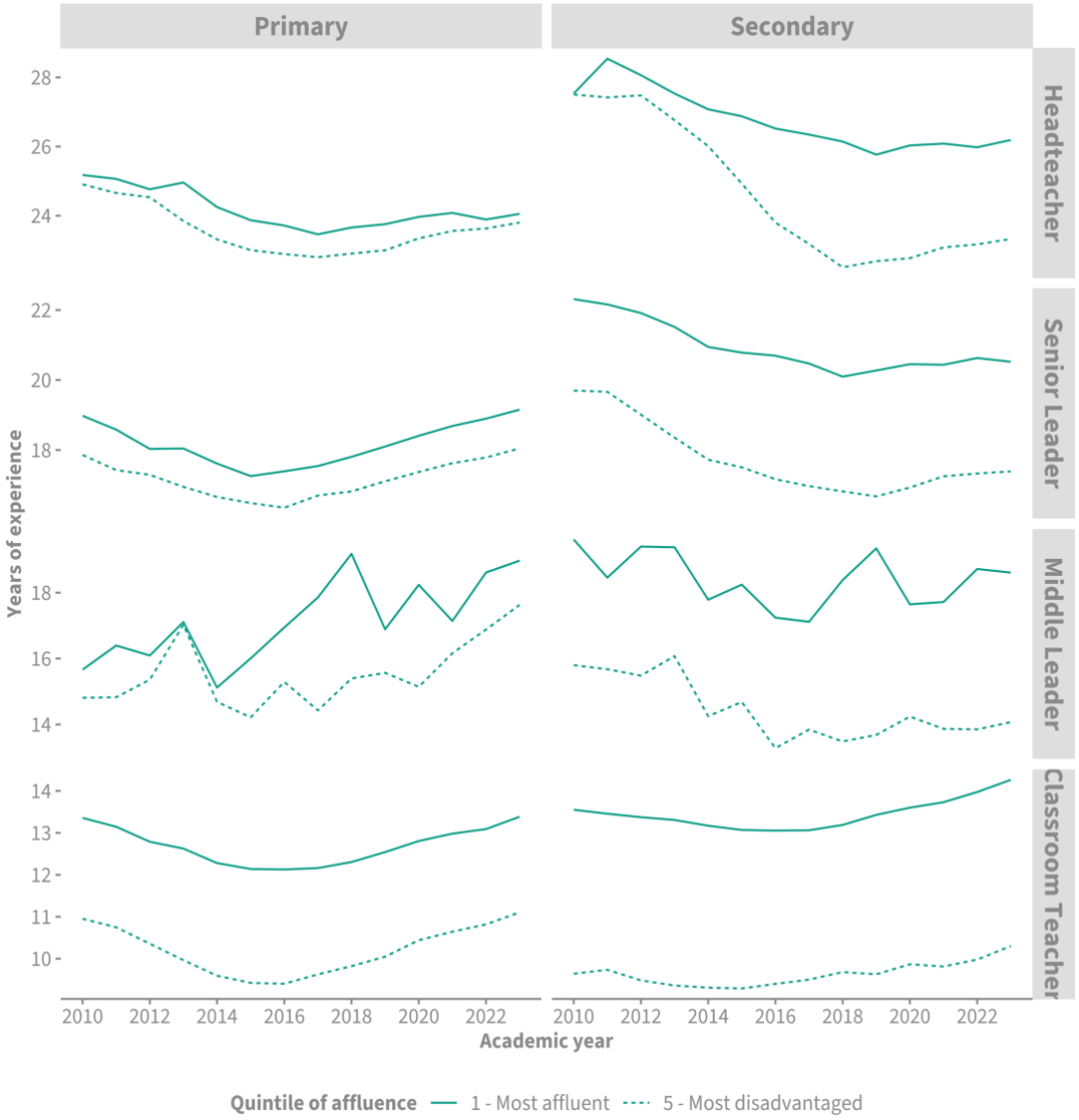


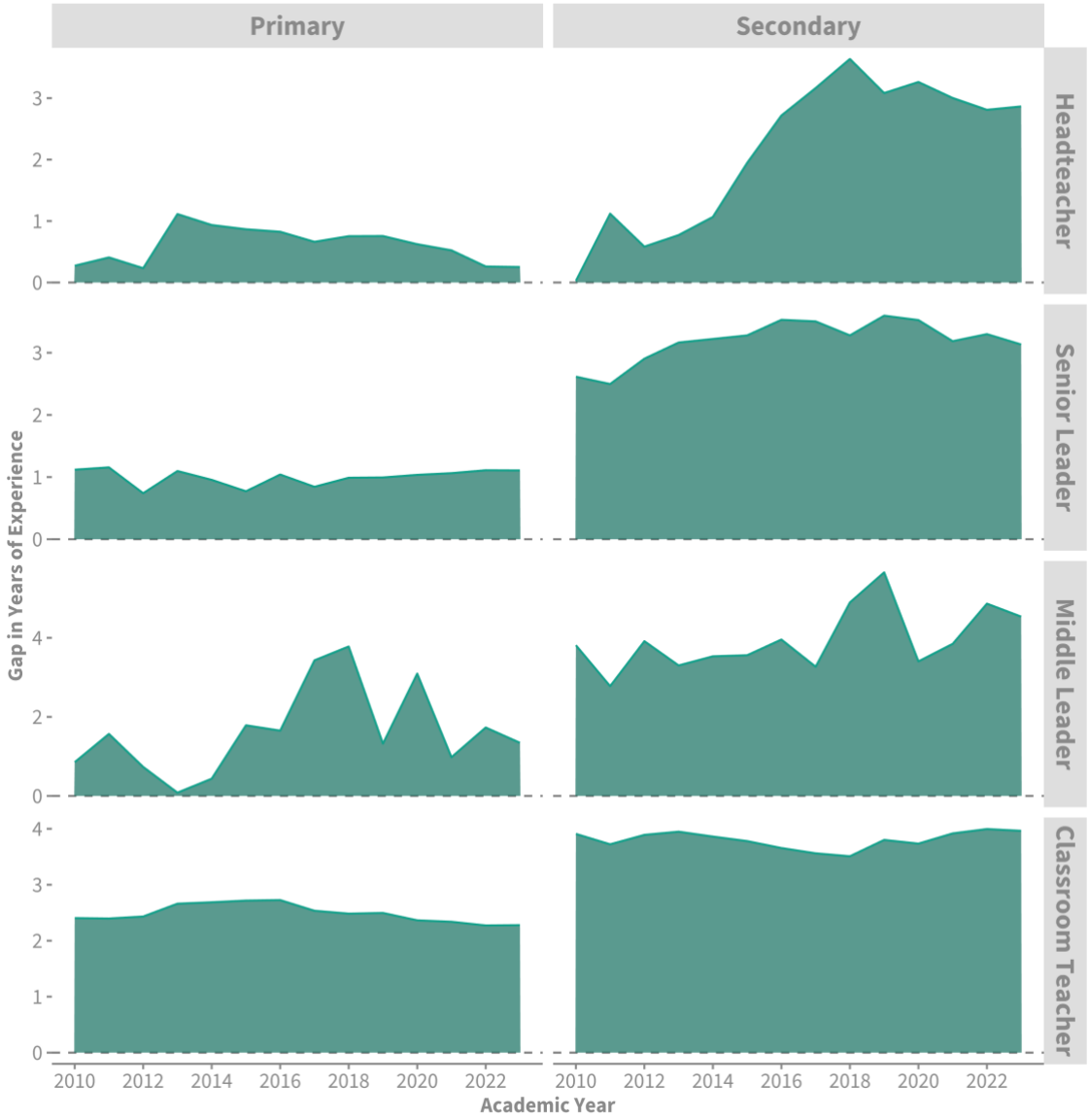
Figure 1 illustrates the experience gap across roles and school types. Looking at the data from 2010/11 to 2022/23, three things stand out:

- Secondary schools have a much wider gap in experience between affluent and disadvantaged schools.
- In primary schools, the gap is widest for classroom teachers but very small for leaders.
- The experience of secondary leaders has been falling since 2010/11, and the gap has grown dramatically for headteachers.

The average gap in secondary schools is about 3.5 years, whereas it is only 2 years in primary schools. However, that is still a notable gap: the average teacher has been in the classroom for about 12 years, so a gap of 2 years amounts to 15 per cent of a teacher's career.

These changes in the gaps are clearly illustrated in Figure 2, which shows the evolution of the gaps over time.

Figure 2: Experience gap between affluent and disadvantaged schools



The subject expertise divide

Our analysis shows that the proportion of lessons taught by subject specialists is up to 10 percentage points lower in disadvantaged schools, consistent with findings from Sibieta on the distribution of subject specialists.[34]

[34] Sibieta, 'Teacher Shortages in England'.

Figure 3: Trends in subject expertise in secondary schools

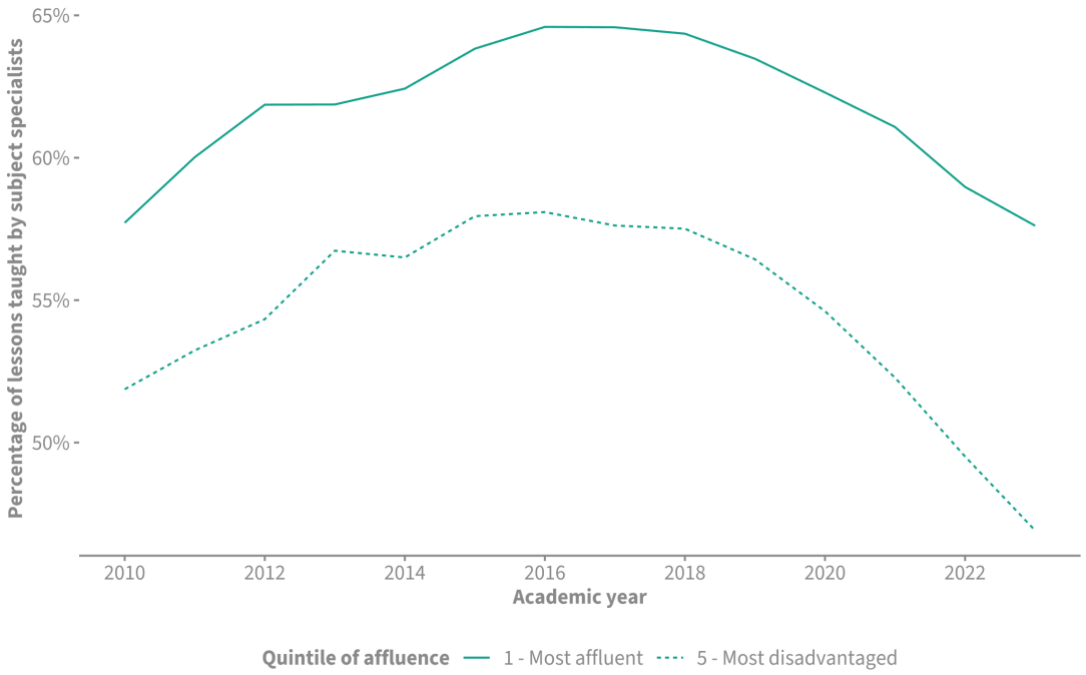
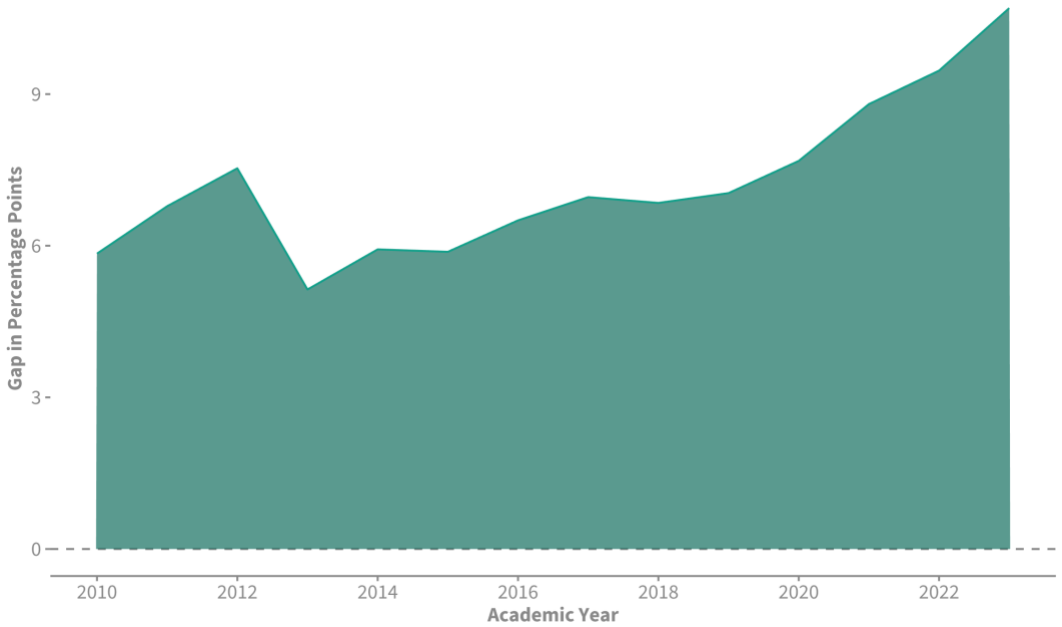


Figure 3 illustrates the subject expertise gap between affluent and disadvantaged schools. Looking at the data from 2010/11 to 2022/23, it is clear that the percentage of hours taught by someone with a degree in their subject has declined since 2016/17. At the same time, the disadvantage gap has widened from about 6 percentage points to over 10 percentage points (Figure 4).

Figure 4: Subject expertise gap between affluent and disadvantaged schools



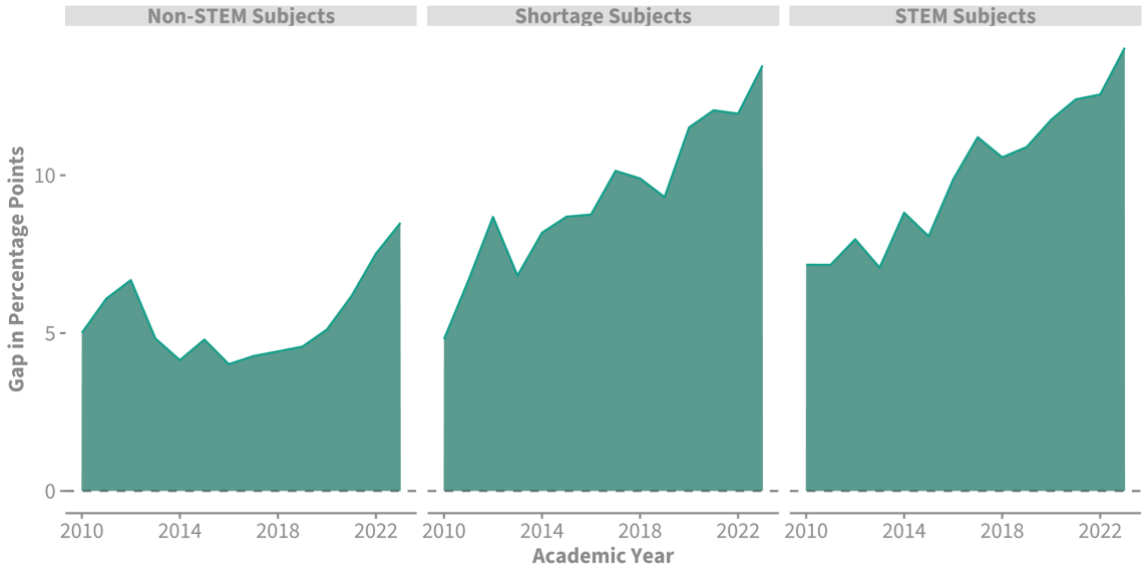
Examining the changes by subject (Figure 5) shows low levels of expertise in some STEM subjects, including physics, computing, and engineering, as well as media studies and languages.

Languages are less concerning because they are often taught by people with fluency in the language rather than a degree in the subject.

Not all subjects have a disadvantage gap in the proportion of lessons taught by subject specialists. For example, the gap in physical education is negligible and, in engineering the gap has narrowed over time. However, the overall trend is that disadvantaged schools are less likely to have teachers with relevant degrees in the subjects they teach, and that the gap is opening over time.

Grouping the subjects into three categories–STEM, shortage, and non-STEM–reveals that the gap in subject expertise is particularly pronounced in STEM subjects, where disadvantaged schools are 15 percentage points behind affluent schools. The growing gap in shortage subjects more widely reinforces the notion that schools with a disadvantaged intake are more likely to struggle to recruit and retain the expert teachers they need.

Figure 6: Subject expertise gap between affluent and disadvantaged schools



Workforce stability

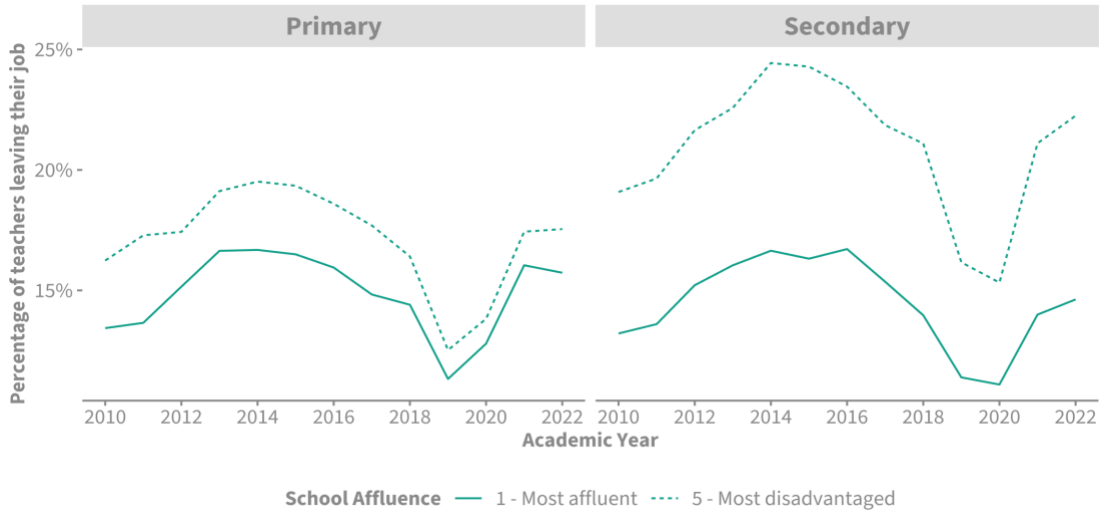
Staff turnover

Our analysis reveals that teacher turnover presents a persistent challenge for disadvantaged schools, with annual turnover rates consistently 5-8 percentage points higher in disadvantaged secondary schools compared to affluent ones. This pattern aligns with research from both the UK and internationally, which documents higher turnover rates in schools serving disadvantaged communities.[35] The gap in turnover is far lower in primary schools, though still persistent at 1-3 percentage points.

[35] Carver-Thomas and Darling-Hammond, 'The Trouble with Teacher Turnover'.

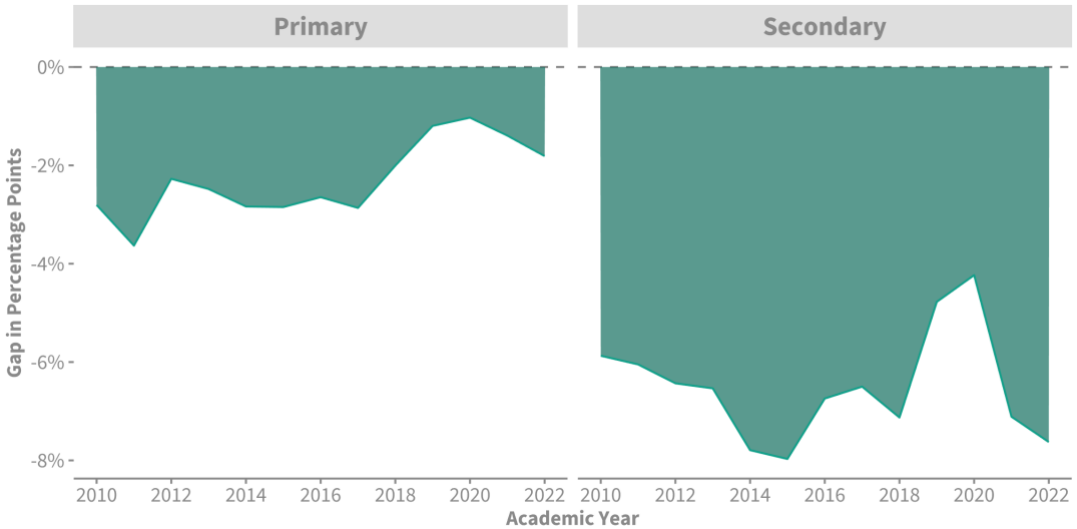
A notable feature of the turnover shown in Figure 7 is that affluent schools have very similar rates across primary and secondary schools. The well-known fact that secondary turnover is far higher is a consequence of much higher turnover among the secondary schools serving disadvantaged students.

Figure 7: Trends in annual teacher turnover by school type



The high in turnover at secondary schools serving disadvantage pupils leads to a far larger disadvantage gap in secondary than in primary schools (Figure 8). In primary schools in 2023/24, the gap is less than 2 percentage points, while in secondary schools it is over 7 percentage points. In addition, the gap has slightly closed in primary schools since 2010/11, whereas is has been widening in secondary schools, with the exception of the unusual period during the COVID-19 pandemic.

Figure 8: Annual turnover gap between affluent and disadvantaged schools



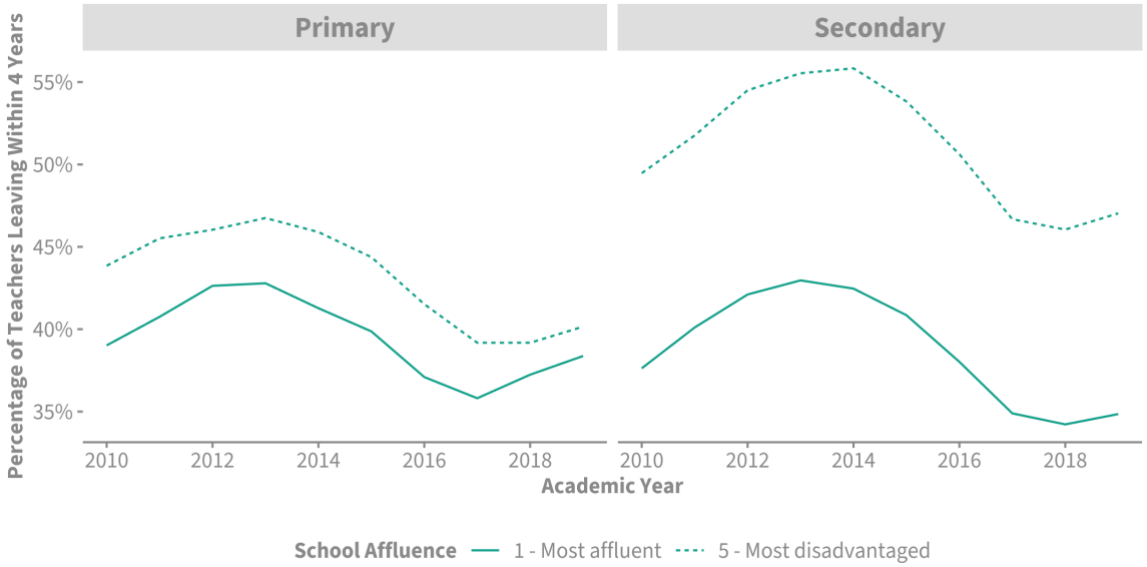
This turnover disparity creates multiple challenges for disadvantaged schools:

- Financial costs: The cost of recruiting and training a new teacher diverts resources from educational provision.
- Leadership capacity: School leaders in disadvantaged settings must devote disproportionate time to recruitment and induction rather than instructional leadership.
- Institutional knowledge loss: High turnover erodes school-specific expertise and disrupts improvement initiatives.[36]
- Educational discontinuity: Pupils experience disrupted learning experiences and must adapt to new teaching styles and expectations, with Aeschlimann, Herzog, and Sander demonstrating that irregular teacher turnover reduces student achievement across multiple subjects.[37]

Cumulative turnover over four years

The 4-year cumulative turnover figures reveal an even more concerning picture: over half of the teaching workforce in disadvantaged secondary schools sometimes turns over within a four-year period, compared to nearer 40 per cent in affluent schools (Figure 9).

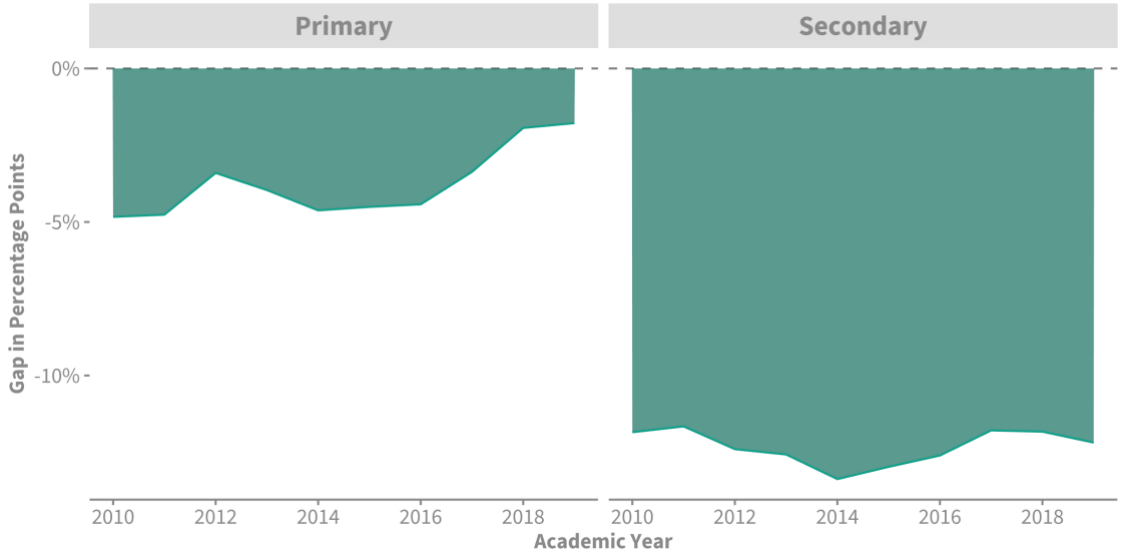
Figure 9: Trends in 4-year cumulative teacher turnover by school type



The four-year cumulative turnover data illustrates the instability in disadvantaged secondary schools, relative to their more affluent peers (Figure 10). Where the primary gap in cumulative turnover has halved since 2010/11, the gap in secondary schools has remained around 13 percentage points.

[36] Sorensen and Ladd, 'The Hidden Costs of Teacher Turnover'.
[37] Aeschlimann, Herzog, and Sander, 'Irregular Teacher Turnover and Student Academic Achievement in High Schools'.

Figure 10: 4-year cumulative turnover gap between affluent and disadvantaged schools



This chronic instability undermines sustained school improvement efforts and disproportionately affects disadvantaged pupils, who benefit most from consistent, high-quality teaching. Jennifer Jellison Holme et al. emphasise how persistent turnover creates "chronic instability" that makes it nearly impossible for schools to implement and sustain improvement initiatives.[38] The persistence of these turnover gaps over more than a decade suggests that existing policy approaches have failed to address the causes of higher turnover in disadvantaged settings.

Turnover by seniority

Examining turnover trends by seniority (Figure 11) show that the gap in secondary schools is present across all levels of seniority, whereas primary schools see the gap narrow as teachers become more senior.

[38] Holme et al., 'Rethinking Teacher Turnover'.

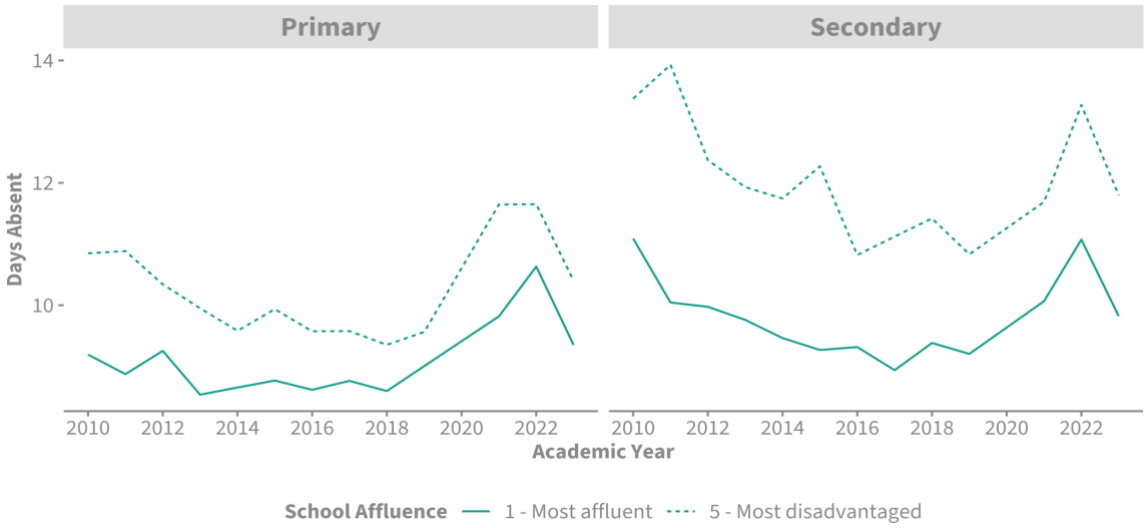
Figure 11: Trends in annual teacher turnover by role and school type

Teacher absences

In addition to higher turnover rates, our analysis shows that teachers are consistently absent for more days each year in disadvantaged schools, particularly at the secondary level. This finding aligns with our previous work, which found that teachers in disadvantaged schools outside London take approximately 50 per cent more sick leave than those in more affluent schools.[39] However, here we are looking more broadly at all time out of the classroom.

[39] Sibieta, 'The Teacher Labour Market in England'.

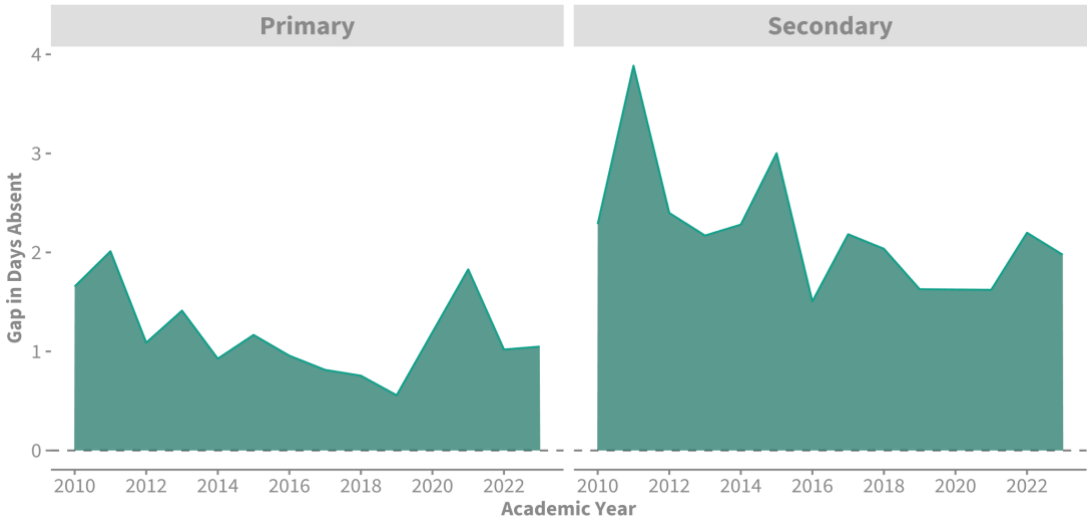
Figure 12: Trends in teacher absences by school type



The data also reveals differences between phases. In 2010/11, teachers in disadvantaged secondary schools were absent for an average of 7.8 days per year, compared to 6.0 days in affluent schools. By 2022/23, these figures had increased to 8.2 days and 6.3 days respectively. The data shows a peak in absences in 2021/22, during the COVID-19 pandemic.

For primary schools, days of absence are generally higher across all school types, but the disparity persists: in 2010/11, teachers in disadvantaged primary schools were absent for 8.6 days on average versus 7.3 days in affluent schools. By 2022/23, these rates had increased to 9.5 days and 8.1 days respectively. The pandemic-related peak in 2021/22 is even more pronounced in primary settings, with absence rates reaching 11.2 days in disadvantaged schools and 9.5 days in affluent schools.

Figure 13: Absence gap between affluent and disadvantaged schools



The absence gap has remained remarkably consistent over time. For secondary schools, the gap ranged from 1.7 to 2.0 days throughout the period, standing at 1.9 days in 2022/23. For primary

schools, the gap fluctuated between 1.3 and 1.7 days, ending at 1.4 days in 2022/23. Interestingly, the gap did not widen significantly during the pandemic, suggesting that COVID-19 affected teacher absences across all school types in a relatively similar manner.

Absence spells

The number of absence spells is another important metric, as it indicates the frequency of absences rather than just the total number of days missed. Figure 14 shows the number of spells of absence per teacher, per year. The data shows that teachers in secondary schools have twice as many spells of absence as teachers in primary schools. However, there is no disadvantage gap at secondary schools, whereas there is a persistent gap in primary schools.

Figure 14: Trends in teacher absence spells by school type

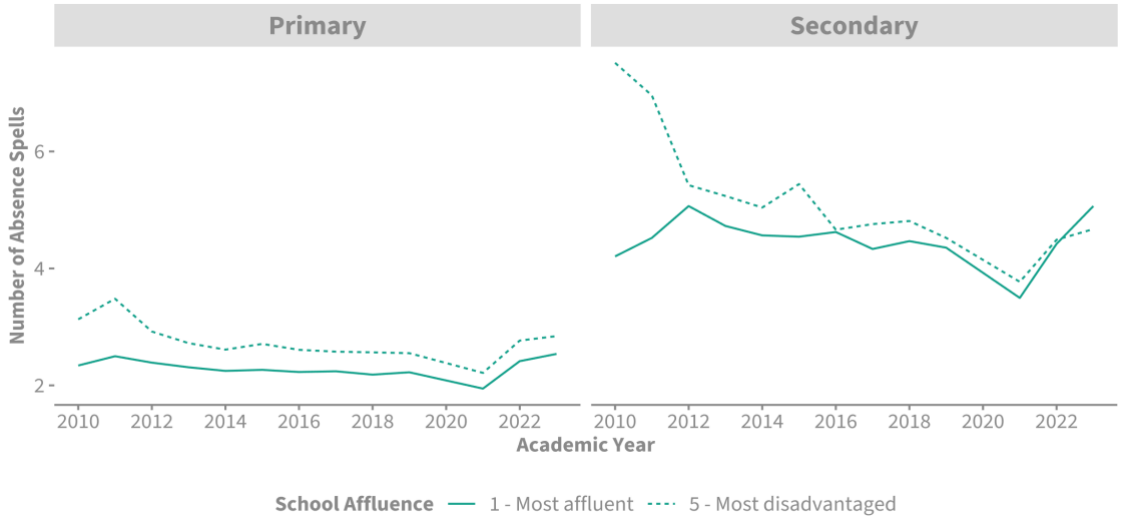
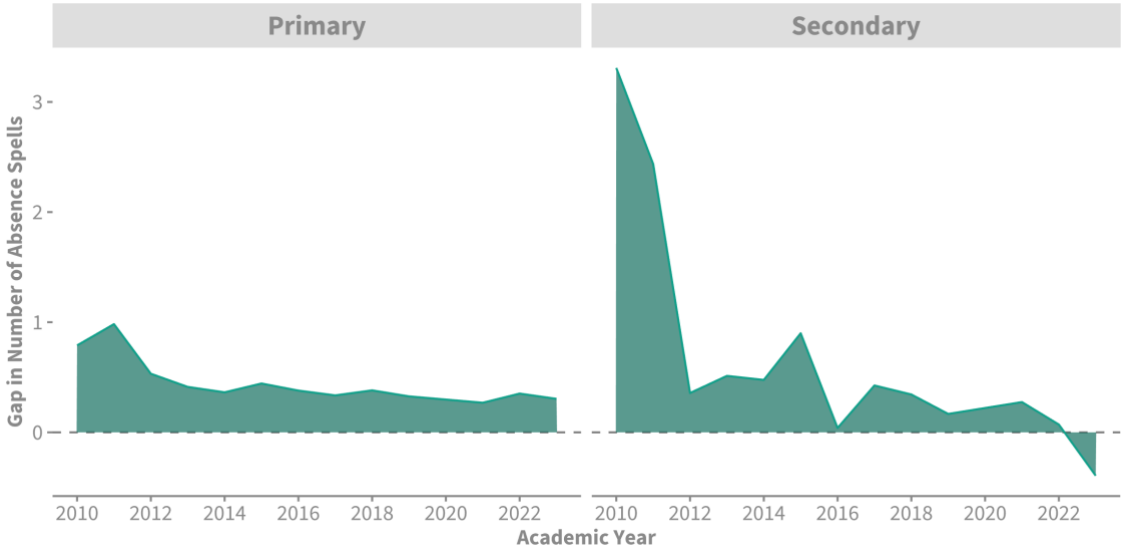


Figure 15 shows the gap in absence spells between disadvantaged and affluent schools. The gap is about 0.5 spells per teacher per year in primary schools, but negligible in secondary schools. The gap has also declined over time, as have the number of spells.

Figure 15: Absence spells gap between affluent and disadvantaged schools



Combined effect on instructional stability

When examined together, these stability metrics reveal a concerning pattern: disadvantaged schools face both higher permanent teacher loss through turnover and more frequent temporary absence of teachers who remain. This creates instability in the learning environment that may be particularly detrimental to disadvantaged pupils, who often benefit most from consistent, high-quality instruction.

The stability gap manifests differently across primary and secondary schools. In primary schools, the turnover gap has narrowed over time while the absence gap has remained relatively stable. In secondary schools, the turnover gap remains substantial despite policy interventions, and the absence gap has been persistently higher than in primary settings. The persistence of these stability gaps over more than a decade suggests that existing policy approaches have failed to address the underlying causes of workforce instability in disadvantaged settings.

Policy implications and recommendations

When examined together, these metrics reveal how workforce challenges compound for disadvantaged schools. The persistent gaps across experience, expertise, stability, and attendance create workforce weaknesses that undermine efforts to improve educational outcomes for the most vulnerable pupils.

Secondary schools face particularly severe challenges, with significant gaps across all metrics. A disadvantaged secondary school pupil is likely to be taught by less experienced teachers, with weaker subject expertise, in an environment of higher staff turnover and absence. Each of these factors is associated with poorer educational outcomes.

The government's opportunity mission explicitly aims to break down barriers to social mobility, with education identified as a primary mechanism. However, our findings suggest that educational opportunity may be constrained by workforce inequalities that have proven resistant to the past 15 years of policy interventions. The longitudinal patterns observed over a decade indicate that previous policies have been insufficient to address the sorting of teachers that disadvantages low-income pupils.

Interpreting the results

Interpreting the workforce patterns documented in this report is not straightforward. Research by Hanushek and Rivkin and others has found that observable teacher characteristics, like experience and qualifications, explain relatively little of the overall variation in teacher effectiveness, as measured by value-added.[40] That suggests the patterns we find may not be important causes of the disadvantage gap in attainment. However, schools consistently demonstrate preferences for teachers with more experience and stronger subject expertise when making hiring decisions. This suggests two possible interpretations of our findings:

- **Resource constraints**: Disadvantaged schools are unable to recruit and retain teachers with characteristics that schools generally value, resulting in a workforce deficit that compounds educational disadvantage. Not everything that matters might be measured, but the unmeasured components of effectiveness are correlated with the observable characteristics we can measure.
- **'Moneyball' selection**: Disadvantaged schools, knowing they cannot compete for the most desirable teachers, may be selecting for characteristics not captured in our data (such as specific pedagogical approaches, relationship-building skills, or commitment to equity), potentially maintaining educational quality despite differences in observable characteristics.

The existing evidence base more strongly supports the first interpretation, as studies have documented measurable negative effects from inexperience and weak subject knowledge. We are

[40] Hanushek and Rivkin, 'The Distribution of Teacher Quality and Implications for Policy'.

also measuring workforce characteristics at the school level, such as turnover and absences, which are unobservable at the point of hiring. The correlation between these measures lends support to the first interpretation. However, we cannot definitively rule out the second interpretation without better direct measurements of teaching quality (eg value-added) across different school contexts.

Recommendations

This report sets out the evidence on the disadvantage gap in the teaching workforce, and its evolution over time. It documents the problems, rather than evaluating solutions, so it cannot support strong policy recommendations, beyond the need to do more than is presently done. However, there are existing solutions that may be able to help with the problems set out above.

- **Teacher retention incentives**: The results reinforce the need for targeted financial mechanisms to retain experienced teachers with subject expertise in disadvantaged schools. The existing retention payment schemes have proven helpful but the persistence of the experience gap over a decade indicates that they have been insufficient to counteract labour market sorting processes.[41] Further research is required to understand the magnitude of the incentives that would offset the sorting effect under current labour market conditions. It may be that other schemes, which improve the working conditions of teachers, will eventually make these incentives redundant, but they should be calibrated to current conditions and then revised as required.
- **Professional development infrastructure**: The concentration of inexperienced teachers in disadvantaged schools may benefit from enhanced professional support structures. Research indicates that environmental factors mediate the relationship between experience and effectiveness, and more supportive professional environments can accelerate teachers' learning.[42] Support structures such as the Early Career Framework, and National Professional Qualifications for teacher development, may accelerate teachers' learning in challenging contexts, potentially mitigating some effects of the experience gap. The government presently funds qualifications for teachers in the most disadvantaged settings and this data supports that approach.
- **Leadership training to promote stability**: The data reveals that disadvantaged schools face both higher turnover and more teacher absences, creating instability in the learning environment. A coordinated approach that addresses both issues simultaneously could be more effective than treating them separately. This might include:
    - Financial retention incentives to reduce permanent departures.
    - Improved working conditions and support systems to reduce both turnover and absence.

[41] Sims and Benhenda, 'The Effect of Financial Incentives on the Retention of Shortage-Subject Teachers: Evidence from England'.
[42] Rice, 'Learning from Experience?'; Kraft and Papay, 'Can Professional Environments in Schools Promote Teacher Development?'

    - Well-designed absence management policies with appropriate incentives and supports.
    - School-wide strategies that build institutional resilience to both forms of instability. All of these require strong, effective leadership and EPI's previous work shows that weak leadership is associated with greater instability in school workforces.[43]
- **Improved measurement of teaching quality**: The persistent gaps in observable teacher characteristics documented in this report highlight the need for better measurement of actual teaching quality across different school contexts. More sophisticated approaches to measuring instructional quality would help determine the extent to which differences in observable characteristics translate into differences in educational experiences for pupils. This could include allowing school workforce and pupil attainment data to be linked for research purposes to construct value-added measures that would help to better understand the sorting in the labour market.

[43] Zuccollo et al., 'The Influence of Headteachers on Their Schools'.

Annex

Dataset

The SWC is collected annually by the DfE in November. We used the microdata provided by the DfE for this project, which gave us an analysis dataset described below.

Table 1: Number of teachers in sample, by year

Year	Number of teachers
2010	444845
2011	439821
2012	451664
2013	455916
2014	463805
2015	465920
2016	465380
2017	462506
2018	461996
2019	466653
2020	473213
2021	476174
2022	475781
2023	473000

Table 2: Number of teachers in sample, by seniority

Seniority	Number of teachers
Classroom Teacher	881,204
Headteacher	49,012
Middle Leader	18,453
Senior Leader	126,049

Table 3: Number of schools in sample, by year

Year	Number of schools
2010	20,037
2011	19,740
2012	19,909
2013	19,969
2014	20,044
2015	20,046
2016	20,042
2017	20,063
2018	20,079
2019	20,154
2020	20,146
2021	20,140
2022	20,139
2023	20,135

Data processing and definitions

Experience calculation

Teachers' experience was calculated based on the number of academic years since a teacher gained QTS. This is a proxy measure that may overestimate total teaching experience for teachers who had career breaks.

Subject expertise calculation

Expertise is proxied in the same way as in the DfE's School Workforce in England publication. We use undergraduate degrees, and the DfE's list of relevant subjects, to identify whether the teacher's qualification is relevant for the subject they teach. To map qualifications to relevant subjects, we used the Subject to Qualification Codes Mapping from HESA. We then calculated the percentage of hours taught by a teacher with a relevant qualification at a school level. The total number of hours taught by the school and the subject taught by each teacher was extracted from the Curriculum data table within the School Workforce Census.

Turnover measures

Annual turnover

Annual turnover measures the proportion of teachers who leave a school within one year, relative to the total number of teachers present at the school in that year:

$$Turnover_{1yr,y} = \frac{\sum_i 1(leaving)}{N_y}$$

Where:

- $1(leaving)$ is an indicator function that equals 1 if teacher i leaves in year y (i.e., their last year at a school is y).
- N_y is the total number of teachers present at the school in year y, excluding those for whom we don't know their leaving status (i.e., teachers still at the school in the last observed year of the dataset).

4-year cumulative turnover

4-year cumulative turnover measures the proportion of teachers who leave a school within four years:

$$Turnover_{4yr,y} = \frac{\sum_i 1(leaving\ within\ 4\ years)}{N_y}$$

Where:

- $1(leaving)$ is an indicator function that equals 1 if teacher i leaves the school within 4 years of the observed year y.
- N_y is the total number of teachers present at the school in year y, excluding those for whom we don't know the leaving status.

Turnover calculation process

- We identify leavers:
    - For 1-year turnover: a teacher is considered a leaver if their last year at the school is the current year y, and they do not reappear in future years.
    - For 4-year turnover: a teacher is counted if their last year at the school is within 4 years after year y.
- We exclude teachers for which we don't know the leaving status (teachers still present in the final year of data are assumed to still be in the school).
- We calculate school-level turnover by aggregating the number of leavers in a school-year and dividing by the total number of teachers at the school in that year.

Our turnover metrics count teachers who leave a school both because they leave the teaching profession entirely and because they move to another school.

Absence calculation

Our absence metrics include both sickness absences and unexplained absences, which differs from some other publicly available statistics that only include sickness absences. Days absent are calculated based on working days missed, and absence spells count each continuous period of absence.

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