



Department
for Education

Schools workforce in England 2010 to 2015: trends and geographical comparisons.

September 2016

Executive summary.

This report builds on the statistics presented in the annual School Workforce Census Statistical First Release (hereafter the SFR)¹ by providing further analysis of trends and geographic comparisons of the data from 2010 to 2015. The data are analysed at the government office regions level, with London being divided into Inner and Outer London.

Given detailed underlying data have already been published alongside each SFR; this report does not seek to provide an exhaustive or comprehensive set of fine-grained data. Instead, it aims to generate new insights by combining selected parts of the census and linking the data to alternative geographical classifications. It is intended to be an accessible resource to stimulate debate, improve the public understanding of our data, and generate ideas for further research, rather than to provide authoritative answers to research questions.

The report brings together different strands of new analysis and as such is structured in four distinct sections:

Section 1 provides a regional breakdown of the national trends in teacher numbers by phase and pupil teacher ratios.

As reported in the SFR, the overall number of full-time equivalent (FTE) teachers has increased over time; a larger increase at primary level outweighing a small decrease at secondary. This is broadly replicated in all regions and largely mirrors changes in the pupil population – this is reflected in ratios of pupils to teachers (PTRs) that remains broadly consistent over the last five years; within this, Inner London has had consistently lower ratios.

Section 2 covers trends in teacher mobility, looking at regional analysis of entrant and wastage data, and including new analysis looking at school-to-school mobility (the movement of teachers from one state-funded school to another) .

When considering all movements in and out of a school, this analysis shows that school-to-school mobility is now the biggest source of new entrants to schools – and is therefore a key driver of increased recruitment activity in schools.

In 2015 school-to-school mobility accounted for 40.6% of all entrants to primary schools and 44.3% for secondary schools compared to 34.0% and 29.4% respectively in 2011. Underlying this change, the number of teachers in a year who move to another state-funded school is estimated to have nearly doubled between 2011 and 2015 (from 10,400 to 18,200 entrants to primary schools and from 8,300 to 16,500 entrants to secondary schools) .

¹ <https://www.gov.uk/government/collections/statistics-school-workforce>

This increasing trend of school to school mobility is seen in all regions, with the highest figures in Inner London. Further work is needed to understand the drivers of this change, and to what extent it reflects wider job mobility in the economy. This includes looking at the demographics of teaching profession – as it is becoming a younger workforce.

Section 3 explores further analysis of reported vacancy data.

The SFR reports a fairly constant low vacancy rate of 0.2% of teachers in post. A new vacancy measure is included in this report – the proportion of schools reporting at least one classroom teacher vacancy. This measure has shown some variation across the regions since 2010, with London consistently having the highest proportion.

Unsurprisingly, the proportion of schools reporting vacancies has increased as school-to-school mobility increased.

Section 4 compares workforce data across different types of schools and areas.

This shows that schools in areas with a high level of deprivation had slightly higher rates of school-to-school mobility and wastage. Within these higher deprived areas, those that were inland urban areas had the highest rate of leavers to other schools, and those that were coastal rural areas had the highest rate of teachers leaving the sector entirely.

Urban schools in general recruited a higher number of newly qualified teachers (NQTs). Further research is needed to understand the underlying reasons for these differences.

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Introduction.

This report provides a regional view of the information available in the School Workforce Census (SWC). The report comes at time of increasing interest in more localised information (including the recent National Audit Office and Public Accounts Committee reports on Training New Teachers²) and helps support the evidence base on what we know to be happening below the national level.

The report also supports the commitment in the White Paper: *Educational Excellence Everywhere* by demonstrating *we are taking steps to improve our understanding of how the teacher labour market varies between schools in different areas.*

We would welcome feedback on the methods used and insights generated in this report, to inform future research and development of future publications using the SWC.

Please send your views to: TeachersAnalysisUnit.MAILBOX@education.gsi.gov.uk

Background: the School Workforce Census.

The annual School Workforce Census was introduced in November 2010, replacing a number of different workforce data collections. It collects information on school staff from all state-funded schools in England; including local-authority-maintained (LA-maintained) schools, academy schools (including free schools, studio schools and university technology colleges) and city technology colleges, special schools and pupil referral units (PRU)³.

The statistical first release (SFR) “School Workforce in England” provides the main annual dissemination of statistics based on the data collected, as well as details of the underlying methodology for those and the collection itself. The latest publication was released in June 2016, with results from the November 2015 census⁴. Alongside the SFRs, an underlying dataset is released, giving some of the workforce statistics at school level alongside details of regions, LAs, wards and parliamentary constituencies. The information is used by the Department for Education for analysis and modelling, including the Teacher Supply Model⁵, as well as research purposes.

² <https://www.nao.org.uk/report/training-new-teachers/>
<http://www.publications.parliament.uk/pa/cm201617/cmselect/cmpublicacc/73/7302.htm>

³ It collects information from LAs on their centrally employed teachers but does not cover early years settings, non-maintained special schools, independent schools, sixth form colleges and other further education colleges.

⁴ ‘School workforce in England: November 2015’, Department for Education (2016). Available at: <https://www.gov.uk/government/collections/statistics-school-workforce>

⁵ More information on the Teacher Supply Model can be found at: <https://www.gov.uk/government/publications/teacher-supply-model>

Aims of the report.

Whilst underlying data are published separately each year, the workforce census data are designed in the main to provide aggregate national statistics, including time series in a subset of variables at this level. The latest SFR includes results generated using the Department's new teacher dataset, which matches individual teacher records across years - enabling us to improve data quality and better ensure consistency over time. With these improvements in place and with six census collections completed, this report takes an opportunity to re-examine the data, providing new insights on trends over time and patterns across different types of school and different parts of the country.

Some of the comparisons made have not been published before, nor have they been subject to external scrutiny, and the most recent data are from the latest School Workforce Census covering November 2015, so **this report does not replace the SFR as the authoritative source of the latest school workforce statistics.**

The report is designed to look at some of the key questions around the school workforce in order to improve our understanding of these areas. These chapters are designed to be standalone analysis to cover key themes while the executive summary pulls together some of the key findings into a brief overarching narrative.

We would welcome feedback on the methods used and insights generated in this report, to inform future research and development of future publications using the SWC.

Please send your views to: TeachersAnalysisUnit.MAILBOX@education.gsi.gov.uk

Organisation of the report.

The following section outlines the methodology used in the study along with key caveats to consider alongside the findings. Findings are then presented in four distinct chapters covering:

- 1. the composition and deployment of the school workforce** – including regional trends in teacher and overall workforce numbers relative to pupils, analysis of the distribution of teaching across subjects in secondary schools by subject specialists, and trends in the employment of unqualified teachers;
- 2. trends in teacher mobility** – including changes in teacher leaving and entrant rates, by source or destination, and the number of teachers moving between state-funded schools;
- 3. classroom and head teacher vacancies** – including an analysis of the proportion of schools reporting vacancies and the 'churn'⁶ over time;

⁶ Churn is defined as the movement of teachers that drives the changes in the workforce.

4. comparing workforce data across different types of school – taking a small number of school-level workforce measures and exploring their associations with school sector, the rural/urban characteristics of the surrounding area, whether the school is in a coastal area, local levels of deprivation and pupil disadvantage within the school.

Accompanying this report, the figures used here are published alongside their underlying data in Excel format and data tables covering other findings quoted in the text. [Annex 1](#) lists these and the Excel file can be found at:

<https://www.gov.uk/government/statistics/School-workforce-in-England-2010-to-2015-trends-and-geographical-comparisons>

Numbers for Figures in the report correspond to the relevant Table number, and as such are not always sequential.

[Annex 2](#) provides more detail on the workforce variables assessed here and the geographical classifications employed.

Methodology.

This study uses data from a variety of sources to analyse whether there are differences in the schools workforce in different geographical areas of England. This includes the School Workforce Census, information on school characteristics and those of the local area.

The primary source of data is the School Workforce Census, an annual collection of the composition of the schools workforce in England employed in: local-authority-maintained nursery, primary, secondary and special schools; all primary, secondary, and special academy schools; and free schools. Data have been included from each of the censuses from 2010 to 2015.

For more information on how the School Workforce Census data is collected and how the statistics are produced see the statistical first release (SFR):

<https://www.gov.uk/government/collections/statistics-school-workforce>.

These data have been supplemented with schools' data collected from EduBase, a register of educational establishments in England and Wales, maintained by the Department of Education. It provides information on establishments providing compulsory, higher and further education.

More information on EduBase is available here:

<http://www.education.gov.uk/edubase/home.xhtml>

This paper looks at local-authority-maintained nursery, primary and secondary schools and all primary and secondary academy schools and free schools in England. Special schools and pupil referral units have not been included in the analysis. This is because the numbers of teachers are significantly smaller for these schools thus making comparisons across the different classifications much more unreliable.

Most of the comparisons in this study are made on a regional basis using the nine government office regions with London split between Inner and Outer London. In Chapter 4, comparisons are instead made across different types of schools based on some geographical characteristics of the area in which they are located. On all figures in this report, England (ENG) is used to refer to the national average. For the figures in Chapters 1 to 3, initials are used to represent the government office regions as follows:

NE:	North East.	EE:	East of England.
NW:	North West.	SE:	South East.
YH:	Yorkshire & Humber.	SW:	South West.
EM:	East Midlands.	IL:	Inner London.
WM:	West Midlands.	OL:	Outer London.

See [Annex 2](#) for the areas included in Inner London.

In most cases comparisons that are made are split so all primary schools and all secondary schools are compared across regions and geographical classifications. In some cases these comparisons have been made on an annual basis from 2010 to 2015; this is where a particular trend over time is of significant interest. For other indicators, data from just 2015 have been used; this is where the comparison that is of more interest is between the different regions and geographical classifications.

Where averages are reported for regions, they have been weighted by the number of teachers in each school in that region. This means that all the data from schools in any given region and phase have been pooled together before the average is calculated, as opposed to an average being taken of each school's figure in that region and phase. In some cases the number of teachers has been calculated using the number of full time equivalent (FTE) teachers; in other cases a total headcount of teachers has been used instead. The measure selected is the one most appropriate to the particular variables being explored. For instance, in comparisons of teaching hours and impacts on pupils (e.g. pupil:teacher ratios), FTE figures are used; however, for workforce flow measures, it make more sense to quote headcount figures.

In this report changes over time and differences between areas are described in terms of percentage points changes as opposed to a percentage change. This is the unit difference between two percentages as opposed to the ratio in which something has changed. For example if a percentage has risen from 10% to 15% in one year, this is an increase of 50% over a year but is a change of 5 percentage points.

This study looks to see where there are any differences between schools, in terms of the supply and retention of teachers, based on different geographical classifications. One geographical feature is the rurality of a school which has been defined in 2011 by Department for Environment Food and Rural Affairs (DEFRA). These DEFRA [definitions of rurality](#) place each area in one of five categories: mainly rural; largely rural; urban with significant rural; urban with city and town; and urban with conurbation⁷.

Another geographical classification used in the study is whether a school could be classed as coastal or inland. For this study the definition that is used is that any school where the postcode is within five miles of the coast has been deemed to be a coastal school. This covers approximately 15% of all the schools in England. The reason for looking at coastal and inland schools is to see whether there is any difference in trends around the workforce in schools where the supply may be restricted by being on the coast.

The study also uses the [score for the Index of Multiple Deprivation](#) (IMD), published in 2015, to look at the differences in the workforce in schools based on of the area in which

⁷ 'Urban with conurbation' combines the two DEFRA classifications 'urban with minor conurbation' and 'urban with major conurbation'.

the school is situated, as defined by the Department for Communities and Local Government. The lower super output area⁸ where each school in England is located was identified, and the 2014-2015 School Workforce Census returns were separated into five equal groups (quintiles) based on the IMD score of each school, e.g. the 20% of schools with the lowest IMD scores were placed in group 1 and so on.

As well as looking at the deprivation of the area in which the school is situated the study looks at the levels of deprivation of the pupils within a school. The measure used for this is the percentage of pupils within the school who are eligible to receive free school meals. As with the IMD, the schools were split into five equal groups, with the 20% of schools with the lowest percentage of pupils eligible for free school meals placed in group 1 and so on.

Caveats

The increase in the number of academies over this time period means that some of the differences between academies and maintained schools may be due to the increasing number of academies rather than anything else. This has not been fully explored in this study.

The effects on schools which are near both the England-Scotland and England-Wales borders have not been taken into account. This may have effects on some of the indicators for these schools, particularly regarding entrants and leavers, but it has not been included here for simplicity.

Also, the effects of centrally employed teachers⁹ have not been taken into account in this analysis: it is possible that some areas may have higher numbers of centrally employed staff than other areas which could affect the results of this study.

The two most recent years of the teacher flow figures presented in Chapters 2, 3 and 4 are classed as provisional because they are derived using administrative sources which take longer to update. See the main School Workforce Census SFR for more details.

Wherever possible, the methodology used in this report mirrors the methodology used in the School Workforce Census SFR. In certain cases, typically where regional splits are

⁸ Lower super output areas are a geographic hierarchy designed to improve the reporting of small area statistics in England and Wales. For more information see: <http://neighbourhood.statistics.gov.uk/HTMLDocs/nessgeography/superoutputareasexplained/output-areas-explained.htm>

⁹ Centrally employed teachers include: peripatetic teachers - teachers who normally cover a number of schools each week on a regular timetable, usually because they possess some specialist knowledge e.g. music teachers; and teachers working in other non-school education - staff employed as teachers in institutions other than schools and PRUs, e.g. teachers in hospitals or centres run by social services, or those providing home tuition. This can also include advisory teachers - these are often qualified teachers that carry out a range of duties including training staff, helping develop and implement school policy and classroom support.

provided, the figures presented here may slightly differ from the figures in the SFR, e.g. due to a slightly different treatment of missing data. There are two key methodological differences in these publications;

- a. Vacancies: The main School Workforce Census SFR reports an overall vacancy rate of 0.2%. This is based on the number of classroom teaching and leadership positions that are considered as a vacancy on the census day as a proportion of all positions. This publication reports the *proportion of schools* within a region which have at least one advertised vacancy or temporarily-filled post on the census day in November. This shows a rate of 6.9% for primary and 23.0% for secondary in 2015.
- b. Hours taught in certain subjects by a teacher with a relevant post A-level qualification: The main School Workforce Census SFR reports this information for the year in question, the latest being in 2015. For this publication we have taken a new experimental approach to link the qualifications of teachers across all six years of the SWC returns. This means if a teacher obtains a new relevant qualification in later years, or if records are updated (for example when a teacher moves schools) then we would now count them as a specialist. This means that a higher rate of teachers now show having a specialist qualification.

Year	2010	2011	2012	2013	2014	2015	Specialist
SWC:	x	x	x		x		No
Report:	x	x	x		x	x	Yes

For example, the table above shows the qualification status of an imaginary teacher, with relevant specialist qualifications shown as an “x” in the cell for the relevant year. Notice that, for some reason, qualification information is missing in the years 2013 and 2015. The School Workforce Census considers only the most recent data for its SFR, so in the SFR for 2013 and 2015 this teacher would be considered a non-specialist. The linked approach we have used means that the teacher is considered a specialist in this paper, despite having no specialist qualification recorded for 2015, as they have a specialist qualification dating from at least 2010.

1. The composition and deployment of the schools workforce.

This chapter provides recent trends in the number of teachers in English state-funded schools in different regions of the country. A primary driver of the number of teachers is the number of pupils. Therefore trends in the pupil:teacher ratio are provided and, to put this in the wider context of the school's staffing, including non-teaching staff, trends in the pupil:adult ratios are also included. The proportion of regular teachers employed who have not achieved qualified teacher status (QTS) is also considered.

The overall number of teachers has risen, driven by increases in the primary sector – in line with changes in the number of pupils.

As reported in the SFR, the overall number of full time equivalent (FTE) teachers (both qualified and unqualified¹⁰) has risen between 2010 and 2015 by around 15,100, to 456.9 thousand. Changes in teacher numbers mirror the trends in changes in the pupil population¹¹ which, in primary schools has increased in size each year since 2009 and in secondary schools it decreased each year from 2004 to 2015, and rose slightly in 2016 as the previous increase in primary pupils began to feed through. Between 2011 and 2016 there was an 11.5% growth in the number of primary pupil numbers and a fall of 2.1% in secondary numbers¹².

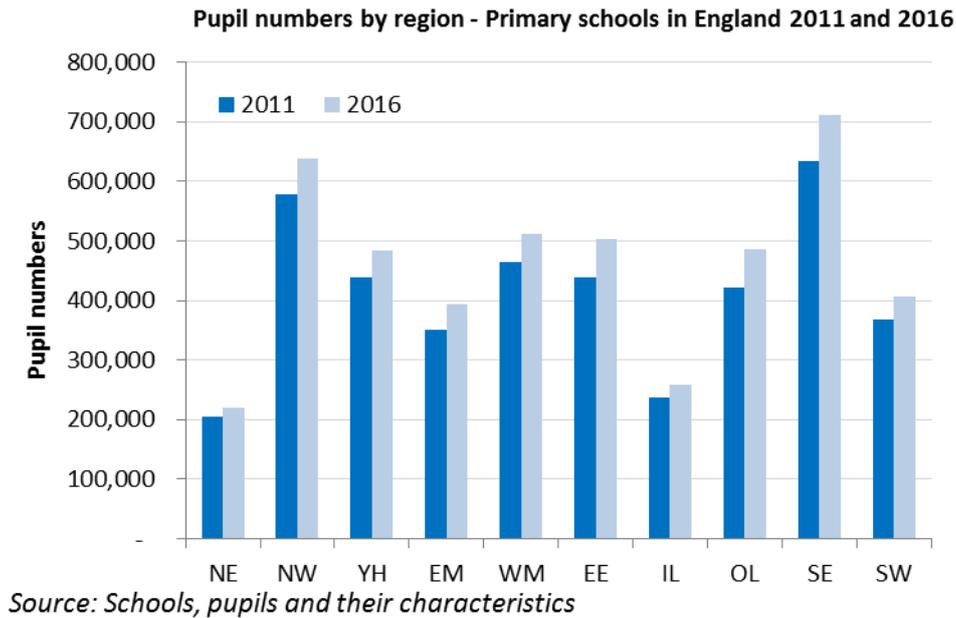
All regions saw a growth in primary pupil numbers between 2011 and 2016, with the largest growth seen in the East of England (14.9%) and Outer London (15.7%).

¹⁰ 'Qualified' means that the teacher holds qualified teacher status or an equivalent qualification.

¹¹ <https://www.gov.uk/government/statistics/national-pupil-projections-july-2016>.

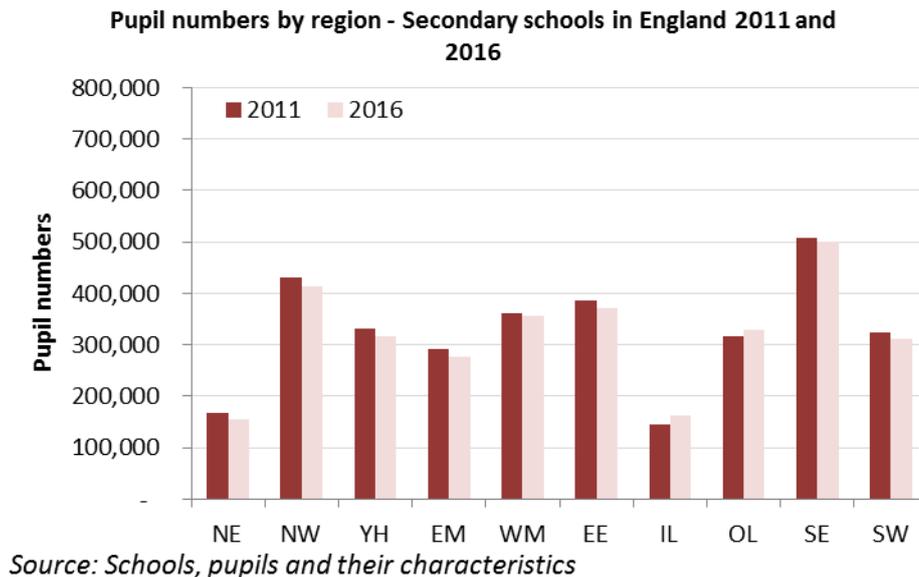
¹² <https://www.gov.uk/government/statistics/schools-pupils-and-their-characteristics-january-2016>

Figure 1.0a.



There was a decrease in secondary pupil numbers nationally, but there was more variation across the regions. The North East saw a reduction (7.0%) in pupil numbers while Inner London grew 13.1%.

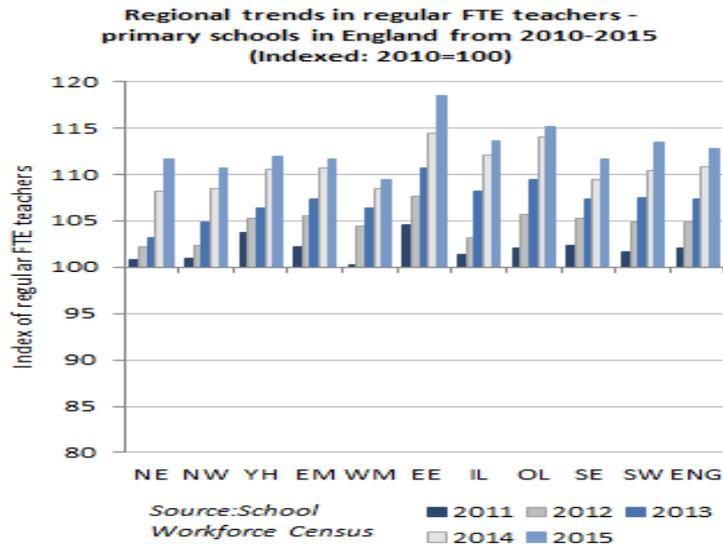
Figure 1.0b.



Primary workforce

This rise in overall numbers is driven by the primary sector, with an overall increase of over 12.8 percentage points since 2010 (Figure 1.1a). The number in every region has increased, with the smallest increase of 9.5 percentage points in the West Midlands and the largest increase of 18.5 percentage points in the East of England. Which in some part reflects the growth in pupil numbers.

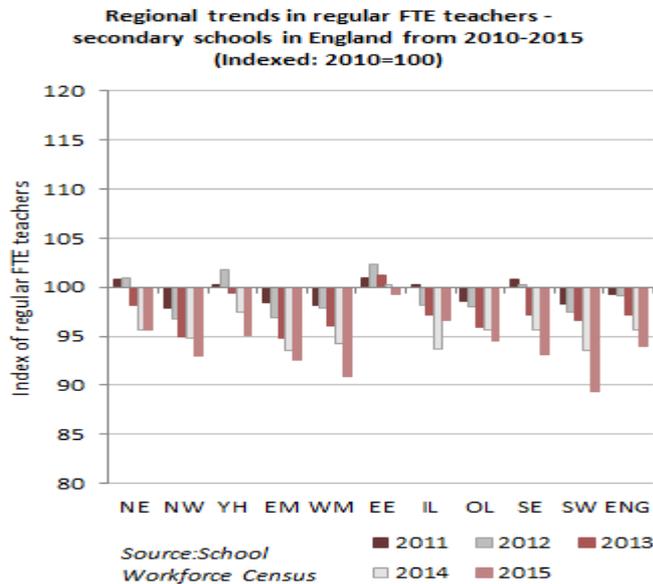
Figure 1.1a.



Secondary workforce

Conversely, the number in secondary schools saw an overall decrease of 6.1 percentage points over the same time period (Figure 1.1b). The number has decreased in every region. The region with the largest decrease was the South West at 10.7 percentage points.

Figure 1.1b.



Pupil:teacher ratios have remained broadly constant with lower rates consistently seen in London.

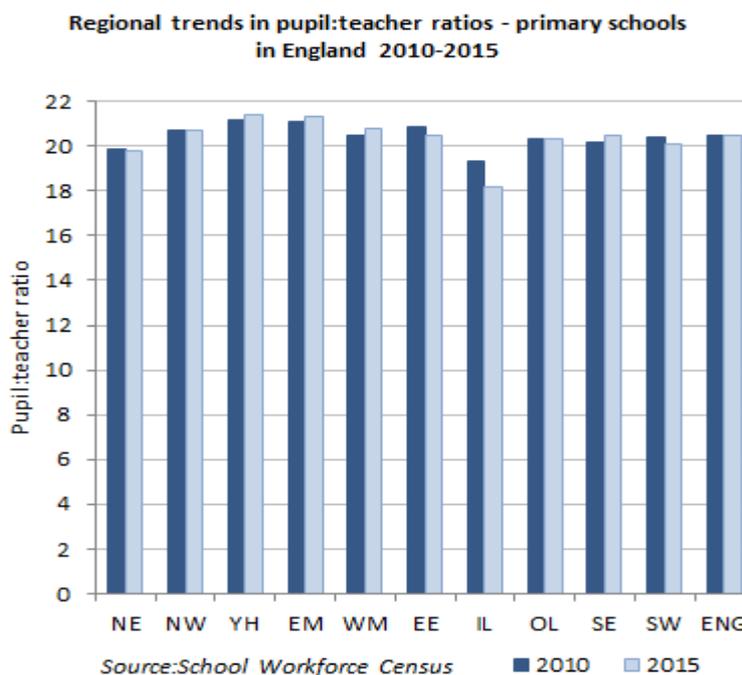
The pupil:teacher ratio compares the total number of pupils with the total number of teachers in a school. This has changed very little since 2010 and has remained consistently higher in primary schools (Figure 1.2a, 2015 national average of 20.5 to 1) than in secondary schools (Figure 1.2b, 2015 national average of 15.2 to 1). There is little

difference between the regions with the exception of Inner London which had a consistently lower ratio across both phases and all years.

Primary pupil: teacher ratios

Primary schools had an overall pupil:teacher ratio of 20.5 to 1, with Inner London having the lowest level (18.2 to 1) largest fall between 2010 and 2015 of 1.1 percentage points. This is due to a greater increase in the number of teachers than pupils over the time period. Whereas in the rest of the country the relationship between pupils and teachers moved more in line with each other.

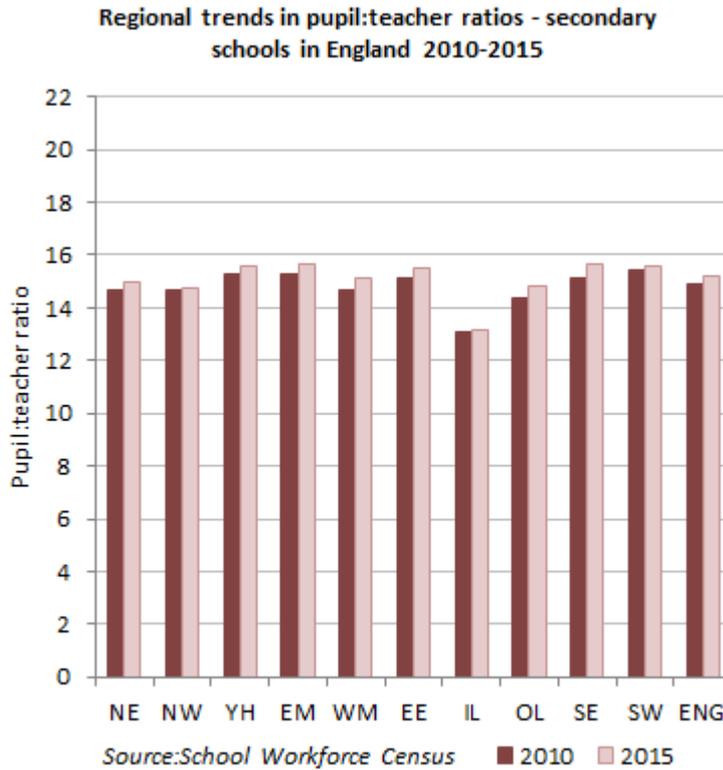
Figure 1.2a.



Secondary pupil: teacher ratios

Secondary schools had an overall ratio of 15.2 to 1, with a similar pattern to primary schools with Inner London showing lowest level in 2010 and 2015 (13.1 to 1). All regions saw a small increase over the period.

Figure 1.2b.



Pupil:adult ratios have decreased for primary but remained broadly constant in secondary, with lower rates consistently seen in London.

The pupil:adult ratio¹³, which includes teaching assistants and other support staff working in schools, is more similar across the regions in both primary schools (Figure 1.3a, 2015 national average of 10.9 to 1) and secondary schools (Figure 1.3b, 2015 national average of 10.7 to 1). In contrast to the pupil:teacher ratio which showed far higher figures for the primary sector than the secondary.

As with the pupil:teacher ratio, there is little difference between the regions, with the exception of Inner London which again has a consistently lower ratio of 9.4 to 1 in primary and 9.5 to 1 in secondary. For primary between 2011 and 2015 there was a decrease in the pupil:adult ratio; for secondary there was more fluctuation.

¹³ The pupil:adult ratio is calculated by dividing the total FTE number of pupils on roll in schools by the total FTE number of all teachers and support staff employed in schools, excluding administrative and clerical staff.

Figure 1.3a

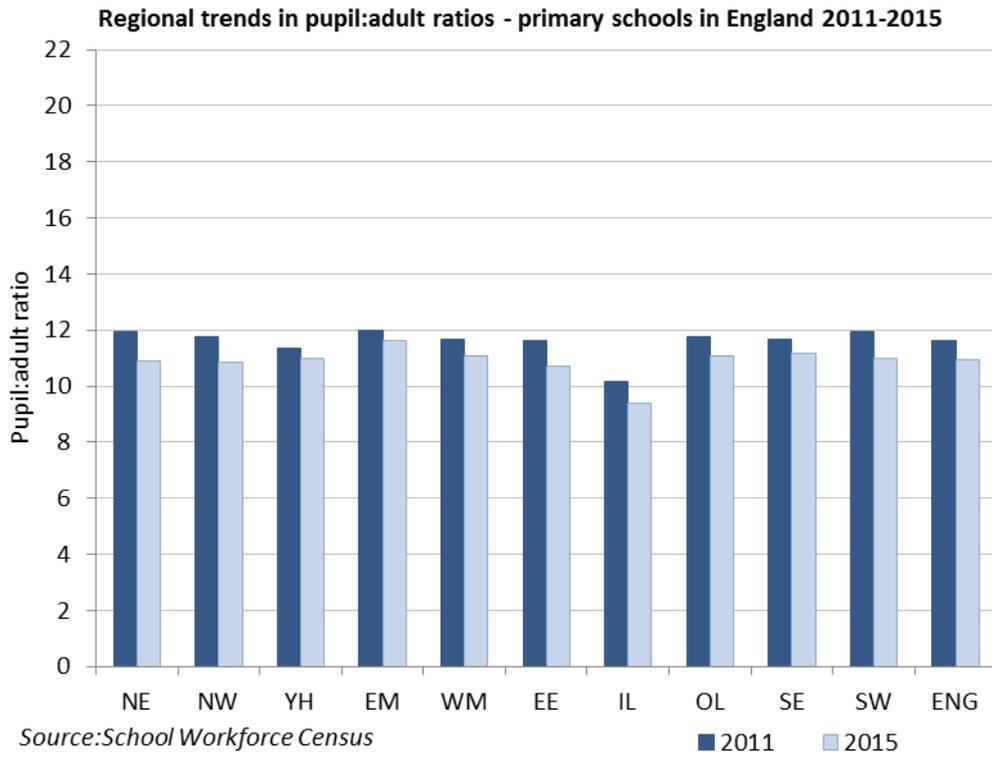
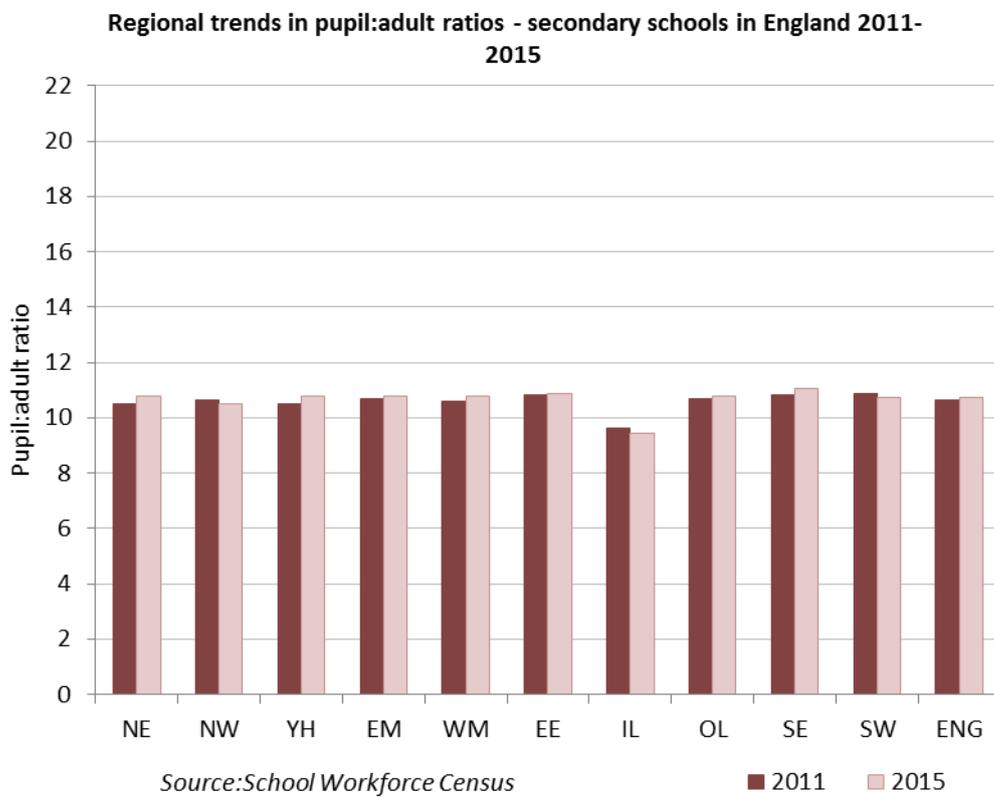


Figure 1.3b



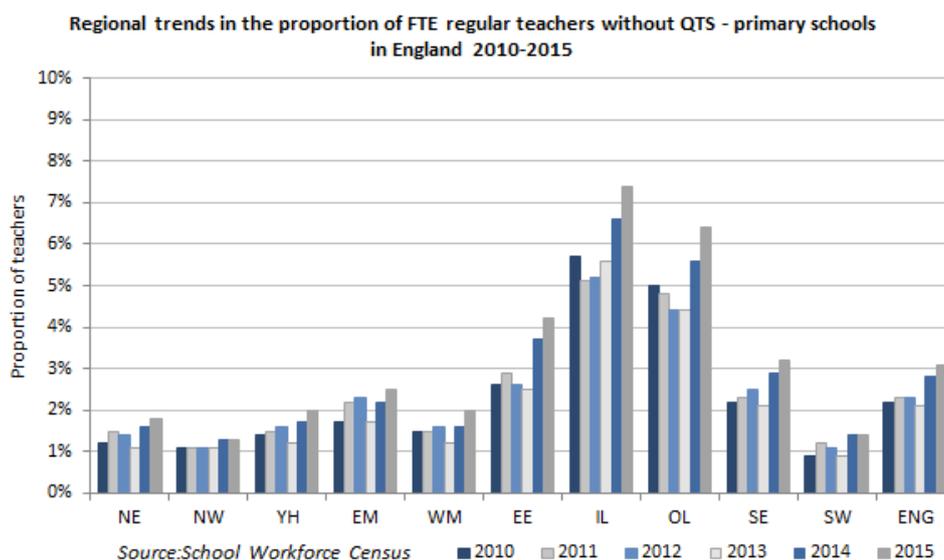
The employment of unqualified teachers increased in 2014 and 2015.

An unqualified teacher is either a trainee working towards qualified teacher status¹⁴, an overseas trained teacher without qualified teacher status (QTS) or an instructor who has a particular skill who can be employed for so long as a qualified teacher is not available¹⁵. The proportion of FTE regular teachers who are unqualified changed little between 2010 and 2013; however there were small increases on previous years in 2014 and 2015 in all regions and across both primary and secondary phases.

Primary – unqualified teachers

The proportion of FTE regular teachers employed in primary schools who were unqualified (which includes those undertaking salaried initial teacher training) was on average 3.1% across the country in 2015. In that year, London saw double the national rate (Inner: 7.4%, Outer: 6.4%) and the lowest proportion was seen in the North West (1.3%).

Figure 1.6a.



¹⁴ Data in the School Workforce Census are collected only for such trainee teachers who are employed directly by the school. For those undertaking initial teacher training this covers: teachers on the School Direct (salaried) programme, the Overseas Trained Teacher Programme (OTTP) and the Teach First programme.

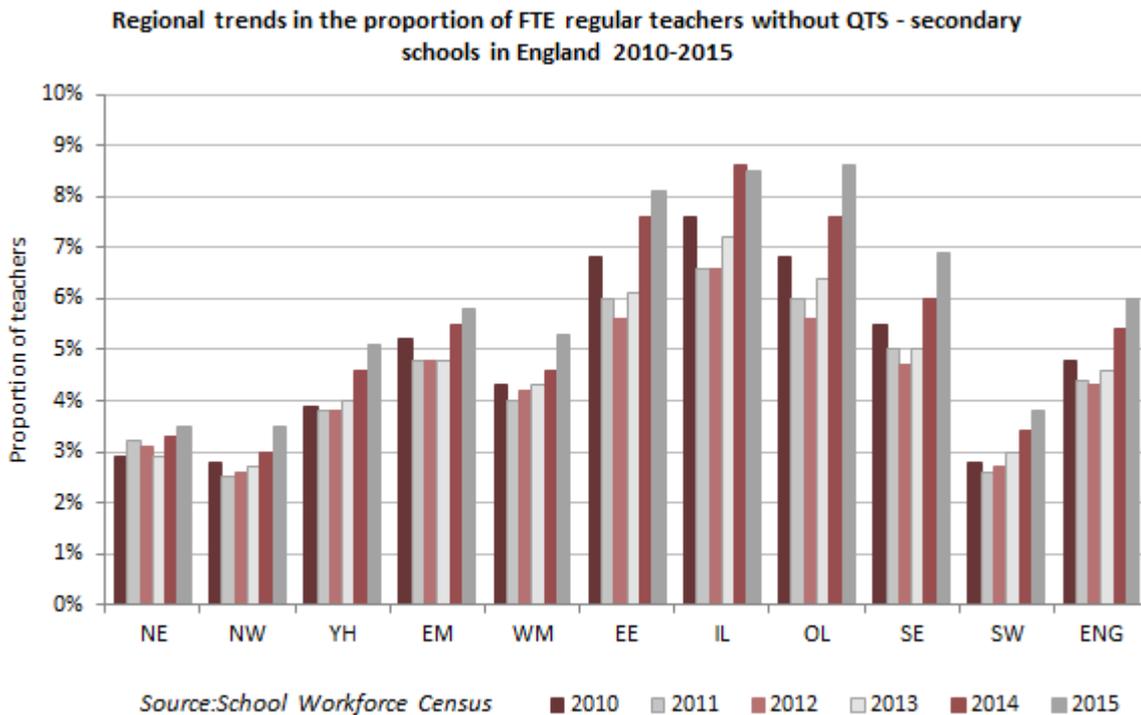
¹⁵ Prior to 2012, head teachers could employ, as instructors (unqualified teachers), individuals who did not hold qualified teacher status (QTS) where there was not a suitable QTS-holding teacher available. In September 2012, the Specified Work Regulations were amended to allow maintained schools to employ industry experts as instructors to teach, where specialist qualifications and/or experience are required, as a first choice and on a permanent basis. Instructors in maintained schools are paid on the Unqualified Teachers Pay Scale. Appointments made to free schools, studio schools, university technical colleges and university training schools are not subject to the Specified Work Regulations, which means that the heads of these schools can employ teaching staff who they deem to be suitably qualified - without the automatic requirement for QTS.

Secondary– unqualified teachers

The overall proportion of FTE regular teachers employed in secondary schools who were unqualified (which includes those undertaking salaried initial teacher training) was higher than in primary schools (6.0% compared to 3.1%) in 2015. In that year, the highest proportion was seen in London (Inner: 8.5%, Outer: 8.6%) and the lowest proportion in the North West and North East (3.5%).

There was a rise in unqualified teachers across all regions between 2010 and 2015, with the greatest rise in Outer London and the smallest in the North East.

Figure 1.6b.



2. Trends in teacher mobility.

The School Workforce Census SFR reports annually on the number of qualified teachers leaving and joining the state-funded schools sector in England, giving trends over time.

For leavers, referred to as ‘wastage’, this is broken down into those:

- retiring;
- otherwise moving ‘out of service’ from the state sector to other employment (including other educational sectors) or economic inactivity; and
- deceased.

For those joining, referred to as ‘entrants’, this is broken down into those:

- ‘newly qualified’ teachers (NQTs) starting in their first teaching job straight after qualifying;
- ‘new to the state-funded sector’ who have not just qualified but have not been recorded teaching in the sector previously¹⁶; and
- returning to the state-funded sector having taught there previously.

In both the ‘wastage’ and ‘entrants’ measures we do not include teachers moving between state funded schools – that is addressed later and labelled for this report as school-to-school mobility.

As Chapter 1 illustrates, recent trends in teacher numbers have served to maintain a fairly constant ratio of pupils and teachers, in the face of differing trends for pupil growth in primary and secondary schools. This chapter explores the trends for qualified teachers for each region in terms of overall wastage, entrants and movements between schools in recent years. Each of these constituent parts contributes to overall changes in school recruitment activity over time.

The numbers presented in this chapter are of qualified teachers *only* and are expressed in **headcount** terms. Whilst this differs to the full time equivalent (FTE) figures presented in chapter 1 for both qualified and unqualified teachers, it is more intuitive when talking about teachers moving. A comparison between overall teacher numbers (qualified and unqualified) expressed in FTE and headcount numbers is shown in table 2.1¹⁷.

¹⁶ Whilst the SWC has run since November 2010, for the SFR the Database of Teacher Records, derived from teacher pensions data, is used to determine the service of teachers before this date.

¹⁷ Table 3a of the ‘School workforce in England: November 2015’ SFR:
<https://www.gov.uk/government/collections/statistics-school-workforce>.

Table 2.1

Regular teachers in 2015	Primary	Secondary
Full time equivalent	220,000	210,900
Headcount	247,200	226,500

Consistent with the entry and wastage tables in the School Workforce Census SFR, the figures for the two most recent years (2014 and 2015) are provisional.

Between 2010 and 2015 there have been increases in the number of younger teachers and decreases in the number of older teachers. For example, the percentage of FTE teachers that are aged under 30 has increased from 23.0% (in 2010) to 25.1% (in 2015). Over the same period the percentage of FTE teachers aged between 30 and 50 has also increased from 52.9 per cent to 56.7 per cent. The percentage of teachers aged over 50 has therefore reduced; from 24.1% in 2010 to 18.2% in 2015. This young workforce may be more mobile and driving some of the trends see in the sections below¹⁸.

Wastage from the state-funded school sector has increased since 2011, with London and the South East consistently having the highest rates.

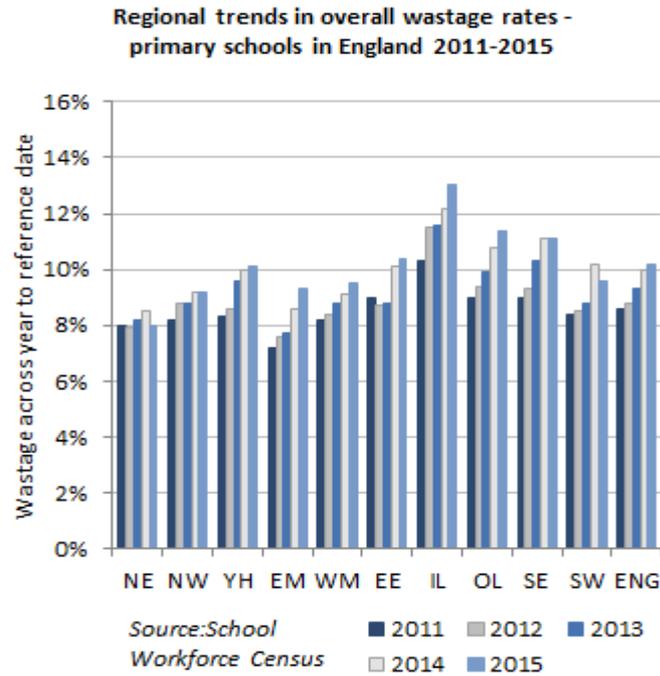
Wastage rates (the proportion of teachers leaving the state-funded school sector) over the last five years have increased in both primary and secondary phases. This is illustrated in figures 2.1a and 2.1b. Wastage rates across the phases have similar values across the primary and secondary phases. These overall wastage rates were consistently highest in Inner London, followed by both Outer London and the South East.

Primary wastage

In 2015, the wastage rate was 10.2% for primary schools. In primary schools, rates in the year to 2015 varied from 8.0% in the North East to 11.1% in the South East, 11.4% in Outer London and 13.0% in Inner London. The change in the primary wastage rate between 2011 and 2015 was stable in the North East (no change) and increasing in the other regions, with the highest in Inner London (2.7 percentage points).

¹⁸ <https://www.gov.uk/government/collections/statistics-school-workforce>

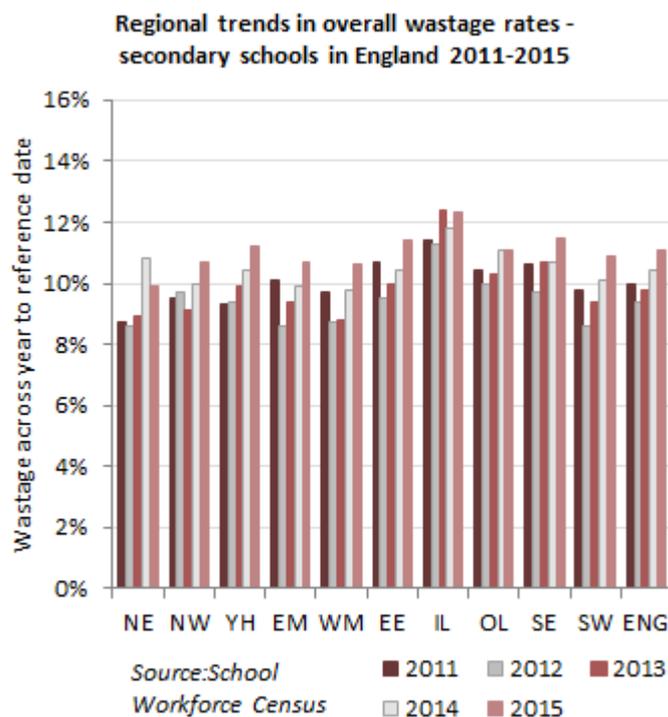
Figure 2.1a.



Secondary wastage

In 2015, the wastage rate was 11.1% for secondary schools. Secondary schools rates varied from 9.9% in the North East to 11.1% in Outer London and 12.3% in Inner London. Secondary schools saw smaller increases in the wastage rate with the lowest in the East Midlands (0.6 percentage points) and the highest increase in Yorkshire & the Humber (1.9 percentage points).

Figure 2.1b.



Overall increases in wastage rates reflect increases in those moving ‘out of service’ and a decrease in retirement rates.

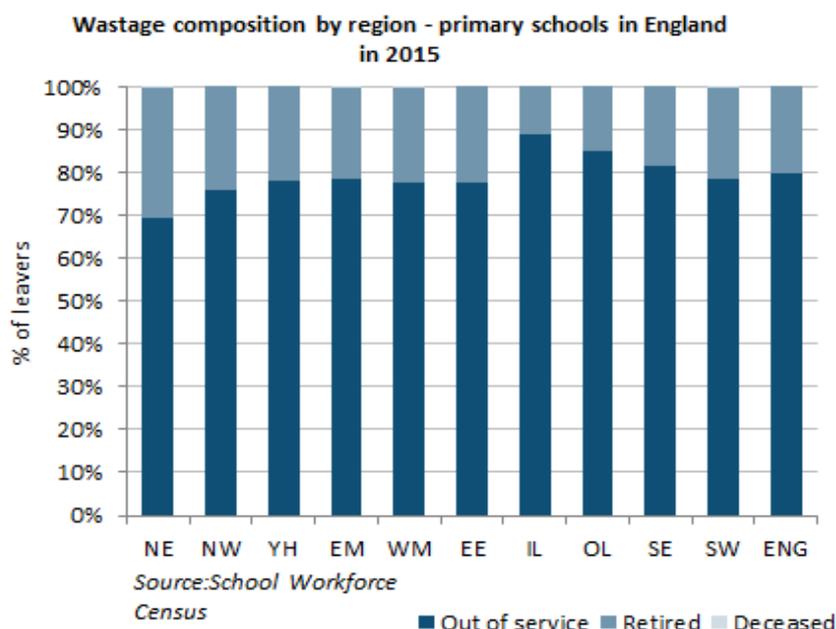
Figures 2.2a.i and 2.2b.i break down the wastage rate for 2015 into its components (‘out of service’, retired, deceased) for both phases in each region. Over two thirds of wastage in the year to 2015 in each region was those moving ‘out of service’ in the state-funded sector. These people may still be working in education, but not as teachers in the state-funded sector.

We have not analysed the figures for deceased teachers due to their low numbers.

Primary – changes in wastage rates

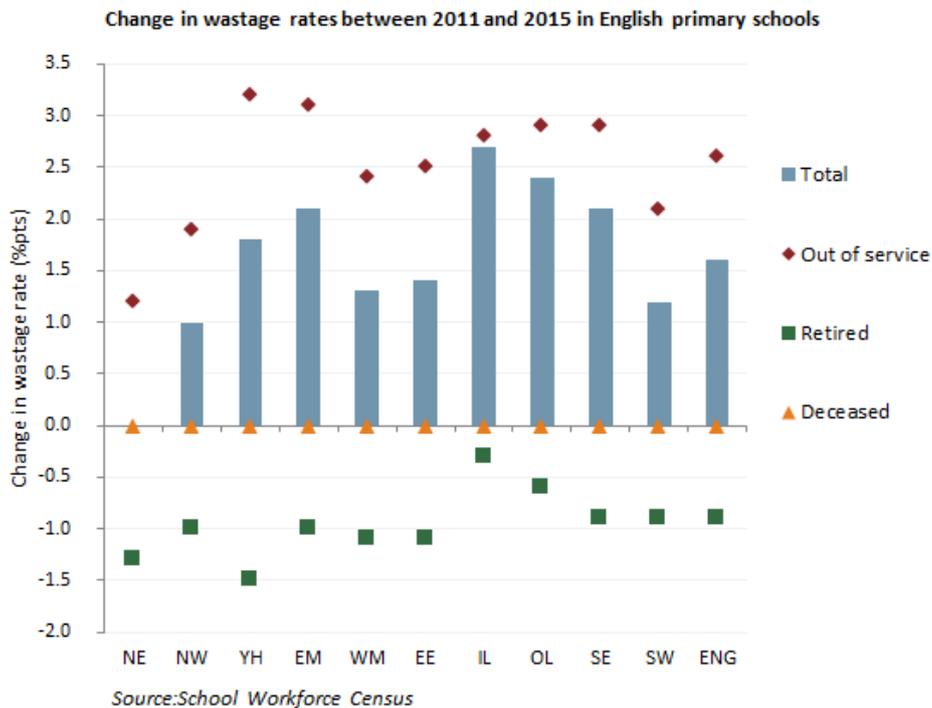
In primary schools, 79.6% of wastage overall was ‘out of service’, but this varied from a low of 69.3% in the North East to a high of 89.0% in Inner London. As Figure 2.2a.ii illustrates for primary schools, in all regions, a reduction in retirement rates¹⁹ partly offset increases in ‘out of service’ rates with an overall increase for England of 2.6 percentage points for ‘out of service’ rates and decrease of 0.9 percentage points for retirement rates. The East Midlands and Yorkshire & the Humber had the greatest increases in ‘out of service’ rates and the North East had the smallest increase.

Figure 2.2a.i.



¹⁹ A large factor in the reduction in retirements was the underlying age and size of the teacher population which, like the population as a whole, has just passed a bulge at retirement age caused by the post-Second World War baby boomers.

Figure 2.2a.ii.



Secondary – changes in wastage rates

Secondary school rates were very similar to those in primary schools with an overall rate of ‘out of service’ leavers representing 77.5% of all wastage; ‘out of service’ rates varied from a low of 72.3% in the North East to a high of 89.2% in Inner London. This suggests the teacher labour market in London has different factors compared to the rest of the country. The divergence of ‘out of service’ and retirement rates was also seen in secondary schools, but the net effect was a smaller overall increase in wastage compared to primary schools (2.0 percentage points increase in ‘out of service’ rate and 0.9 percentage points decrease in retirement rate). All regions saw increases in ‘out of service’ rates and decreases in retirement rates. Again, given the stable PTRs in both phases, these differences may reflect school responses to differing trends in pupil numbers which saw an increase at primary age and a decrease at secondary age over this period. In line with the primary phase, the biggest increase in ‘out of service’ rates for secondary schools was in the Yorkshire & the Humber; in contrast to the primary phase, the North East had the second-highest wastage rate increase, while the East Midlands had the smallest increase.

Figure 2.2b.i.

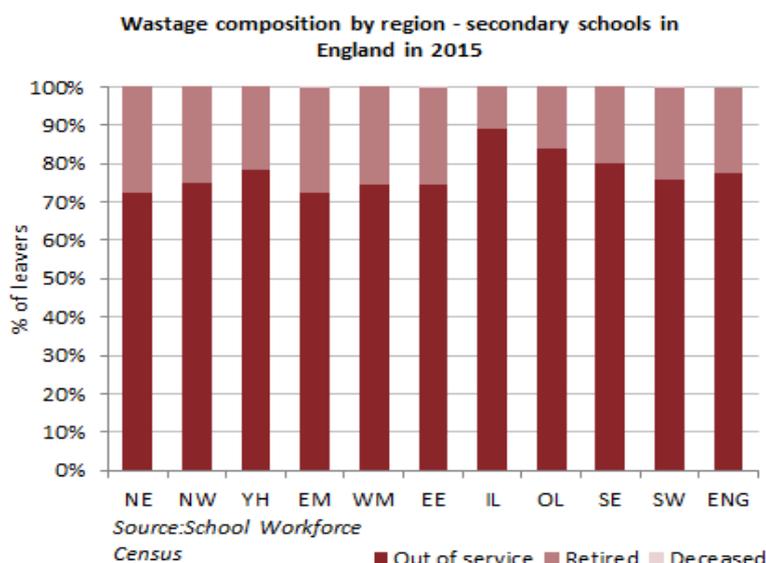
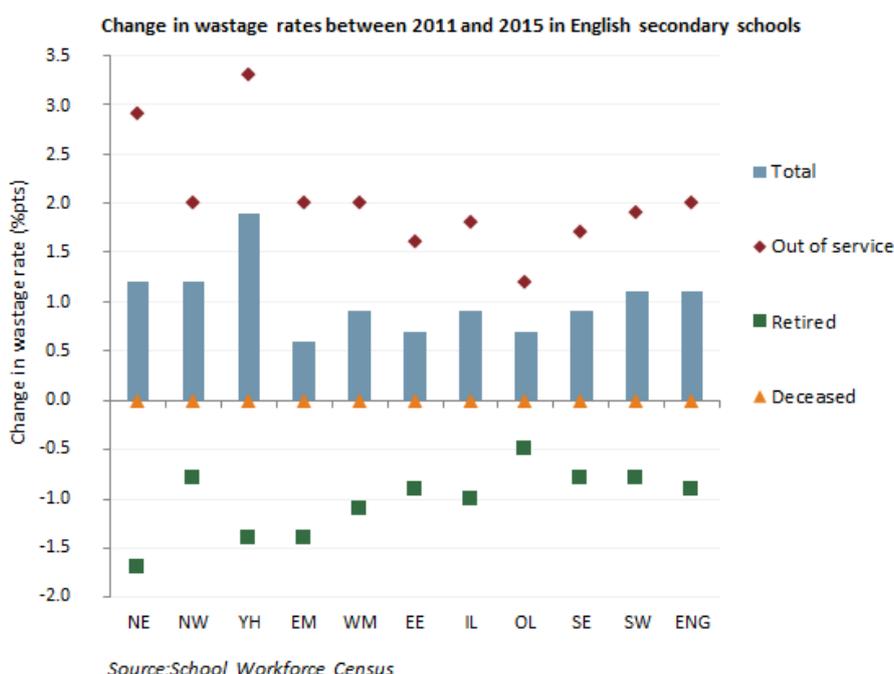


Figure 2.2b.ii.



Entrant rates to the state-funded school sector have increased; this was driven by newly qualified teachers in primary and by those returning to the profession in secondary.

Like wastage rates, overall entrant rates to the state-funded school sector have increased since 2011, more so in primary schools than in secondary schools. Unsurprisingly, those with the highest leaver rates tend to have the highest entrant rates – again it is Inner and Outer London and the South East with higher rates and the North

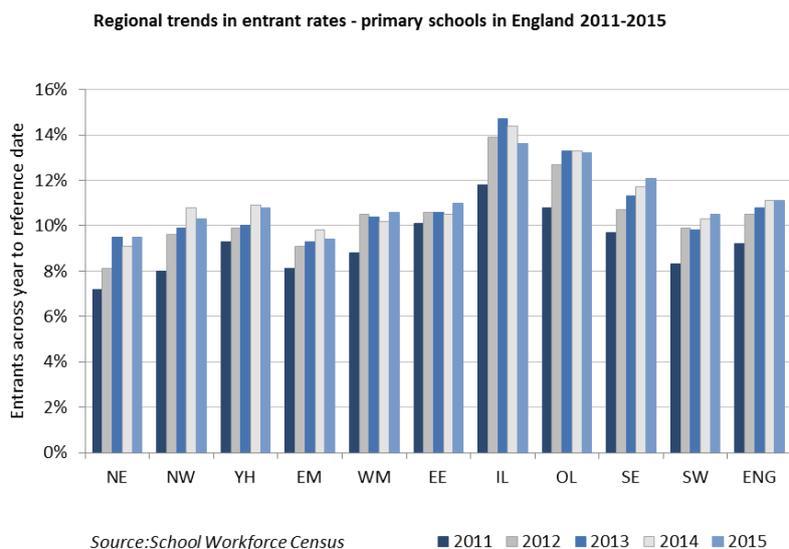
East and East Midlands with generally low rates. This suggests that different parts of the country have different levels of ‘churn’²⁰ in their workforces as well as differing trends in overall numbers which, as Chapter 1 outlines, have recently followed those of pupil populations.

Across both phases, around half of entrants were NQTs in 2015, while around a third were those returning to the sector who had taught there previously. (These returners may have been undertaking alternative employment - including teaching elsewhere - or taking a career breaks in the meantime.)

Primary entrant rates

Between 2011 and 2015, the entrant rate increased by 1.9 percentage points for primary schools to reach 11.1% in 2015. The largest growth was seen between 2011 and 2012, and it then slowed. The increase by region for primary schools varied from a low of 0.9 percentage points in the East of England to a high of 2.4 percentage points in the Inner London and the South East. This was in contract to the pupil growth, which was highest in the East of England.

Figure 2.3a.



Entrants to the state-funded school sector for each region can be broken into their component parts: newly qualified teachers (NQTs); returners to the sector; and otherwise new to the sector. In primary schools, the proportion of entrants who were NQTs varied from a low in the South West (48.2%) to highs in Inner London (56.9%), Yorkshire & the Humber (57.1%) and the West Midlands (57.2%).

²⁰ Churn is defined as the movement of teachers that drives the changes in the workforce.

Figure 2.4a.i.

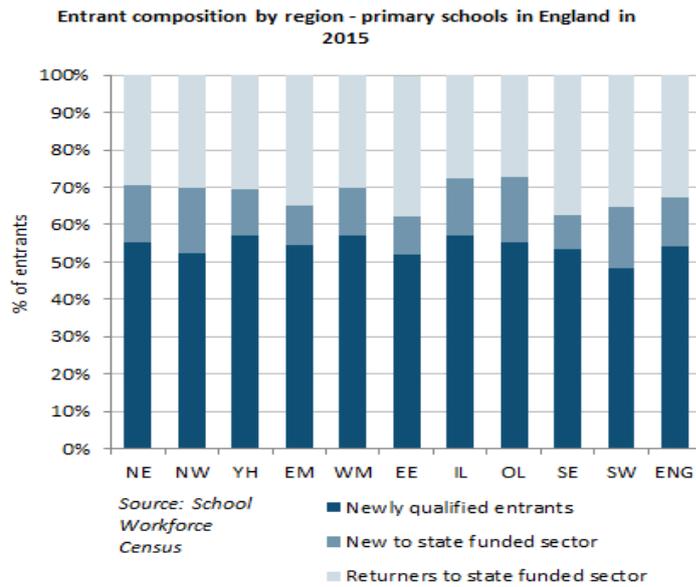
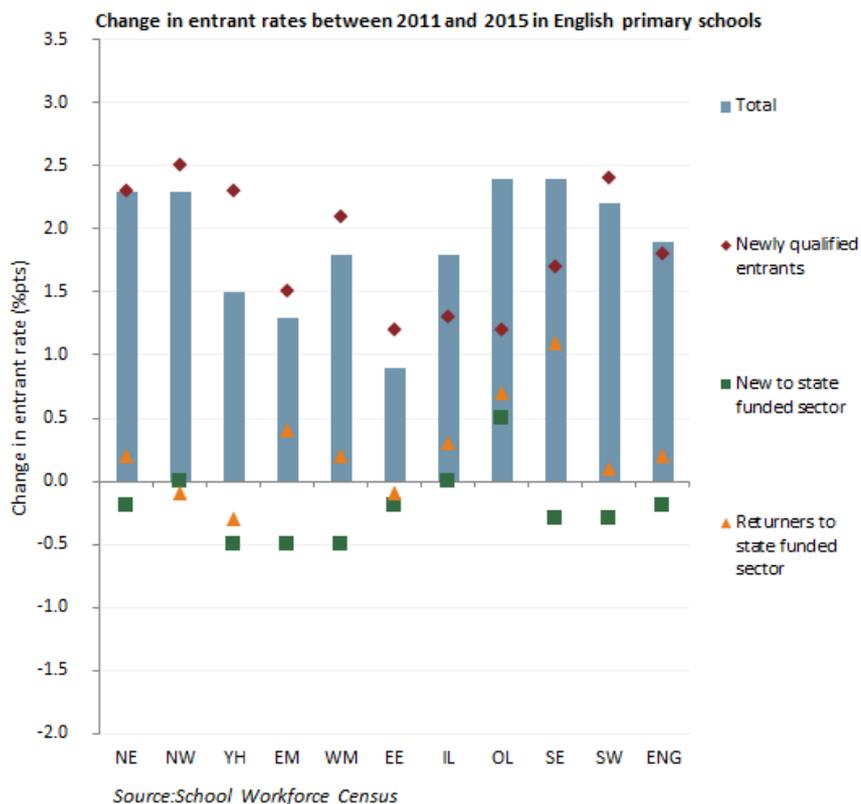


Figure 2.4a.ii shows how primary schools in all regions, saw increases in entrant rates of 0.9 percentage points to 2.4 percentage points between 2011 and 2015, with the East of England (0.9 percentage points) and the East Midlands (1.3 percentage points) having the lowest increases; in all cases this was dominated by an increase in NQTs (average 1.8 percentage points). All regions except the North West, Yorkshire & the Humber and the East of England saw an increase in the entrant rates of returners to the state-funded sector with an average of 0.2 percentage points.

Figure 2.4a.ii

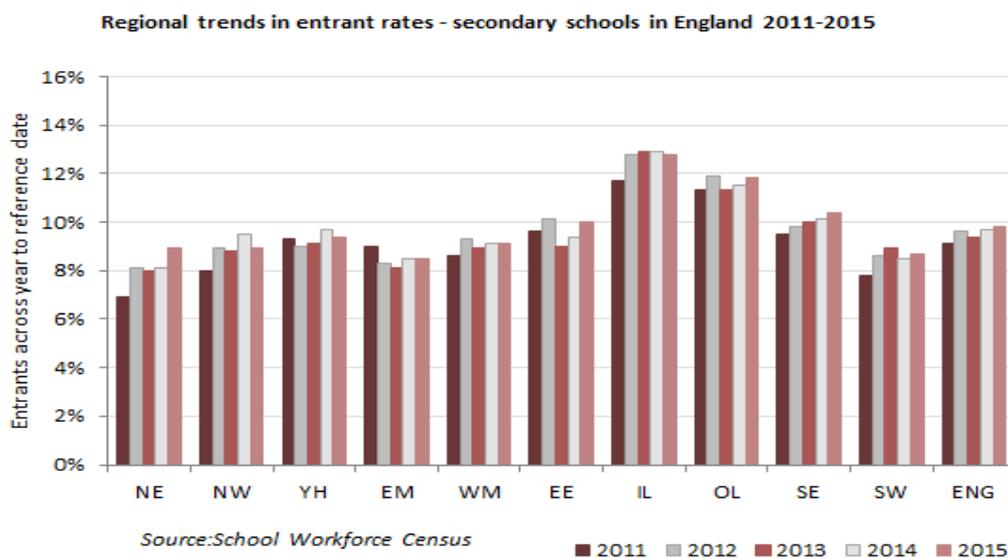


Secondary entrant rates

Between 2011 and 2015, the entrant rate increased by 0.7 percentage points in secondary schools to reach 9.8%. It varied from a 0.5 percentage points decrease in the East Midlands to a 1.1 percentage points increase in the Inner London and a 2.0 percentage points increase in the North East.

There is a larger range in entrant rates than for wastage rates in secondary schools. For secondary schools these range from 8.5% in the East Midlands to 11.8% in Outer London and 12.8% in Inner London.

Figure 2.3b.



The proportion of new entrants who were NQTs showed similar variation in the secondary phase; with the South West (46.4%) to Inner London (55.4%).

Figure 2.4b.i.

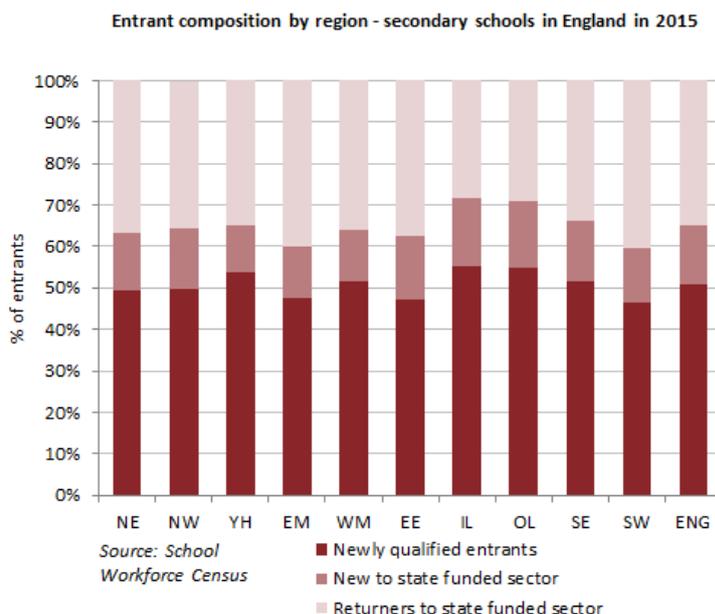
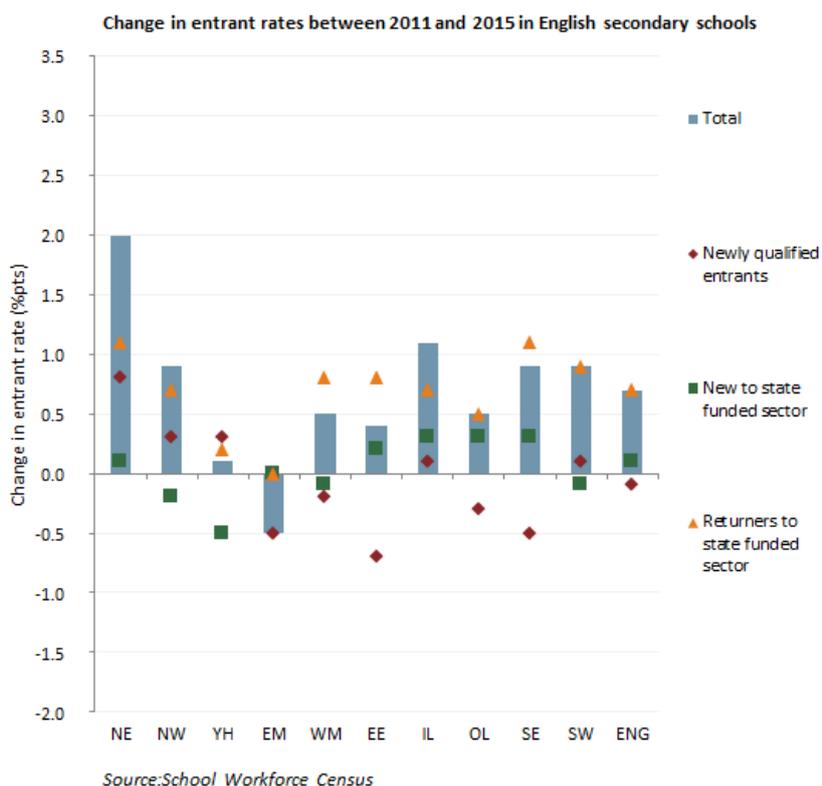


Figure 2.4b.ii shows that, in secondary schools, there were smaller increases in overall entrant rates, with some areas showing a decrease. Changes in overall entrant rate varied between a decrease of 0.5 percentage points (East Midlands) and an increase of 2.0 percentage points (North East). An overall increase of 0.7 percentage points in the contribution of returners to the entrants' rate dominated the overall increase in entrant rate, with all regions showing an increase except in the East Midlands. Unlike for primary schools, there was an overall decrease in the entrant rate of NQTs of 0.1 percentage points with the northern regions (North East, North West and Yorkshire & the Humber), the South West and Inner London showing increases on this measure. The contribution of those otherwise new to the state-funded sector rose 0.1 percentage points; London and the South East showed increases of 0.3 percentage points, while Yorkshire & the Humber showed the largest loss of 0.5 percentage points.

Figure 2.4b.ii



Teachers moving between state-funded schools accounts for an increased proportion of recruitment activity since 2011, so that in 2015 it was the biggest source of new entrants to schools.

The previous two sections looked at wastage from, and entrants to, the state-funded school sector as a whole. This section looks at teachers moving between schools within the state-funded school system, which we have called ‘school-to-school mobility’. An important aspect of schools’ recruitment activity will be filling vacancies left by teachers moving to other state-funded schools as well as those retiring or changing professions.

Patterns in school-to-school mobility may reflect changes in the composition and characteristics of schools and the creation of new ones. *The analysis here excludes notional moves such as those implied when a teacher is in a local-authority-maintained school before and after it is converted to become an academy, even if the school has a new name and administrative reference number.*

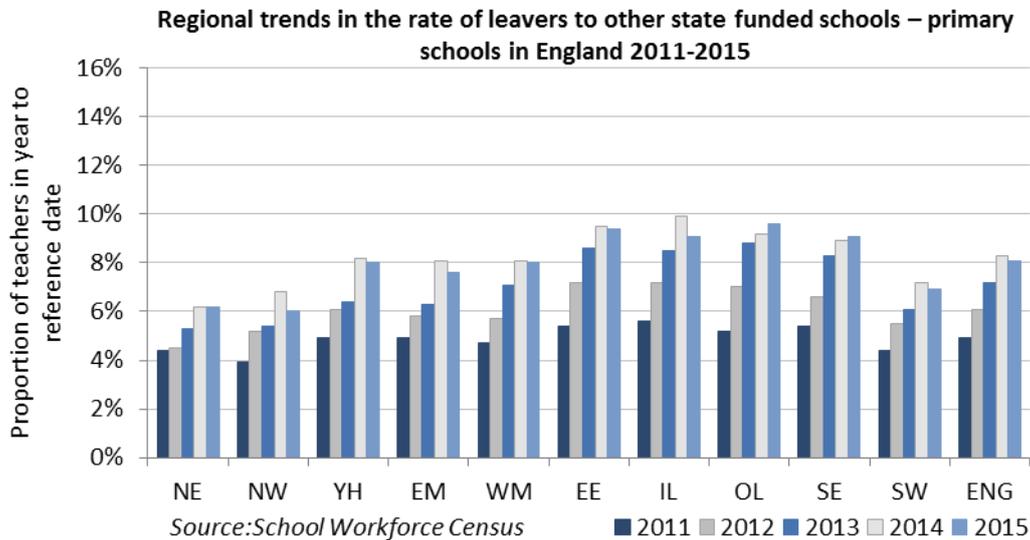
The proportion of schools’ recruitment activity that is generated by movements between schools has risen and now makes up more of the entrants than the next largest source – NQTs.

Primary – changes in entrant rates

For primary schools, there was a 3.2 percentage points increase in school-to-school mobility from an overall rate of 4.9% of teachers in 2011 (e.g. a teacher leaving to work in

another state-funded school in 2011) to 8.1% in 2015 (see Figure 2.5a). This increase was seen in all regions, but resulted in a widening range across them; in 2011 all had rates of between 3.9% and 5.6%, but in 2015 the rate varied from 6.0% to 9.6%. The highest rates in 2015 were in London (Inner: 9.1%, Outer: 9.6%), the East of England (9.4%) and the South East (9.1%).

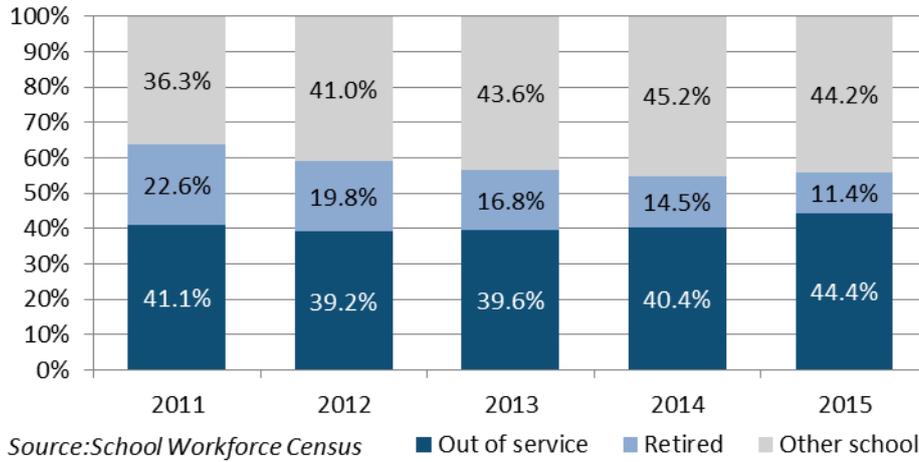
Figure 2.5a.



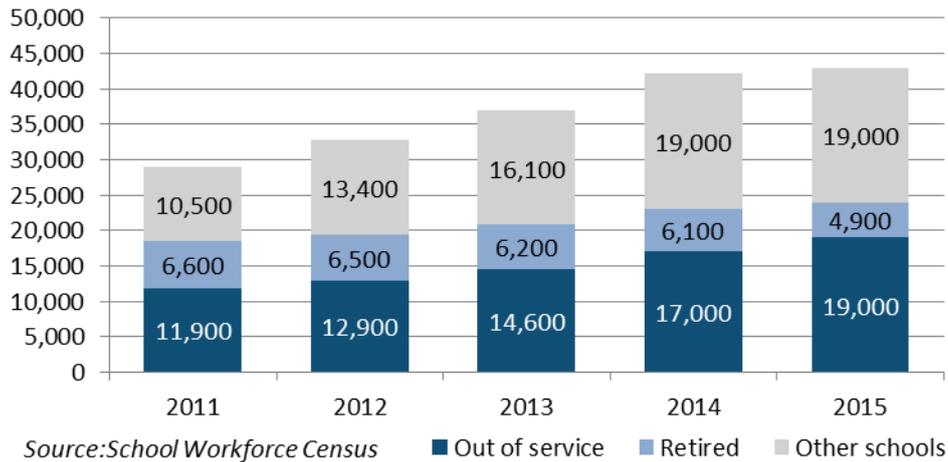
This growth outpaced the growth in ‘out of service’, wastage and retirements in the primary phase, hence the proportion of teachers leaving primary schools in England to move to other state-funded schools increased from 36.3% in 2011 to 44.2% in 2015 (Figure 2.6a). (The rate in 2015 is only lower than the rate of ‘out of service’ leavers, which stood at 44.4%.) Retirement rates dropped year-on-year; in primary schools the retirement rate dropped from 22.6% in 2011 to 11.4% in 2015.

Figure 2.6a.

Contributions to total school leaver numbers – primary schools in England 2011 - 2015

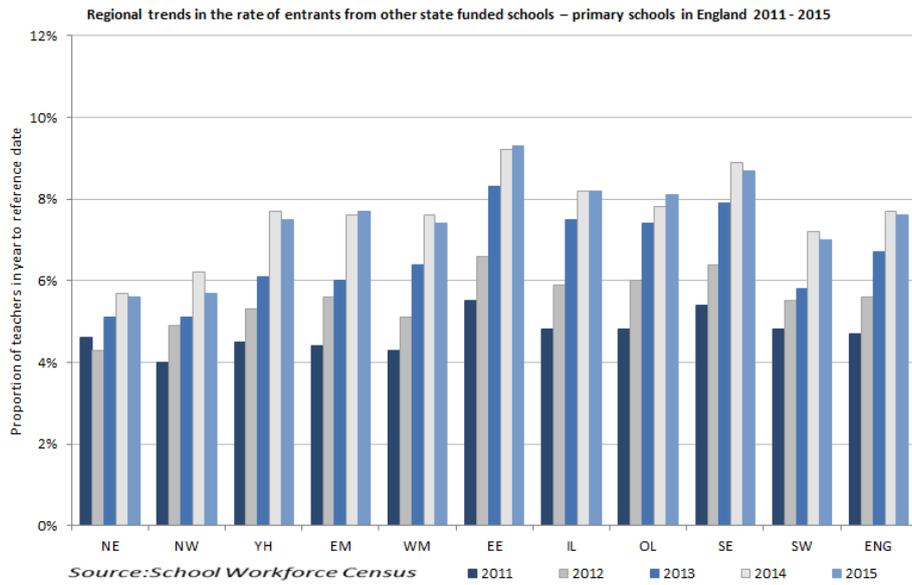


Contributions to total school leaver numbers – primary schools in England 2011 - 2015



The trends and patterns across regions in entrants from other state-funded schools are similar to the rates for *all* entrants, although the rate of change across years is greater for school-to-school mobility than for all entrants. The overall proportion of teachers who were entrants from other schools rose from 4.7% to 7.6% in primary schools and across regions, school-to-school mobility rate varied between 5.6% and 9.3% in 2015 for primary schools.

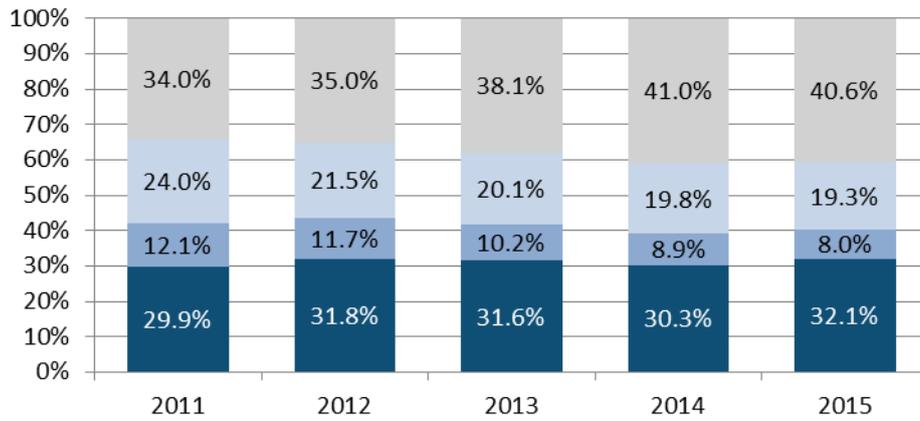
Figure 2.7a.



Overall, the result is that the proportion of entrants to primary schools that are from other state-funded schools increased from 34.0% in 2011 to 40.6% in 2015 (Figure 2.8a). The proportion of schools' recruitment activity that is generated by movements between schools has risen and now makes up more of the entrants than the next largest source - NQTs. For primary schools in 2015, school-to-school mobility accounts for 8.5 percentage points more than NQTs.

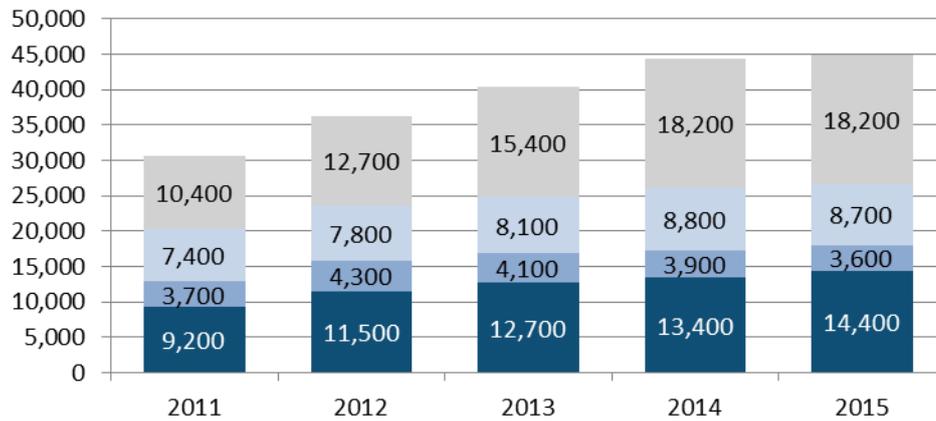
Figure 2.8a.

Contributions to total school entrant numbers – primary schools in England 2011 - 2015



Source: School Workforce Census ■ NQTs ■ New ■ Returners ■ Other schools

Contributions to total school entrant numbers – primary schools in England 2011 - 2015

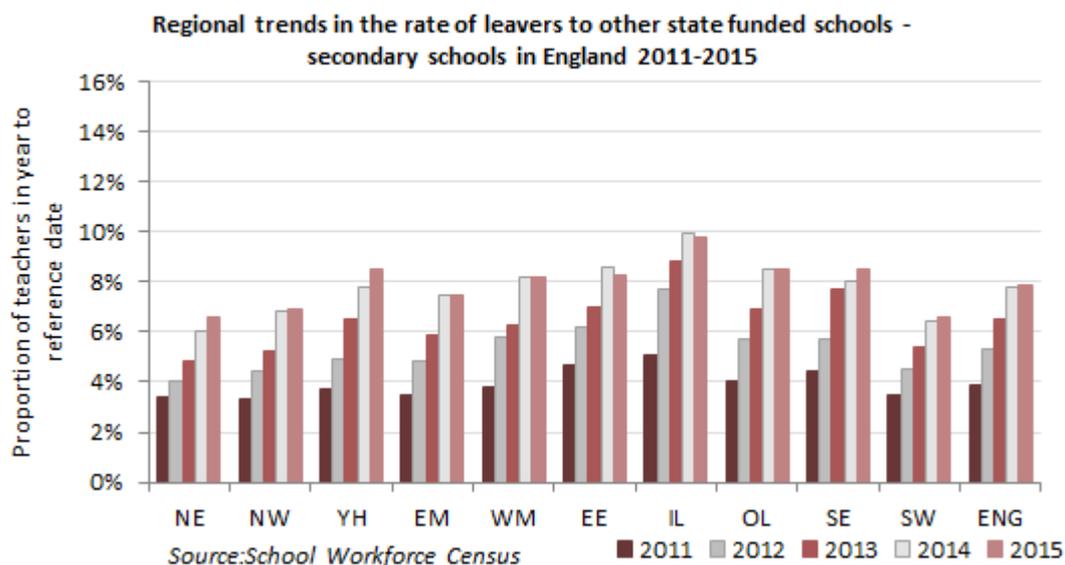


Source: School Workforce Census ■ NQTs ■ New ■ Returners ■ Other schools

Secondary – changes in entrant rates

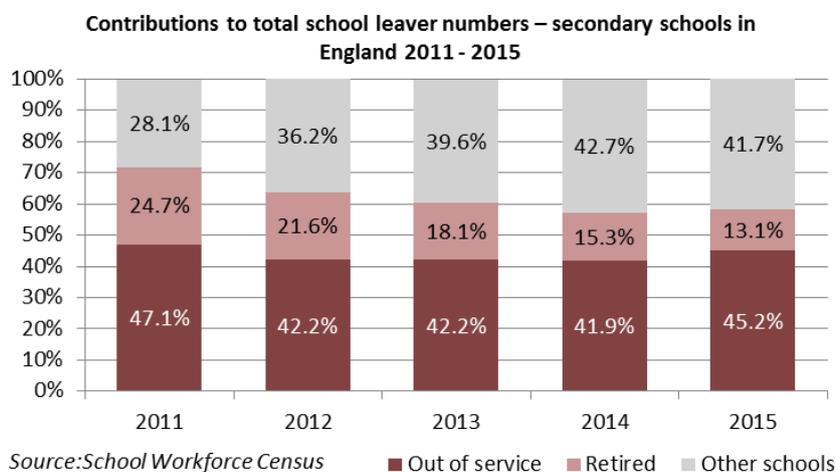
A similar pattern was seen in secondary schools, with the overall rate of school-to-school mobility increasing from 3.9% to 7.9%. The range increased from between 3.3% and 5.1% in 2011 to between 6.6% and 9.8% in 2015. The highest rates in 2015 were in London (Inner: 9.8%, Outer: 8.5%), the South East and the Yorkshire & the Humber (both 8.5%)

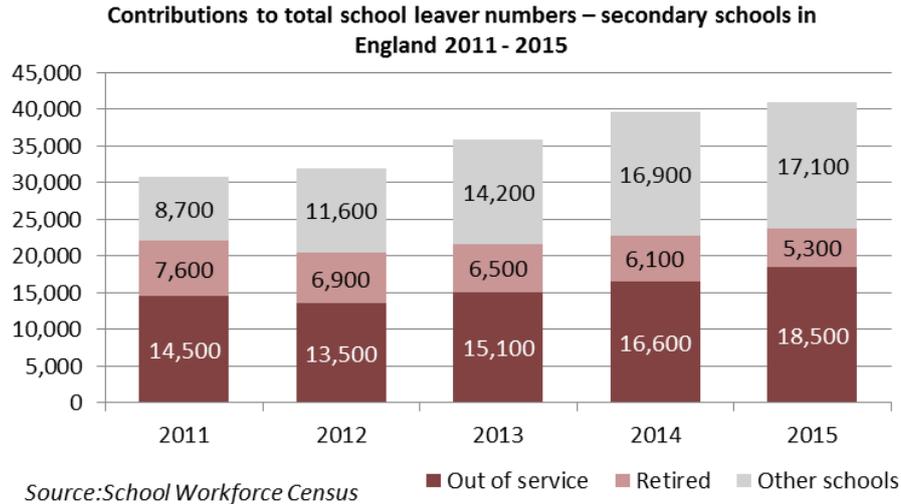
Figure 2.5b.



This growth in school-to-school mobility also outpaced the growth in ‘out of service’, wastage and retirements, with the proportion of leavers due to school-to-school mobility rising from 28.1% to 41.7% (Figure 2.6b), whilst ‘out of service’ rates fell from 47.1% in 2011 to 45.2% in 2015. Retirement rates dropped year-on-year; for secondary schools, the drop was from 24.7% in 2011 to 13.1% in 2015.

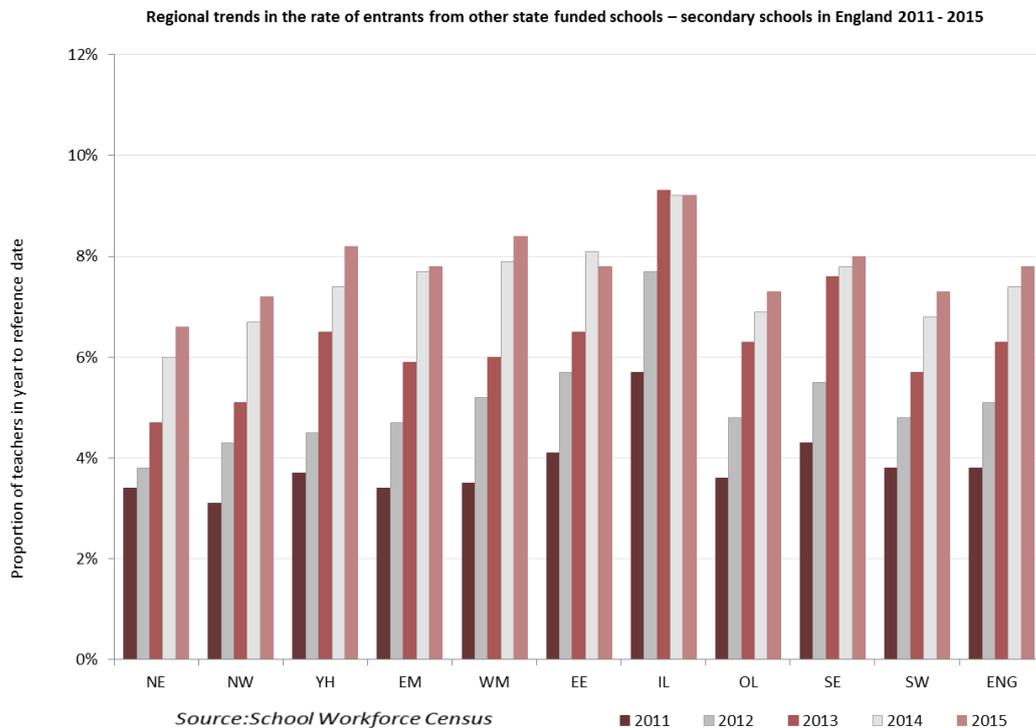
Figure 2.6b.





As with primary, the trends and patterns across regions in entrants from other state-funded schools are similar to the rates for *all* entrants, although the rate of change across years is greater for school-to-school mobility than for all entrants. The overall proportion of teachers who were entrants from other schools rose from 3.8% to 7.8% in secondary schools; and across regions, school-to-school mobility rate varied between 6.6% and 9.2% in 2015 for secondary schools.

Figure 2.7b.

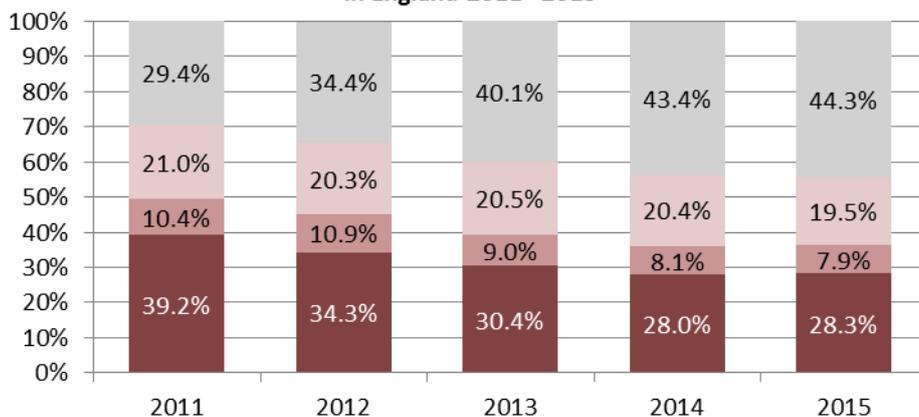


Overall, the result is that the proportion of entrants to secondary schools that are from other state-funded schools increased from 29.4% to 44.3% (Figure 2.8b). The proportion of schools' recruitment activity that is generated by movements between schools has

risen and now makes up more of the entrants than the next largest source - NQTs. For secondary schools, school-to-school mobility accounts for 16.0 percentage points more than NQTs

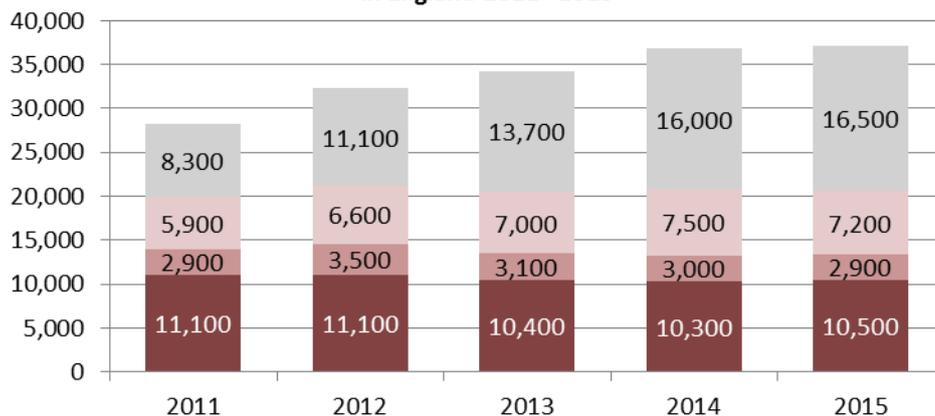
Figure 2.8b.

Contributions to total school entrants numbers – secondary schools in England 2011 - 2015



Source: School Workforce Census

Contributions to total school entrants numbers – secondary schools in England 2011 - 2015



Source: School Workforce Census

3. Classroom and head teacher vacancies.

The School Workforce Census asks schools to provide the number of classroom teaching and leadership positions that are considered as a vacancy on the census day in November, and for each of these vacancies to say both whether they have been advertised and whether they are filled on a temporary basis. The number of vacancies a school holds will vary throughout the year so the timing of the census is likely to play a role in the absolute number reported. The number of vacancies that had been advertised and/or temporarily-filled reported for 2015 was just 3,600²¹.

This chapter presents an alternative measurement of vacancies at a regional level: **the proportion of schools within a region which have at least one advertised vacancy or temporarily-filled post on the census day in November**. The relationship between school size and the number of vacant posts being reported is also given, along with how vacancy rates vary with the amount of school-to-school mobility a school experiences. It should be noted that vacancies, particularly in November, are not a comprehensive indicator of recruitment situations within a school. This report does not provide an analysis of vacancy drivers and no conclusions can be drawn from the data here as to how vacancies are impacting on schools.

Overall, the proportion of schools reporting classroom teacher vacancies has increased since 2010, with London consistently reporting the highest levels.

Figures 3.1a and 3.1b look at the variation in vacancies in each English region between 2010 and 2015 for primary and secondary schools respectively. As previously stated, these figures look at the proportion of schools within a region recording a teacher vacancy or temporarily-filled teaching post. Both primary and secondary schools experienced increases in regional vacancy rates during this time and more secondary schools than primary schools recorded vacancies, due to the increased probability of recording a vacancy as the size of school increased. There was an overall increase across the six years and for the majority of regions, including a steady increase between 2011 and 2014.

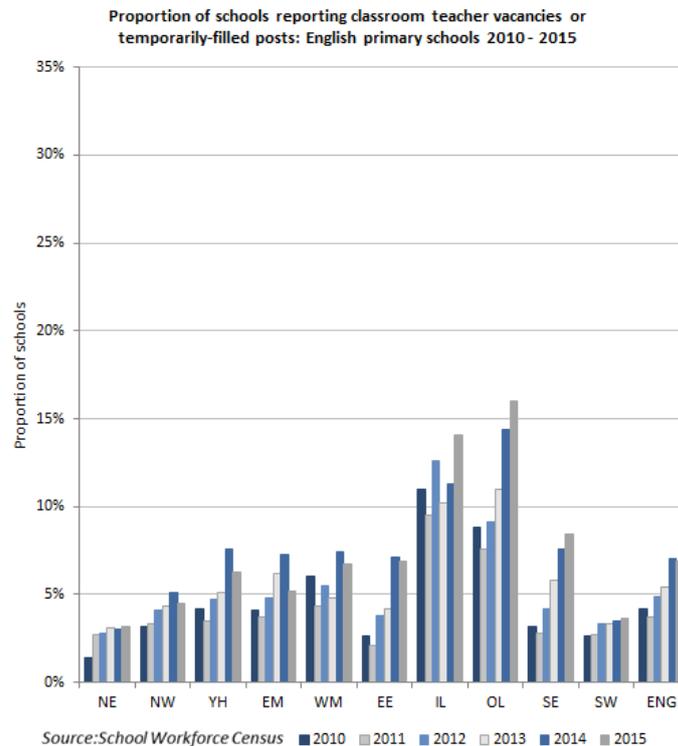
Primary classroom teacher vacancies

Primary schools saw an increase in vacancies between 2010 and 2015 of 2.7 percentage points to 6.9% in 2015. There was a decrease between 2010 and 2011 and

²¹ Consistent with the 'School workforce in England: November 2015' SFR, this analysis includes vacancies that had been advertised but were not temporarily-filled (730) and vacancies that were temporarily-filled, whether or not they had been advertised (2,870).

then a steady rise. The 2010 to 2011 decrease is small, and due to random noise it may not be possible to attribute this fall to any particular occurrence.

Figure 3.1a.



Inner and Outer London consistently displayed a higher proportion of primary schools reporting a vacancy. Inner London had the highest proportion in 2010 for primary schools at 11.0% and Outer London had the highest proportion in 2015 at 16.0%. In both primary and secondary schools the lowest vacancy rates in 2010 through to 2015 were generally in the North East; the exceptions to this are in 2011, where the lowest vacancy rate was in the East of England for primary schools.

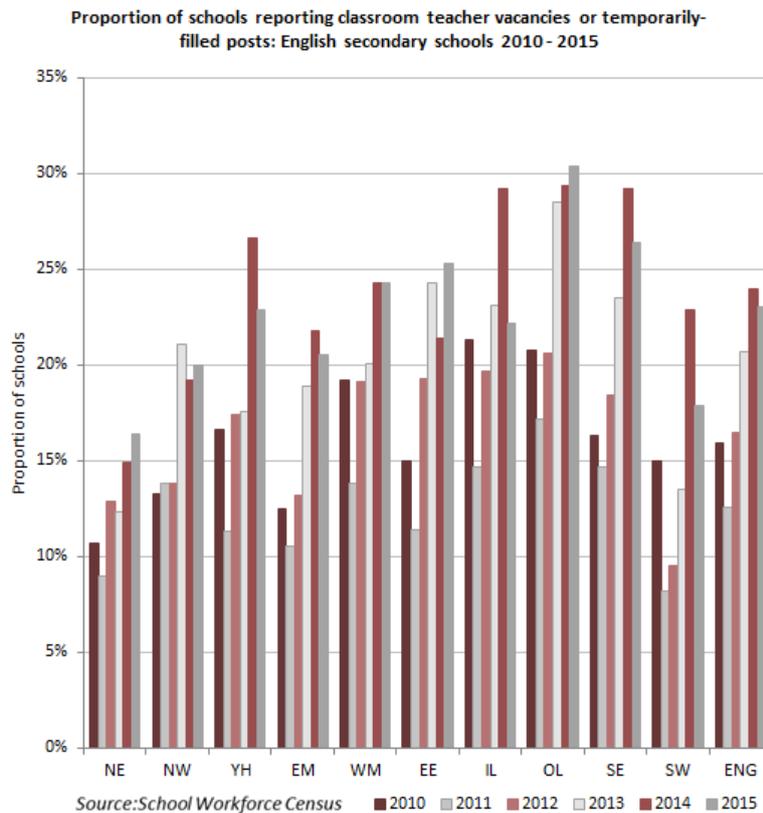
When looking at overall growth in the proportion of schools reporting a vacancy between 2010 and 2015, primary schools in Outer London had the highest growth (7.2 percentage points) and primary schools in the West Midlands had the smallest growth (0.7 percentage points).

Secondary classroom teacher vacancies

Secondary schools saw an increase in vacancies of 7.1 percentage points between 2010 and 2015 to 23.0% in 2015. Like with primary schools there was also a decrease between 2010 and 2011. This is likely to be associated with the drop in the overall number of secondary school teachers between 2010 (approximately 219,000) and 2011 (approximately 215,200), meaning it was easier to fill vacancies. Between 2009 and

2011, wastage was low²², possibly linked to wider uncertainty with the economy, with more teachers choosing not to leave the profession and instead wait to see how the economy was behaving at a later point, which again reduced the number of posts needing to be filled.

Figure 3.1b.



In secondary schools either Inner or Outer London displayed the highest proportion in any year; however the difference against other regions is not as marked as with primary schools. As with primary schools in 2010, Inner London experienced the highest proportion of secondary schools reporting a vacancy (21.3%) and in 2015 Outer London's rate was highest at 30.4%. In both primary and secondary schools the lowest vacancy rates in 2010 through to 2015 were generally in the North East; the exceptions to this are in 2011 and 2012, where the lowest vacancy rate was in the South West for secondary schools.

When looking at overall growth in the proportion of schools reporting a vacancy between 2010 and 2015, for secondary schools, the smallest regional growth across the recorded years was in Inner London (0.9 percentage points) and the largest was in the East of England (10.3 percentage points).

²² Data taken from the School Workforce Census 2015, Table 7a. The published SFR is available here: <https://www.gov.uk/government/collections/statistics-school-workforce>

Vacancies and school size

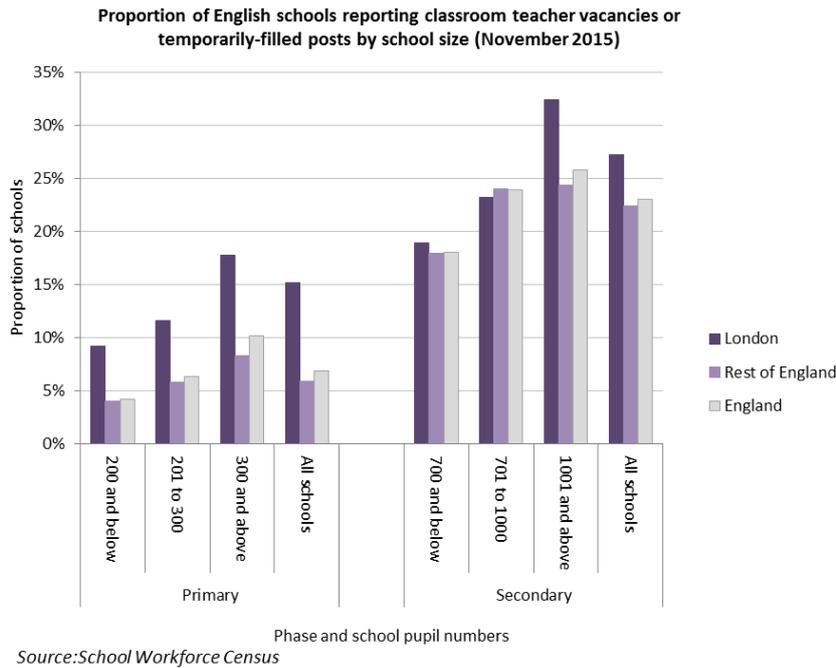
Figure 3.1c, using November 2015 data, illustrates the relationship between school size and whether or not a school recorded a vacancy or temporarily-filled post – the greater the size, the higher the likelihood a vacancy was recorded. With primary schools, this increases fairly steadily from 4.2% of schools with 200 pupils or below to 10.2% of schools with 301 pupils or above²³ for all geographical categories.

For secondary schools, England as a whole experienced an increase with each category of school size. The smallest, 700 pupils and below, had 18.0% of schools with at least one vacancy or temporarily-filled post whilst the largest, 1001 pupils and above, had a proportion of 25.8%. London showed a similar trend to England as a whole; hence London's schools of more than 1000 pupils had the highest proportion of schools with vacancies: 32.4%. For the rest of England, there is little difference between secondary schools of 700 to 1000 pupils (24.0%) and the largest schools of 1000+ pupils (24.4%). The proportion of secondary schools recording vacancies was higher than primary schools, probably due to size: secondary schools are typically far larger than primary schools, and as a school increases in size, so does the probability that there is at least one vacancy.

London's higher proportion of schools with vacancies, seen in Figure 3.1c, can be attributed to the higher level of wastage (shown in Figures 2.1a and 2.1b) and to a lesser extent movement to other state-funded schools (shown in Figures 2.5a and 2.5b). The link between wastage and movement between state-funded schools and vacancies is explained in the section below, and illustrated in Figures 3.2a to 3.2d.

²³ The categories were chosen so that roughly one third of schools were in each category.

Figure 3.1c.



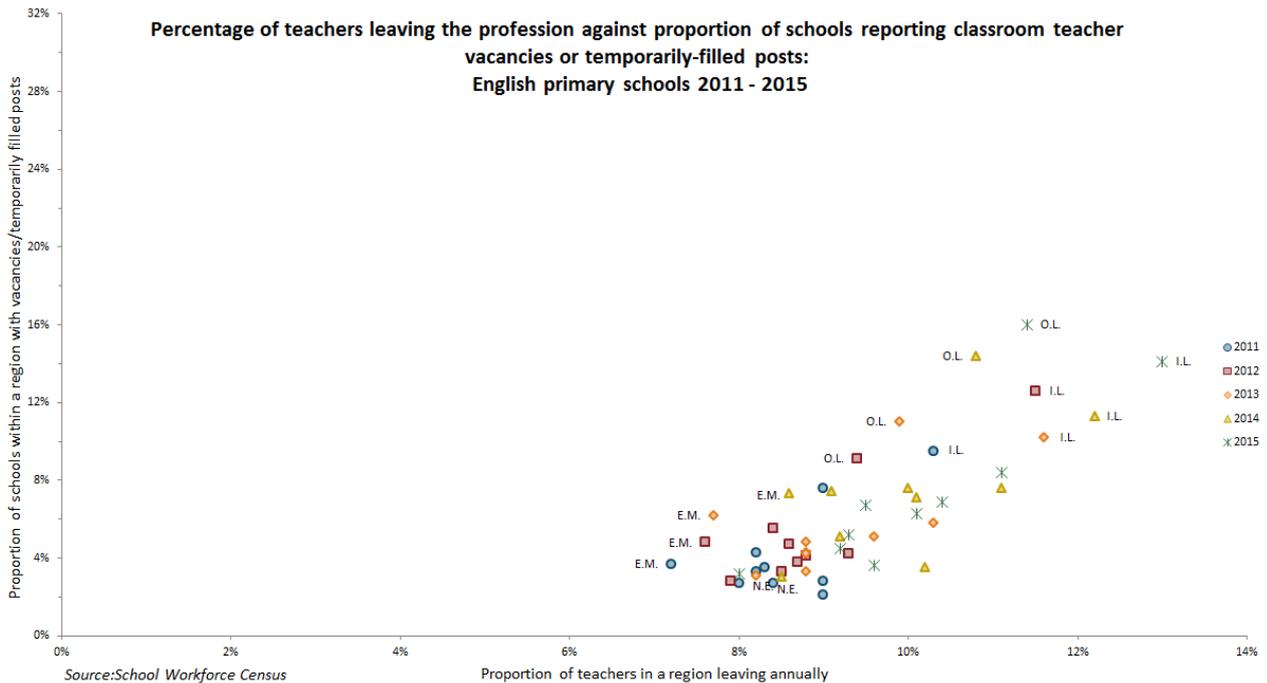
The proportion of schools with vacancies and temporarily-filled posts increased as school-to-school mobility increased.

There is naturally a link between the number of teachers leaving their posts, either to leave the profession or to move between state-funded schools, and the vacancies which are subsequently created. The following two graphs show the percentage of teachers who have left the profession at the end of an academic year (shown initially in Figures 2.1a and 2.1b) against the proportion of schools reporting a vacancy or temporarily-filled post (shown initially in Figures 3.1a and 3.1b) in the November of the next academic year. For example, the percentage of teachers who left the profession in the North East at the end of the academic year in summer 2011 (the 2010/11 academic year) is plotted against the proportion of schools in the North East with vacancies in November 2011 (the 2011/12 academic year). On the graph this example would be found in the 2011 group. Data is shown for each of the ten English regions for each year across five years, hence fifty data points.

In Figure 3.2a (the relationship between teachers leaving the profession and proportion of primary schools with vacancies) there does not appear to be any trends over time. However there is a noticeable pattern across regions, where, irrespective of the year, the East Midlands has lower rates and London higher ones. The majority of the points outside this cluster are data points for Inner London (I.L.) and Outer London (O.L) – reinforcing the trends seen for primary school vacancies in Figure 3.1a. Also as with Figure 3.1a, the North East (shown in Figure 3.2a as N.E.) had the lowest proportion of schools with vacancies. However, there is also a cluster of points in this portion of the graph representing the East Midlands – although this region generally had a lower percentage of teachers leaving than the North East, they had a higher proportion of

vacancies.

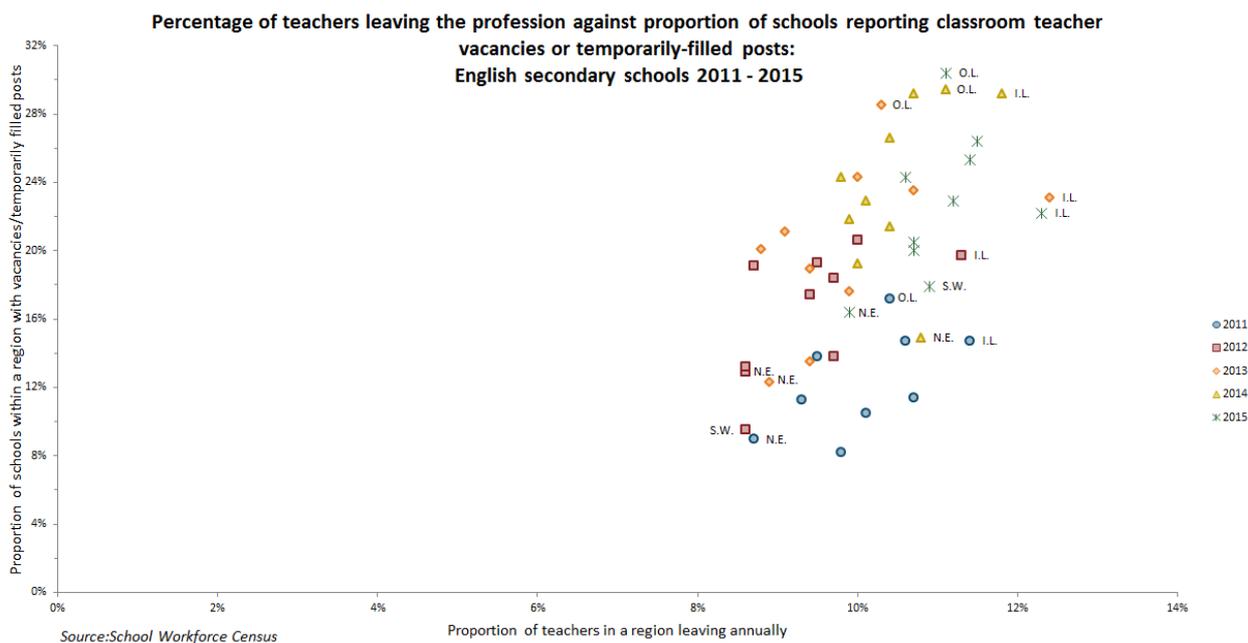
Figure 3.2a.



Secondary schools exhibit a slightly clearer trend than primary schools over time (Figure 3.2b): between 2011 and 2015, both the annual percentage of teachers leaving the profession and the proportion of schools recording vacancies or temporarily-filled posts generally increased. Interestingly though, between 2011 and 2012 there was a nationwide increase in the proportion of schools reporting vacancies; however the proportion of teachers leaving the profession decreased in 8 out of 10 regions during that period.

There is also a very clear trend that London regions (I.L. or O.L.) constantly had the highest rates of wastage and proportion of schools which had a vacancy whilst the North East (N.E.) was consistently amongst the lowest.

Figure 3.2b.



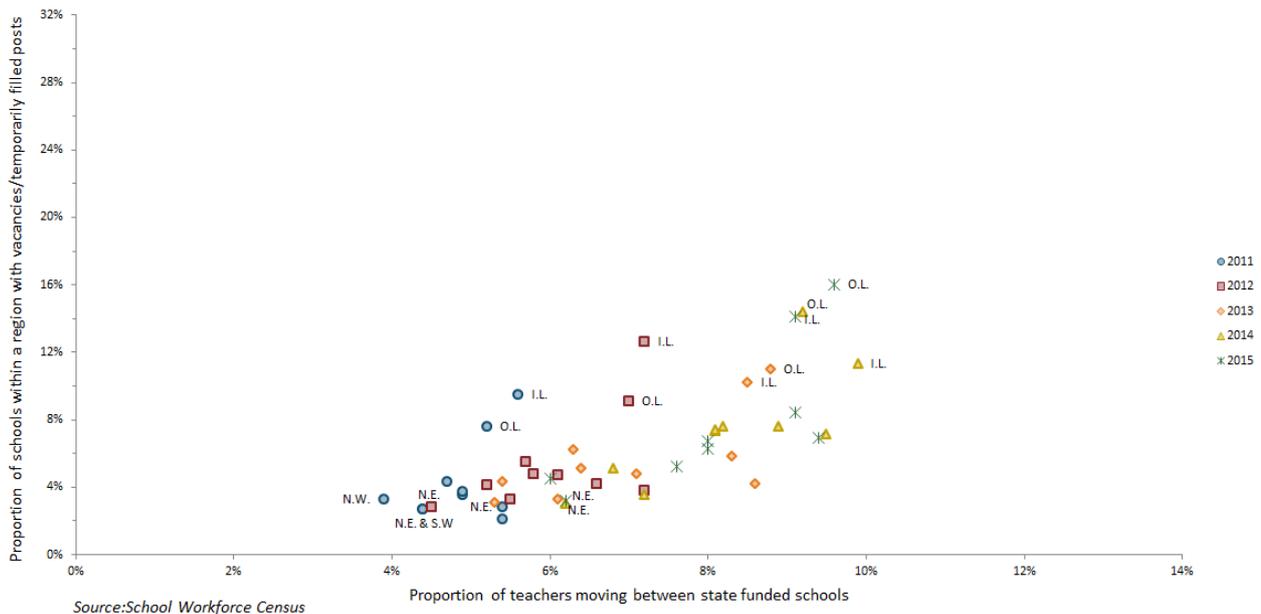
The following two graphs, Figures 3.2c and 3.2d, are in the same format as the previous two figures, but instead of showing the percentage of teachers leaving the state-funded school sector they show the percentage of teachers who moved to a different state-funded school, as first shown in Figures 2.5a and 2.5b.

When compared to Figure 3.2a, Figure 3.2c shows a slightly less clear change in supply characteristics over time – each year’s clusters are not overly distinct from one another, but there is still an increase in both the percentage of teachers who moved to a different state-funded school and the proportion of schools who reported a vacancy or temporarily-filled post, with the latter being less pronounced.

There was a noticeable increase in teachers moving between state-funded schools in the primary phase (the yearly average increased by 3.2 percentage points between 2011 and 2015). We also see an increase, though smaller at 2.7 percentage points, in the proportion of schools reporting vacancies or temporarily-filled posts. As mentioned, across all years we see dispersion in the data points, however yet again we see London regions at the top of graph and Northern regions as the lowest points: the two London regions are consistently separate from the other regions in England.

Figure 3.2c.

Percentage of teachers moving between state-funded schools against proportion of schools reporting classroom teacher vacancies or temporarily-filled posts: English primary schools 2011 - 2015



Of the four graphs in this section, Figure 3.2d below shows the clearest increase over time. In this figure, movers between state-funded secondary schools are plotted against the proportion of secondary schools reporting classroom teacher vacancies or temporarily-filled posts. Again we see London exhibiting the highest movement and proportion of vacancies, with the North East exhibiting the lowest. What is also noticeable is that with each increasing year, the points for that year become more and more dispersed, meaning a larger variation in both characteristics for that year.

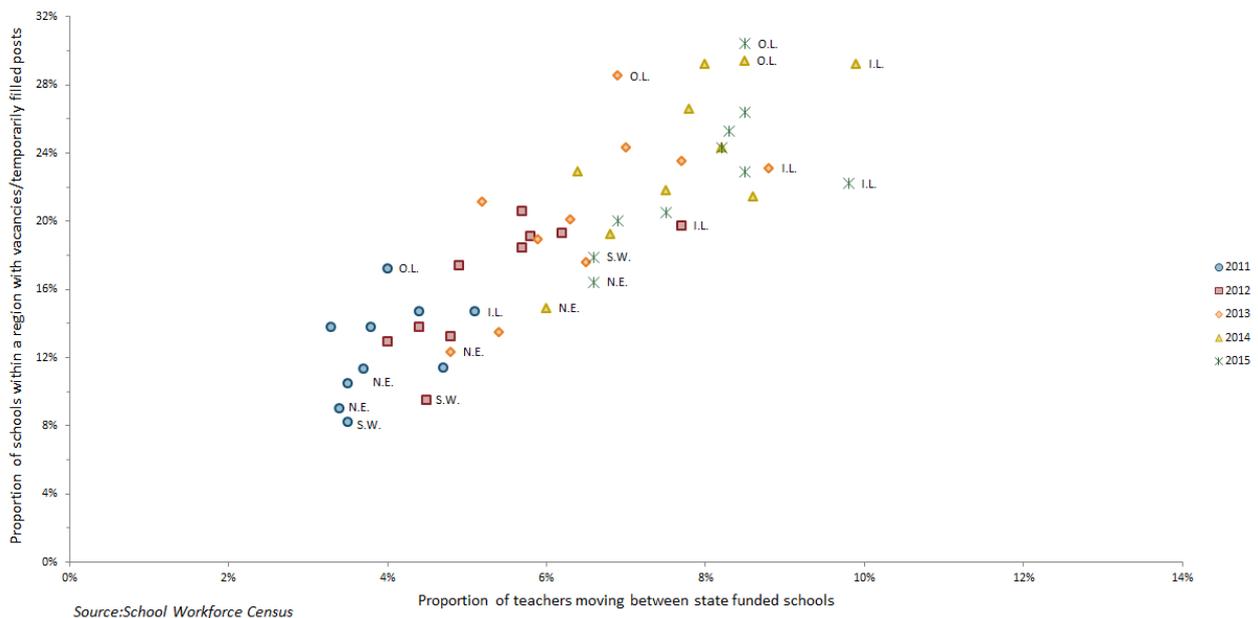
In order to assess the relationships between the proportion of secondary schools with vacancies and the teacher flow measures described, it is possible to estimate the amount of variability in the different measures that “change together”. In order to do this, a Pearson product-moment correlation is calculated: the size of the correlation coefficient calculated provides a measure of the strength of relationship between the two measures.

The Pearson’s correlation coefficient for teachers *leaving* secondary schools and the proportion of secondary schools with vacancies (Figure 3.2b) is 0.55; this means that there is a medium relationship between proportion of secondary schools with vacancies and teachers leaving secondary schools. Unsurprisingly, as the proportion of schools reporting vacancies increases, so does the number of teachers leaving the secondary sector. For *movers* between secondary schools and the proportion of secondary schools with vacancies (Figure 3.2d) it is 0.85, which means that there is a much stronger relationship between number of movers between secondary schools and the proportion of secondary schools with vacancies. Again, this is positive, so as the number of movers between secondary schools increases, so does the proportion of secondary schools reporting vacancies. It is important to note that a correlation does not imply that one variable causes a change in the other variable, simply that the two measures co-vary.

The change in rate of teachers *leaving* the state secondary sector across regions and years thus accounts for only 30%²⁴ of the change in proportions of schools advertising vacancies across regions and years. In contrast, the change in rate of teachers *moving* between schools in the state secondary sector accounts for 72% of the change in proportions of schools advertising vacancies across regions and years. (For primary schools, the difference is much less striking: *leaving* accounts for 62% and *moving* accounts for 48% of proportions of vacancies advertised). This means that for secondary schools the growth in teachers moving between schools is driving the increases in the vacancy rate.

Figure 3.2d.

Percentage of teachers moving between state-funded schools against proportion of schools reporting classroom teacher vacancies or temporarily-filled posts: English secondary schools 2011 - 2015



There were no noticeable trends in the proportion of schools reporting a head teacher vacancy.

It is expected that all maintained schools have a head teacher in place, and all maintained schools have a responsibility to ensure there is a teacher (appointed head teacher or otherwise) in the role of the head teacher at all times²⁵, and so consequentially the number of head teacher vacancies is small. In all of England between 2010 and 2015

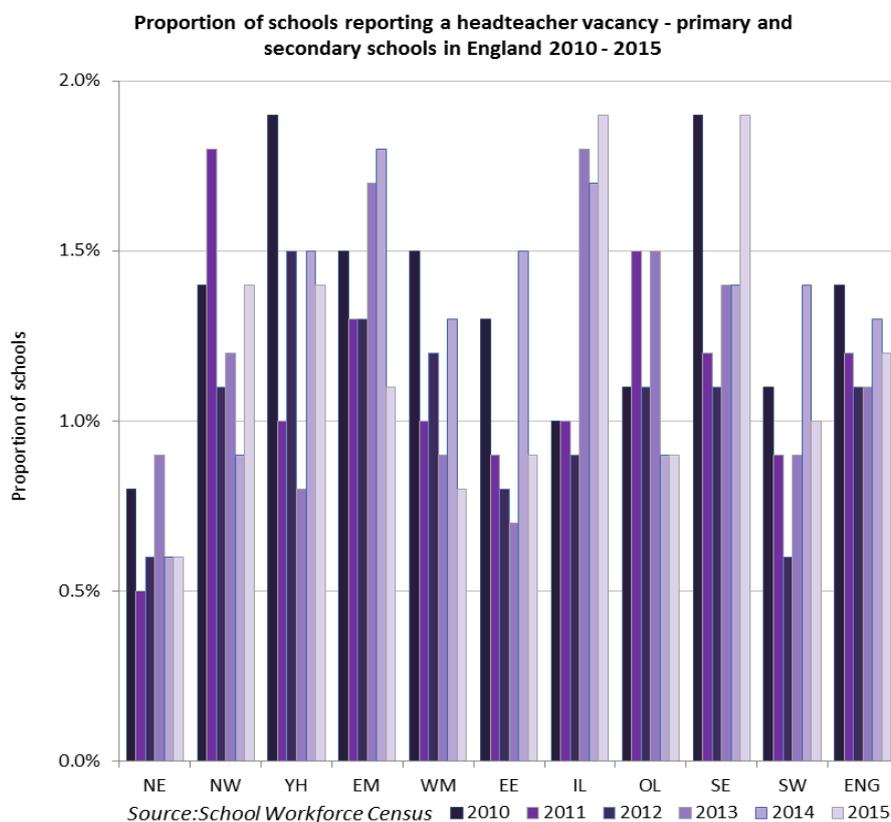
²⁴ With the Pearson product-moment correlation the square of the coefficient estimates the percentage of shared variance (i.e. the change in scores together for the two variables).

²⁵ Sections 35(3) and 36(3) Education Act 2002.

there was a 0.2 percentage points decrease from 1.4% to 1.2% in the proportion of schools reporting a head teacher vacancy. There are no discernible trends across the recorded years across England as a whole, any one region, or any combination of regions. Because of the small numbers of schools with a head teacher vacancy in November of an academic year, a lot of the variation between years visible in Figure 3.3 is likely to be affected by changes in the times of advertisements.

London is not noticeably different to other regions; however as with Figures 3.1a and 3.1b, the North East exhibited lower vacancies than other regions, with the exception of 2013 when the East of England had the lowest rate of head teacher vacancies. The 2011 proportion of 0.5% in the North East is the lowest across any year. At the opposite end, no region consistently showed the highest proportion across all five years.

Figure 3.3.



4. Comparing workforce data across different types of school.

This chapter builds on the school-level workforce measures analysed in Chapters 1 and 2, exploring the differences in seven particular measures between different types of school and the characteristics of the areas in which they are located. The seven workforce measures compared in this chapter are:

- pupil:teacher ratio;
- proportion of unqualified teachers;
- wastage rate;
- rate of leavers to other schools;
- entrant rate;
- proportion of entrants to a school who are newly qualified teachers (NQTs);
- percentage of hours taught by specialists²⁶ in EBacc subjects²⁷.

This chapter explores whether there is any difference in these measures, and therefore potential recruitment and retention challenges, based on six different classifications of schools. The criteria used to separate schools in this chapter are:

1. school sector, i.e. local-authority-maintained schools and academies;
2. rural/urban classification²⁸;
3. coastal/inland classification;
4. the deprivation of the area in which the school is located– using the index of multiple deprivation (IMD)²⁹;
5. the deprivation of the pupils in the school – using the percentage of pupils eligible for free school meals (FSM);
6. an overlap of rural/urban classification, coastal/inland classification and IMD.

²⁶ For this publication we have taken a new experimental approach to link the qualifications of teachers across all six years of the School Workforce Census. This means if a teacher obtains a new relevant qualification in later years, or if records are updated (for example when a teacher moves schools) then we would now count them as a specialist. This means that a higher rate of teachers now show having a specialist qualification.

²⁷ The English Baccalaureate (EBacc) comprises English, mathematics, sciences, languages and history or geography. To enter the EBacc a student must enter GCSEs in: either both English language and English literature, or combined English; mathematics; either core and additional science, double science, or any three of biology, chemistry, computer science and physics; a language; history or geography. To achieve the EBacc, a student must achieve GCSEs at A*-C in: either English language or English literature, or combined English; mathematics; core and additional science, double science, or any two of biology, chemistry, computer science and physics; a language; and history or geography.

²⁸ 2011 Rural-Urban Classification of Local Authority Districts and other higher level geographies for statistical purposes. <https://www.gov.uk/government/statistics/2011-rural-urban-classification-of-local-authority-and-other-higher-level-geographies-for-statistical-purposes>.

²⁹ English indices of deprivation 2015. <https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015>.

The proportion of unqualified teachers was higher in academies than in maintained schools

Table 4.1 shows the differences between local-authority-maintained schools and academies using data from the November 2015 School Workforce Census. As the number of schools which are academies continues to grow it is important to understand whether there are any substantial differences in the nature and school-to-school mobility of the workforce between academies and local-authority-maintained schools.

Table 4.1. Workforce measures by sector

Sector	Number of schools	Average across school category						
		Pupil-teacher ratio	Proportion of unqualified teachers (%)	Wastage rate (%)	Rate of leavers to other schools (%)	Entrant rate (%)	Proportion of entrants into schools NQT (%)	% hours taught by specialists in EBacc subjects
Primary schools								
Maintained schools	14,243	20.4	2.8	10.0	7.8	10.5	31.7	.
Academies	2,951	20.6	4.6	10.7	9.7	12.7	34.2	.
Total	17,194	20.5	3.1	10.1	8.1	10.9	32.2	.
Secondary schools								
Maintained schools	1,197	15.1	4.8	11.1	7.6	8.9	28.3	90.1
Academies	2,203	15.2	6.6	10.9	8.2	9.8	28.9	90.3
Total	3,400	15.2	6.0	11.0	8.0	9.5	28.7	90.2

Source: School Workforce Census

The main differences between the two are the proportion of teachers who were unqualified and the rate at which teachers left to go to another school, shown in Figure 4.1.

Academies had a higher proportion of teachers who were unqualified, with 4.6% of teachers in primary academies and 6.6% in secondary academies being unqualified compared to 2.8% and 4.8% respectively in local-authority-maintained schools. Academies are given more freedom to recruit unqualified teachers so this may reflect a choice as opposed to any difficulties in recruiting teachers with qualified status.

Academies were also more likely to have teachers leaving to go to other schools, with 9.7% of primary academy and 8.2% of secondary academy teachers leaving to go to another school between 2014 and 2015 compared to 7.8% and 7.6% respectively in local-authority-maintained schools.

We have not yet conducted analysis into the differences between sponsor and convertor academies. We welcome feedback³⁰ on the methods used and insights generated in this report, to inform future research and development of future publications using the SWC.

³⁰ Please send your views to: TeachersAnalysisUnit.MAILBOX@education.gsi.gov.uk

The proportion of new teachers in schools that are newly qualified is higher in urban areas

Table 4.2 shows the differences between schools based on the rural/urban classification (as defined by DEFRA) of the local authority district in which the school is situated. Rural and urban areas may have different types of workforce and this explores whether these differences are reflected in the retention and school-to-school mobility of staff in these areas.

Table 4.2. Workforce measures by rural/urban classification

Rural/urban classification of LAD	Number of schools	Average across school category						
		Pupil-teacher ratio	Proportion of unqualified teachers (%)	Wastage rate (%)	Rate of leavers to other schools (%)	Entrant rate (%)	Proportion of entrants into schools NQT (%)	% hours taught by specialists in EBacc subjects
Primary schools								
Mainly rural	2,204	20.3	1.7	10.7	7.3	9.8	24.4	.
Largely rural	2,526	20.5	2.2	9.6	7.5	9.7	29.1	.
Urban with significant rural	2,536	20.6	2.4	9.9	7.8	10.1	29.1	.
Urban with city and town	4,087	20.8	2.9	9.8	8.2	10.9	32.9	.
Urban with conurbation	5,841	20.3	4.0	10.3	8.4	11.6	34.8	.
Total	17,194	20.5	3.1	10.1	8.1	10.9	32.2	.
Secondary schools								
Mainly rural	320	15.9	4.6	11.0	7.1	8.1	22.7	90.0
Largely rural	449	15.9	5.3	11.2	7.0	8.6	25.3	89.7
Urban with significant rural	473	15.7	5.1	11.2	7.3	9.3	26.7	90.2
Urban with city and town	866	15.3	6.3	10.9	8.4	9.3	27.7	89.4
Urban with conurbation	1,292	14.6	6.5	10.9	8.4	10.3	32.0	91.0
Total	3,400	15.2	6.0	11.0	8.0	9.5	28.7	90.2

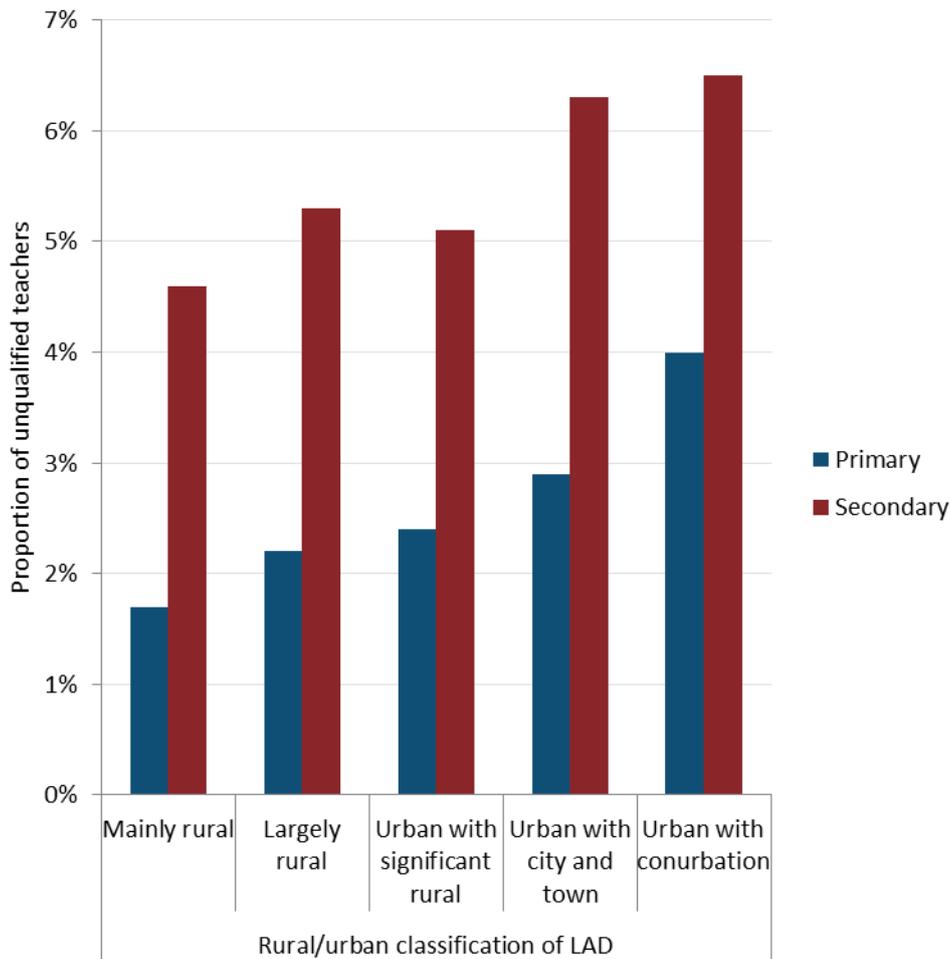
Source: School Workforce Census

The percentage of teachers who were unqualified in rural schools was lower than in urban schools (Figure 4.2), with 1.7% of teachers in primary schools in mainly rural areas being unqualified compared to 4.0% in urban areas with a conurbation. Similarly 4.6% of teachers in secondary schools in mainly rural areas were unqualified compared to 6.5% in urban areas with a conurbation.

Rural schools also saw lower entrant rates and lower rates of leavers to other schools.

Figure 4.2.

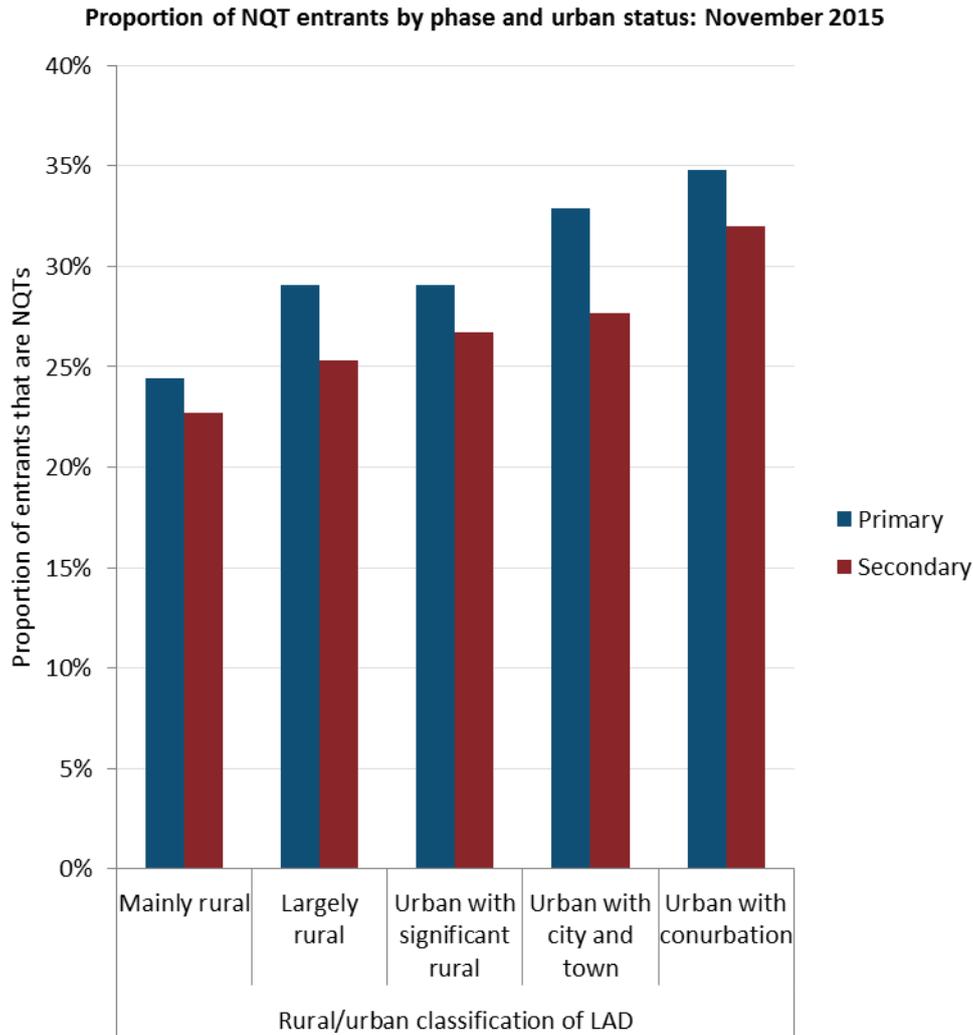
Proportion of unqualified teachers by phase and urban status:
November 2015



Rural schools also had a lower percentage of new teachers recruited as newly qualified teachers (Figure 4.3). 24.4% of new entrants into primary schools in mainly rural areas were NQTs compared to 34.8% in urban areas with a conurbation. Similarly 22.7% of new entrants into secondary schools in mainly rural areas were NQTs compared to 32.0% in urban areas with a conurbation. This is likely to be because a higher proportion of NQTs are aged 20-39 and urban populations have higher proportions of people in this age group than rural populations. It may also relate to where people have done their initial teacher training³¹. This is something we could look at in future research.

³¹ See <https://www.gov.uk/government/statistics/initial-teacher-training-performance-profiles-2014-to-2015>

Figure 4.3.



There does not appear to be much difference between coastal schools and inland schools

Table 4.3 shows the differences between schools based on whether they are defined as coastal or inland schools. For this analysis, coastal schools are defined as one where the postcode is within 5 miles of the coast of England. This explores whether coastal schools experience any differences in the recruitment and retention of the workforce, in comparison to inland schools.

Table 4.3. Workforce measures in coastal and inland schools

Average across school category								
	Number of schools	Pupil-teacher ratio	Proportion of unqualified teachers (%)	Wastage rate (%)	Rate of leavers to other schools (%)	Entrant rate (%)	Proportion of entrants into schools NQT (%)	% hours taught by specialists in EBacc subjects
Primary schools								
	Coastal	2,397	20.3	2.4	9.4	7.1	10.5	32.0
	Inland	14,797	20.5	3.3	10.2	8.2	11.0	32.3
	Total	17,194	20.5	3.1	10.1	8.1	10.9	32.2
Secondary schools								
	Coastal	498	15.3	6.1	11.1	7.9	8.9	27.0
	Inland	2,902	15.2	6.0	11.0	8.0	9.6	29.0
	Total	3,400	15.2	6.0	11.0	8.0	9.5	28.7

Source: School Workforce Census

Schools defined as coastal have a slightly lower percentage of new teachers recruited as NQTs, with 32.0% of entrants in coastal primary schools and 27.0% in coastal secondary schools recruited as NQTs compared to 32.3% and 29.0% respectively in inland schools.

Inland schools also had a higher rate of leavers to other schools than coastal schools, with 8.2% of teachers in inland primary schools leaving to go to other schools between 2014 and 2015 compared to 7.1% in coastal schools. In inland secondary schools there is little difference, with 8.0% of teachers leaving to go to another school between 2014 and 2015 compared to 7.9% in coastal schools.

Other than this there does not appear to be much difference between coastal schools and inland schools for the other workforce measures analysed here.

Pupil:teacher ratios were higher in less deprived areas, but these areas also had higher numbers of unqualified teachers and teachers leaving to go to other schools.

Two tables have been produced to look at how the schools workforce measures vary by different levels of deprivation. One looks at the deprivation of the area in which the school is located (using the index of multiple deprivation - IMD) and the other looks at the deprivation levels of the pupils attending each school (free school meals - FSM). See [Annex 2](#) for more information.

Table 4.4 shows the differences between schools based on the IMD score of the lower super output area (LSOA) within which the school is located. The IMD for each LSOA is produced by the Department of Communities and Local Government (DCLG) every five years; the IMD relating to 2015 was used here. Primary schools and secondary schools have been divided into five equally-sized groups based on their scores. This explores whether schools *in more deprived areas* face greater challenges with the schools workforce than less deprived areas.

Table 4.4. Workforce measures by deprivation of area

Quintile of LAD IMD (5=most deprived)	Number of schools	Average across school category						
		Pupil- teacher ratio	Proportion of unqualified teachers (%)	Wastage rate (%)	Rate of leavers to other schools (%)	Entrant rate (%)	Proportion of entrants into schools NQT (%)	% hours taught by specialists in EBacc subjects
Primary schools								
1	3,439	21.8	2.1	9.7	7.4	10.0	29.9	.
2	3,439	20.9	2.5	9.9	7.5	10.2	30.3	.
3	3,439	20.5	3.0	10.2	8.1	10.5	31.5	.
4	3,439	20.1	3.7	10.4	8.4	11.4	32.8	.
5	3,438	19.6	4.0	10.2	8.7	12.1	35.5	.
Total	17,194	20.5	3.1	10.1	8.1	10.9	32.2	.
Secondary schools								
1	680	15.8	4.3	10.6	6.7	8.8	28.5	91.3
2	680	15.6	5.2	10.6	7.5	8.8	27.6	90.6
3	680	15.2	6.3	11.1	8.0	9.7	27.5	90.0
4	680	14.9	6.8	11.5	8.8	9.9	29.4	89.5
5	680	14.3	7.5	11.3	9.3	10.6	30.5	89.4
Total	3,400	15.2	6.0	11.0	8.0	9.5	28.7	90.2

Source: School Workforce Census

Table 4.5 shows the differences between schools based on the percentage of pupils in the school who were eligible for free school meals, with primary and secondary schools divided into five equally-sized groups based on their scores (quintiles). This explores whether schools *which have their pupils coming from a more deprived background* face greater challenges with the school's workforce than those with pupils from a less deprived background.

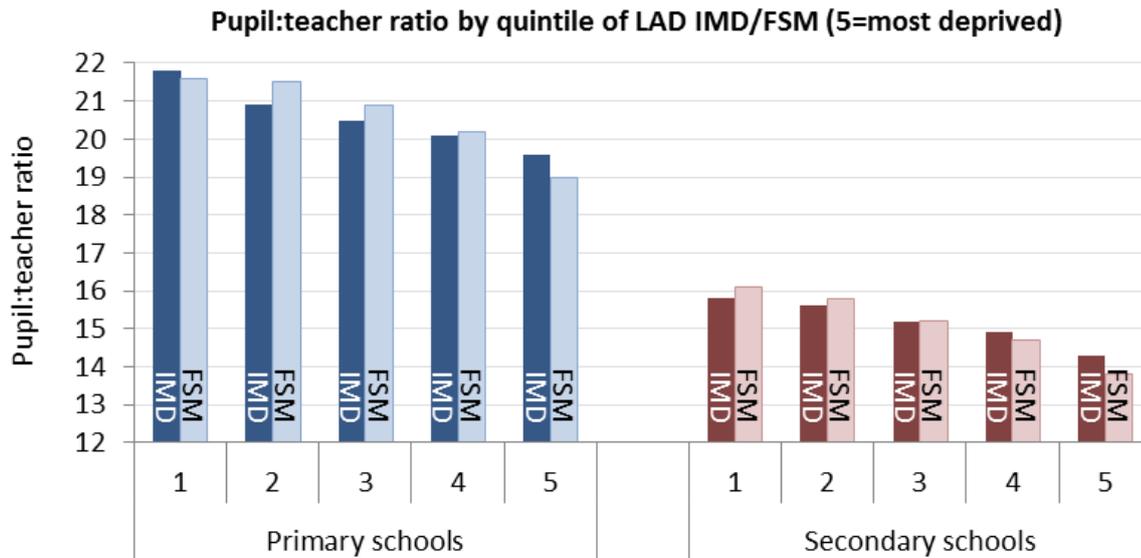
Table 4.5. Workforce measures by the proportion of pupils claiming free school meals

Quintile of FSM rate (5=highest)	Number of schools	Average across school category						
		Pupil- teacher ratio	Proportion of unqualified teachers (%)	Wastage rate (%)	Rate of leavers to other schools (%)	Entrant rate (%)	Proportion of entrants into schools NQT (%)	% hours taught by specialists in EBacc subjects
Primary schools								
1	3,425	21.6	1.9	9.8	6.7	9.5	28.8	.
2	3,425	21.5	2.4	9.6	7.2	10.1	31.3	.
3	3,425	20.9	3.0	9.9	7.8	10.8	32.1	.
4	3,425	20.2	3.7	10.2	8.6	11.2	33.3	.
5	3,425	19.0	4.0	10.6	9.4	12.3	34.0	.
Total	17,194	20.5	3.1	10.1	8.1	10.9	32.2	.
Secondary schools								
1	678	16.1	4.0	10.4	5.6	8.2	26.7	92.2
2	678	15.8	4.8	10.6	7.0	8.6	27.8	90.9
3	678	15.2	5.9	11.1	8.0	9.4	27.3	89.8
4	678	14.7	7.1	11.4	9.7	10.7	30.1	89.1
5	678	13.8	8.2	11.6	10.4	11.2	31.6	88.2
Total	3,400	15.2	6.0	11.0	8.0	9.5	28.7	90.2

Source: School Workforce Census

Both tables 4.4 and 4.5 show that schools had a higher pupil:teacher ratio where deprivation is lower, whether that is the deprivation of the area in which the school is located or the deprivation of the pupils within the school. This is also shown in Figure 4.4.

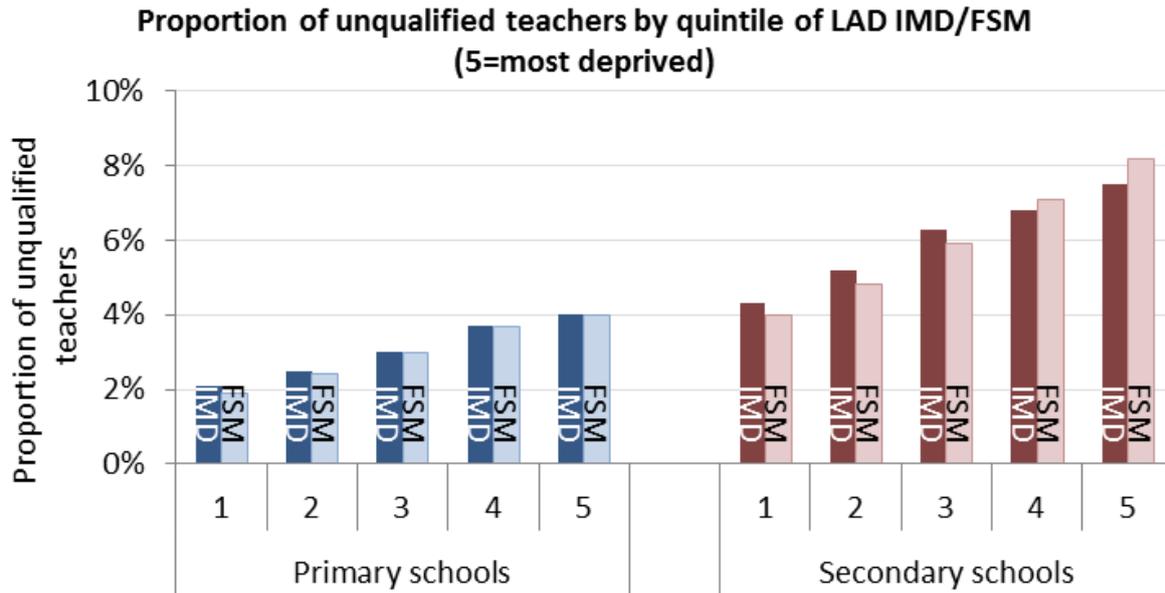
Figure 4.4.



The difference between the most and least deprived schools is slightly more pronounced where the deprivation of the *pupils within the school* was being analysed. For the deprivation of the **area**, the difference between the quintiles of most and least deprived primary schools is 2.2 and for secondary schools the difference is 1.5. For the deprivation of the **pupils** it is 2.6 in primary schools and 2.3 in secondary schools.

The proportion of teachers who were unqualified was also higher in those schools with more deprived pupils or in a more deprived area (Figure 4.5 illustrates this effect). When comparing schools across deprivation **areas**, the difference in the proportion of teachers who were unqualified in the most and least deprived areas is 1.9 percentage points in primary schools and 3.2 percentage points in secondary schools. The difference for secondary schools increases more than the difference for primary schools when comparing the most and least deprived schools by the deprivation of the **pupils**, in this case the difference in primary schools is 2.1 percentage points and in secondary schools it is 4.2 percentage points.

Figure 4.5.

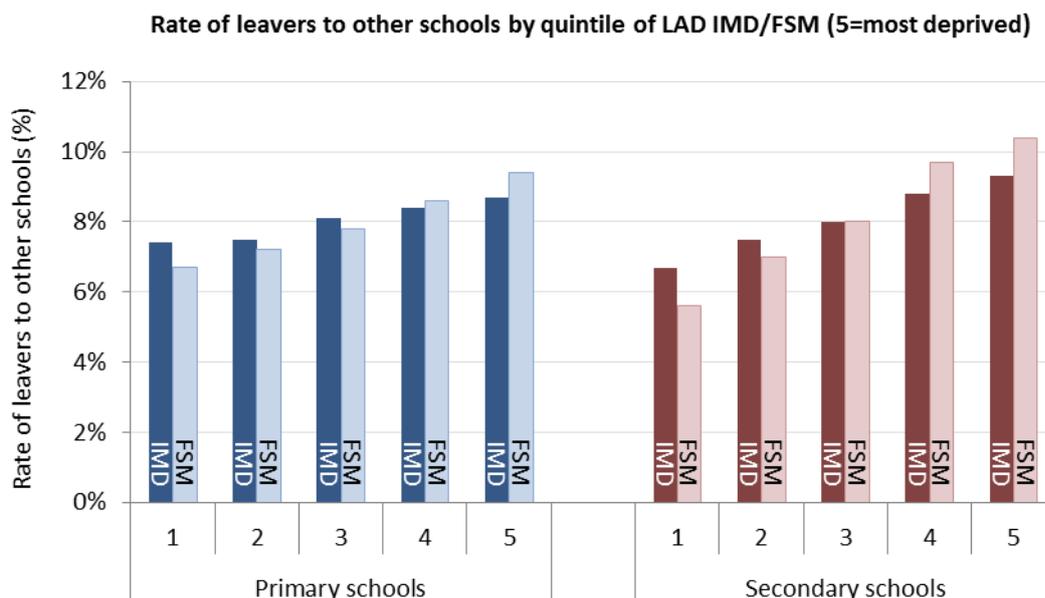


Schools in less deprived areas or with less deprived pupils found it easier to hold onto teachers both in terms of a smaller proportion of teachers leaving the sector entirely and a smaller proportion leaving to go to other schools.

The wastage rate is 0.5 percentage points lower in primary schools in the least deprived **areas** than those in the most deprived areas; the difference is 0.7 percentage points for secondary schools. The difference is even larger when comparing schools based on the deprivation of the **pupils** within the schools; it is 0.8 percentage points between primary schools with the least and most deprived pupils and 1.2 percentage points for secondary schools.

The rate at which teachers left to go to other schools was also lower in less deprived schools and again the difference between the least and most deprived schools is more pronounced when comparing the deprivation of the pupils in the school than when comparing the deprivation of the area where the school is located (Figure 4.6). For the deprivation of the **area**, the differences are 1.3 percentage points for primary schools and 2.6 percentage points for secondary schools. For the deprivation of the pupils within the school, the difference between the least and most deprived schools is 2.7 percentage points for primary schools and 4.8 percentage points for secondary schools.

Figure 4.6.



Overall, 90.2% of all hours spent teaching EBacc subjects were taught by specialists in that subject in secondary schools in November 2015. This figure reduced as deprivation increased. The least deprived schools in terms of **area** had 91.3% of EBacc hours taught by a specialist teacher; in terms of the deprivation of the **pupils** attending the school the figure was 92.2%. These figures were 1.9 percentage points higher than the most deprived schools based on the deprivation of the **area** and 4.0 percentage points higher than the most deprived schools based on the deprivation of the **pupils** in the school.

The analyses conducted on the data for deprivation levels showed a greater effect in most cases for the FSM measure (proportion of children in the school eligible for free school meals) than the IMD measure (rating of the LSOA in which the school was located). However, the pattern of results was very similar for both measures. This suggests that both measures were indeed measuring the same underlying construct: level of deprivation³².

³² In order to assess this further, Pearson product-moment correlations were calculated between FSM quintile scores and IMD quintile scores for all seven variables analysed above (PTR, proportion of unqualified teachers, wastage and school-to-school mobility rates, entrant rates, proportion of entrants as NQTs and proportion of EBacc hours taught by specialist teachers). The Pearson correlation assesses the strength of the relationship between two measures and ranges from -1 to +1, with a score further from 0 meaning a stronger relationship. If FSM and IMD measure the same underlying construct, then the correlations should be near +1. The seven correlation coefficients calculated ranged from 0.93 to 0.99, with an average value of 0.97. On average then, 93% of the variability in teacher-related variables was shared by FSM and IMD measures.

Overlapping classifications

Table 4.6 shows the differences between schools grouped together based on an overlap of the rural/urban classification, coastal/inland classification and the IMD score. This explores whether there is any particular combination of geographical factors which has a strong relationship with the school's workforce recruitment, school-to-school mobility and retention measures analysed here. This provides a first, and rudimentary, attempt at identifying the way various geographical classifications interact to affect the flow of teachers in different regions of England³³.

Table 4.6. Overlaps in rural, area deprivation and coastal classifications

	Average across school category							% hours taught by specialists in EBacc subjects
	Number of schools	Pupil-teacher ratio	Proportion of unqualified teachers (%)	Wastage rate (%)	Rate of leavers to other schools (%)	Entrant rate (%)	Proportion of entrants into schools NQT (%)	
Primary schools								
Rural, high deprivation, coastal	540	20.0	2.2	9.8	6.6	9.5	28.4	.
Rural, high deprivation, inland	1,210	19.8	2.3	10.4	8.0	10.5	28.9	.
Rural, low deprivation, coastal	311	21.0	2.1	9.3	7.8	9.8	24.1	.
Rural, low deprivation, inland	2,669	20.7	1.8	10.1	7.3	9.4	26.4	.
Urban, high deprivation, coastal	993	19.5	2.9	9.5	7.2	11.1	33.5	.
Urban, high deprivation, inland	5,854	20.0	4.1	10.4	8.9	11.9	34.6	.
Urban, low deprivation, coastal	553	21.6	1.8	8.9	7.0	10.5	34.4	.
Urban, low deprivation, inland	5,064	21.3	2.7	9.9	7.7	10.4	31.5	.
Total	17,194	20.5	3.1	10.1	8.1	10.9	32.2	.
Secondary schools								
Rural, high deprivation, coastal	85	15.5	7.0	11.9	8.6	8.3	21.7	88.1
Rural, high deprivation, inland	177	15.6	5.2	12.4	7.6	8.9	22.5	89.6
Rural, low deprivation, coastal	68	15.8	4.8	10.9	6.7	9.2	23.6	89.5
Rural, low deprivation, inland	439	16.1	4.6	10.6	6.7	8.1	25.3	90.3
Urban, high deprivation, coastal	206	14.6	6.5	11.7	8.6	9.1	27.7	88.8
Urban, high deprivation, inland	1,232	14.5	7.3	11.1	9.1	10.6	30.7	89.6
Urban, low deprivation, coastal	139	15.7	5.7	10.3	7.4	8.9	29.9	90.1
Urban, low deprivation, inland	1,054	15.5	5.1	10.8	7.3	9.2	29.0	91.3
Total	3,400	15.2	6.0	11.0	8.0	9.5	28.7	90.2

Source: School Workforce Census

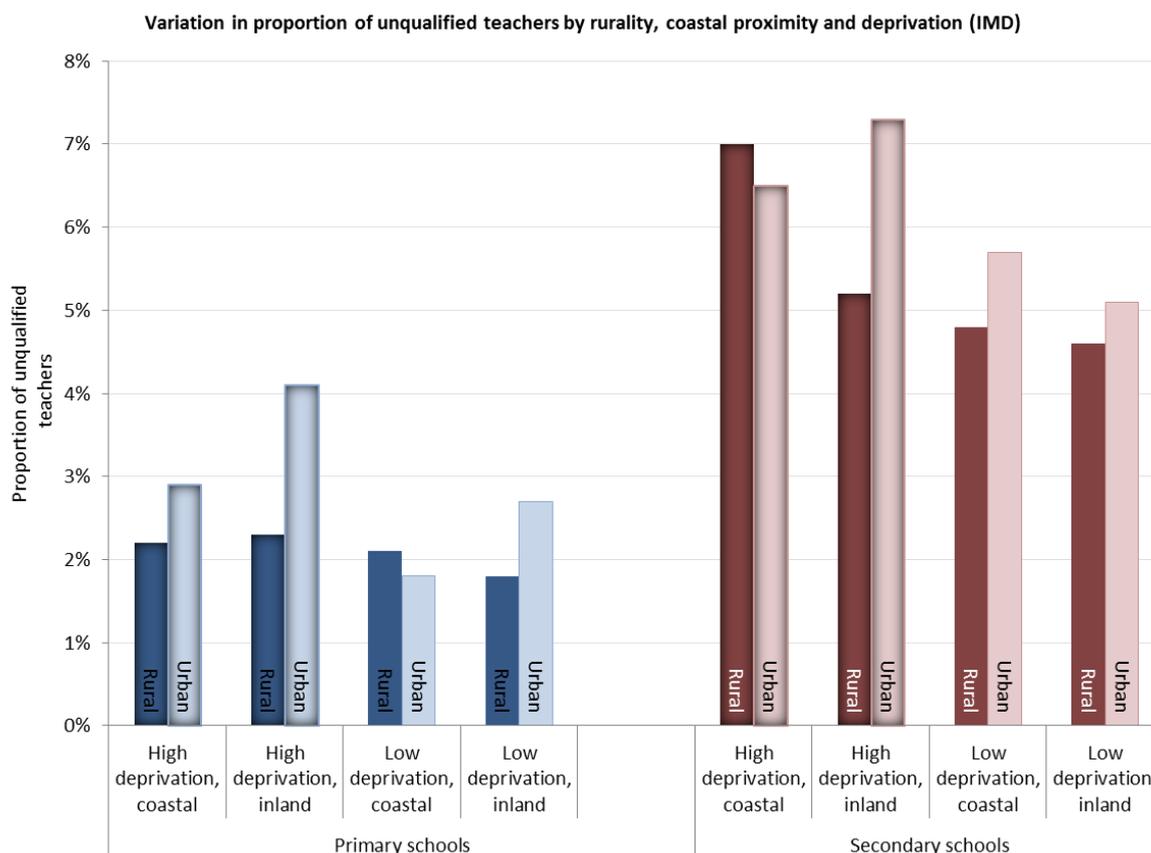
In general, schools in lower deprivation areas had a higher pupil:teacher ratio than those in higher deprivation areas; deprivation also appears to have had a stronger relationship with the pupil:teacher ratio than whether the school is in a rural or urban area or if the school is situated on the coast or inland. In every situation where all other variables were fixed and only the deprivation was adjusted, the schools in the lower deprived areas had a higher pupil:teacher ratio than in the more deprived areas. Further analysis is needed to explore this effect.

Schools in higher deprivation areas had a higher proportion of their teachers who were unqualified than those in lower deprivation areas, with this effect being amplified when the higher deprivation areas are also urban (see Figure 4.7). Again, deprivation does

³³ This approach to classifications is experimental and no further analysis has yet been undertaken on these groups. Some of the patterns seen may be driven by factors already highlighted, such as the differences between London and other areas.

appear to have a stronger relationship with the proportion of teachers who were unqualified than whether the school is situated in an urban or rural area or if it is a coastal or inland school. In all situations where all other variables were fixed and only the deprivation was adjusted, the schools in the more deprived areas had a higher proportion of unqualified teachers than in the less deprived areas. This may suggest that schools in less deprived areas find it easier to fill teaching roles with qualified teachers, a hypothesis to be investigated further.

Figure 4.7.



Deprivation also appears to have the strongest relationship with the wastage rate of a school, as opposed to whether it is in a rural or urban area or is coastal or inland, although the relationship is not very strong. In all situations where all other variables were fixed and only the deprivation was adjusted, schools in the more deprived areas had a higher wastage rate than in the less deprived areas. The biggest difference in wastage rates is seen at secondary schools in inland rural areas; a higher proportion of teachers left the state-funded school sector in high deprivation areas (12.4%) than low deprivation areas (10.6%). For primary schools, the largest difference is in low deprivation urban areas; a higher proportion of teachers left the state-funded school sector in inland areas (9.9%) than coastal areas (8.9%).

All three geographical classifications had a relatively slight relationship with the rate at which teachers left to move to another school. Overall, teachers in urban, inland high deprivation areas were more likely to move between schools in both primary and

secondary schools than any other overlap of geographical classifications. In primary schools 8.9% of teachers left schools in urban, inland high deprivation areas to go to another school, this was 0.9 percentage points higher than the second-highest geographic classification. Similarly, in secondary schools, 9.1% of teachers left schools in urban, inland high deprivation areas to go to another school; this was 0.5 percentage points higher than the second-highest geographic classification.

The rurality of an area had perhaps the strongest relationship with the entrant rate into the sector. Schools in urban areas had a higher percentage of their qualified teachers who were teachers recruited into the state-funded sector between 2014 and 2015. This effect can be seen more strongly in the primary phase than the secondary phase.

The rurality of an area also had the strongest relationship with the proportion of new teachers who entered a school as NQTs. In every situation where all other variables were fixed and only the rurality was adjusted, schools in the rural areas had a lower percentage of new teachers recruited into schools as NQTs than in the urban areas. The most likely reason for this, as was mentioned in chapter 4.2, is that urban areas have a higher proportion of people in their 20s and 30s which is the age group at which people are most likely to be NQTs.

All three geographical classifications had a similar relationship with the percentage of hours taught by specialists in EBacc subjects. This was higher in areas of low deprivation than it was in areas of high deprivation; it was higher in inland schools than it was in coastal schools; and it was higher in urban areas than it was in rural areas. This is seen in every situation where both other variables are fixed for each of the three geographical classifications, except for one instance. There was no difference in percentage of hours taught by specialists in EBacc subjects between urban and rural schools located in high deprivation inland areas. These findings suggest that the effects of rurality, distance from coast and deprivation on specialist teaching for EBacc subjects might be independent of one another. Further analysis is needed to explore this suggestion.

Annex 1: list of tables and figures.

The following tables used in this publication are available in Excel format on the Department's website:

1. The composition and deployment of the schools workforce.

Figure 1.1a. Regional trends in regular FTE teachers – primary schools

(Indexed: 2010 = 100)

Figure 1.1b. Regional trends in regular FTE teachers – secondary schools

(Indexed: 2010 = 100)

Figure 1.2a. Regional trends in pupil:teacher ratios – primary schools

Figure 1.2b. Regional trends in pupil:teacher ratios – secondary schools

Figure 1.3a. Regional trends in pupil:adult ratios – primary schools

Figure 1.3b. Regional trends in pupil:adult ratios – secondary schools

Figure 1.4. Regional trends in the distribution of hours taught across groups of subjects in a typical week to pupils in years 7 to 13 (2010 and 2015)

Figure 1.5a. Regional trends in the proportion of hours taught to pupils in years 7 to 13 by a teacher with a relevant post-A- level qualification - science and mathematics (2010 and 2015)

Figure 1.5b. Regional trends in the proportion of hours taught to pupils in years 7 to 13 by a teacher with a relevant post-A-level qualification – English and humanities (2010 and 2015)

Figure 1.5c. Regional trends in the proportion of hours taught to pupils in years 7 to 13 by a teacher with a relevant post-A-level qualification – modern foreign languages (2010 and 2015)

Figure 1.5d. Regional trends in the proportion of hours taught to pupils in years 7 to 13 by a teacher with a relevant post- A-level qualification – non-EBacc subjects (2010 and 2015)

Figure 1.5e Distribution across schools and local authority districts in the proportion of hours taught to pupils in years 7 to 13 by a teacher with a relevant post-A-level qualification

Figure 1.6a. Regional trends in the proportion of FTE regular teachers without QTS – primary schools

Figure 1.6b. Regional trends in the proportion of FTE regular teachers without QTS – secondary schools

2. Trends in teacher mobility.

Figure 2.1a. Regional trends in overall wastage rates – primary schools

Figure 2.1b. Regional trends in overall wastage rates – secondary schools

Figure 2.2a.i. Wastage composition by region – primary schools

Figure 2.2b.i. Wastage composition by region – secondary schools

Figure 2.2a.ii. Decomposition of change in wastage rates by region – primary schools

Figure 2.2b.ii. Decomposition of change in wastage rates by region – secondary schools

Figure 2.3a. Regional trends in entrant rates – primary schools

Figure 2.3b. Regional trends in entrant rates – secondary schools

Figure 2.4a.i. Entrant composition by region – primary schools

Figure 2.4b.i. Entrant composition by region – secondary schools

Figure 2.4a.ii. Decomposition of change in entrant rates by region – primary schools

Figure 2.4b.ii. Decomposition of change in entrant rates by region – secondary schools

Figure 2.5a. Regional trends in the rate of leavers to other state-funded schools – primary schools

Figure 2.5b. Regional trends in the rate of leavers to other state-funded schools – secondary schools

Figure 2.6a. Contributions to total school leaver numbers – primary schools

Figure 2.6b. Contributions to total school leaver numbers – secondary schools

Figure 2.7a. Regional trends in the rate of school entrants from other state-funded schools – primary schools

Figure 2.7b. Regional trends in the rate of school entrants from other state-funded schools – secondary schools

Figure 2.8a. Contributions to total school entrant numbers – primary schools

Figure 2.8b. Contributions to total school entrant numbers – secondary schools

3. Classroom and head teacher vacancies.

Figure 3.1a. Proportion of schools reporting classroom teacher vacancies or temporarily-filled posts – primary schools

Figure 3.1b. Proportion of schools reporting classroom teacher vacancies or temporarily-filled posts – secondary schools

Figure 3.1c. Proportion reporting classroom teacher vacancies or temporarily-filled posts by school size

Figure 3.2a. Percentage of teachers leaving the state-funded school sector against proportion of schools reporting classroom teacher vacancies or temporarily-filled posts – primary schools

Figure 3.2b. Percentage of teachers leaving the state-funded school sector against proportion of schools reporting classroom teacher vacancies or temporarily-filled posts – secondary schools

Figure 3.2c. Percentage of teachers moving between state-funded schools against proportion of schools reporting classroom teacher vacancies or temporarily-filled posts – primary schools

Figure 3.2d. Percentage of teachers moving between state-funded schools against proportion of schools reporting classroom teacher vacancies or temporarily-filled posts – secondary schools

Figure 3.3. Proportion of schools reporting a headteacher vacancy – primary and secondary schools

4. Comparing workforce data across different types of school.

Table 4.1. Workforce measures by sector

Figure 4.1. Proportion of teachers unqualified across different sectors

Table 4.2. Workforce measures by rural/urban classification

Figure 4.2. Proportion of teachers unqualified by rural/urban classification

Figure 4.3. Proportion of entrants to a school that were newly qualified teachers by rural/urban classification

Table 4.3. Workforce measures in coastal and inland schools

Table 4.4. Workforce measures by deprivation of area

Table 4.5. Workforce measures by the proportion of pupils claiming free school meals

Figure 4.4. Pupil:teacher ratio by quintile of LAD IMD/FSM (5=most deprived)

Figure 4.5. Proportion of unqualified teachers by quintile of LAD IMD/FSM (5=most deprived)

Figure 4.6. Rate of leavers to other schools by quintile of LAD IMD/FSM (5=most deprived)

Table 4.6. Overlaps in rural, area deprivation and coastal classifications

Figure 4.7. Variation in proportion of unqualified teachers by rurality, coastal proximity and deprivation (IMD)

When reviewing the tables, please note the following:

We round numbers.	All percentages will be rounded to 1 decimal place, with all other values being rounded to either 1 decimal place or to an integer value, depending on context (large counts such as counts of groups of teachers, are rounded to the nearest 100, for example).
We have adopted the following symbols to help with identification.	Symbols are used in the tables as follows: <ul style="list-style-type: none">. not applicable.. not available- nil or negligible
Totals for England do not necessarily equal averages for regions.	Because of the differing sizes of the ten regions and the number of schools within them, averaging of the regional values will not equal the national value for England, which is calculated directly from school-level data.

Annex 2: notes on variables and school classifications.

Workforce variables

For more information on the underlying schools workforce data, please see the latest School Workforce Census statistical first release, available at:

<https://www.gov.uk/government/collections/statistics-school-workforce>

Workforce variable	Description
Pupil:teacher ratio	<p>The pupil:teacher ratio is calculated by dividing the number of pupils by all full time qualified and unqualified teacher equivalent (FTE) regularly employed in schools in the same geographical classification.</p> <p>For statistical purposes only, pupils who do not attend both morning and afternoon at least five days a week are regarded as part-time. Each part-time pupil is treated as 0.5 FTE.</p> <p>Teachers FTE rate is based on the number of hours a teacher works in a week divided by the number of hours the school sets as full time.</p> <p>The numbers of pupils and teachers within a school have only been included in the calculations for the pupil:teacher ratio where both sets of data are available for the school.</p>
Pupil:adult ratio	<p>The pupil:adult ratio is calculated by dividing the total FTE number of pupils on roll in schools by the total FTE number of all teachers and support staff employed in schools, excluding administrative and clerical staff.</p>
The distribution of hours taught across groups of subjects in a typical week to pupils in years 7 to 13	<p>The distribution of hours taught in a typical week by groups of subjects is calculated by adding all the hours taught in the subjects within each group and dividing by the total number of hours in all subjects. Data has only been included where schools have supplied curriculum data. The subject groups are:</p> <ul style="list-style-type: none">• Mathematics and science• English and humanities• Modern foreign languages• Non-EBacc subjects

Workforce variable	Description
Proportion of hours taught to pupils in years 7 to 13 by a teacher with a relevant post-A-level qualification	The percentage of hours taught by specialists in a subject has been defined as the number of hours that we know were taught by specialists in that subject divided by the total number of hours that we know were taught by either a specialist or non-specialist, i.e. all hours taught in subjects where it is <u>not known</u> whether the teacher was a specialist were <u>excluded</u> .
Proportion of teachers that are unqualified	<p>The proportion of teachers that are unqualified has been calculated by dividing the number of FTE teachers that are unqualified in schools by the total number of FTE teachers in schools.</p> <p>An unqualified teacher is either a trainee working towards qualified teacher status; an overseas trained teacher without QTS or an instructor who has a particular skill who can be employed for so long as a qualified teacher is not available.</p>
Wastage rate	<p>Wastage has been calculated by adding all qualified teachers who leave a school in a given year either because they have left the state-funded sector, they have retired or they are deceased.</p> <p>The wastage rate is then calculated by dividing the headcount of all teachers who left as wastage by the headcount of all qualified teachers in the school.</p> <p>A small number of schools do not provide School Workforce Census data. Wherever possible this missing data is approximated using the Database of Teacher Records, derived from teacher pensions data. Schools with missing data where such imputation is impossible are excluded from the calculations. Also excluded are schools with unreliable data, where there were a large number of missing values or values that were implausible for that particular measure.</p>
Entrant rate	<p>The entrant rate is calculated by summing the headcount of all teachers who start as a newly qualified teacher, deferred newly qualified teachers, returners to the profession or teachers new to the state-funded sector, and then dividing by the headcount of all qualified teachers.</p> <p>A small number of schools do not provide School Workforce Census data. Wherever possible this missing data is approximated using the Database of Teacher Records, derived from teacher pensions data. Schools with missing data where such imputation is impossible are excluded from the calculations. Also excluded are schools with unreliable data.</p>

Workforce variable **Description**

Rate of leavers to other schools The rate of leavers to other schools is calculated by dividing the headcount of all teachers who either leave to go to a different school or become centrally employed by the total headcount of all qualified teachers.

Contributions to total school leaver numbers The contribution to total school leaver numbers calculates what percentage of all those who leave a school do so by:

- a. leaving the state sector
- b. retiring
- c. dying
- d. moving to another school

Contributions to total school entrant numbers The contribution to total school entrant numbers calculates what percentage of all those who enter a school do so by:

- a. joining as a newly qualified teacher
- b. coming in from outside the state-funded sector
- c. returning to the state-funded sector
- d. moving from another school

Proportion of schools reporting classroom teacher vacancies or temporarily-filled posts The proportion of schools reporting classroom teacher vacancies or temporarily-filled posts is calculated by dividing all schools that reported at least one vacancy or temporarily-filled post at the time of the SWC by the total number of schools.

Proportion of schools reporting a head teacher vacancy The proportion of schools reporting a head teacher vacancy is calculated by dividing all schools that reported a vacancy for a head, a deputy head or an assistant head by the total number of schools.

School classifications

Classification **Description**

School type Comparisons have been made between academy schools and local-authority-maintained schools.

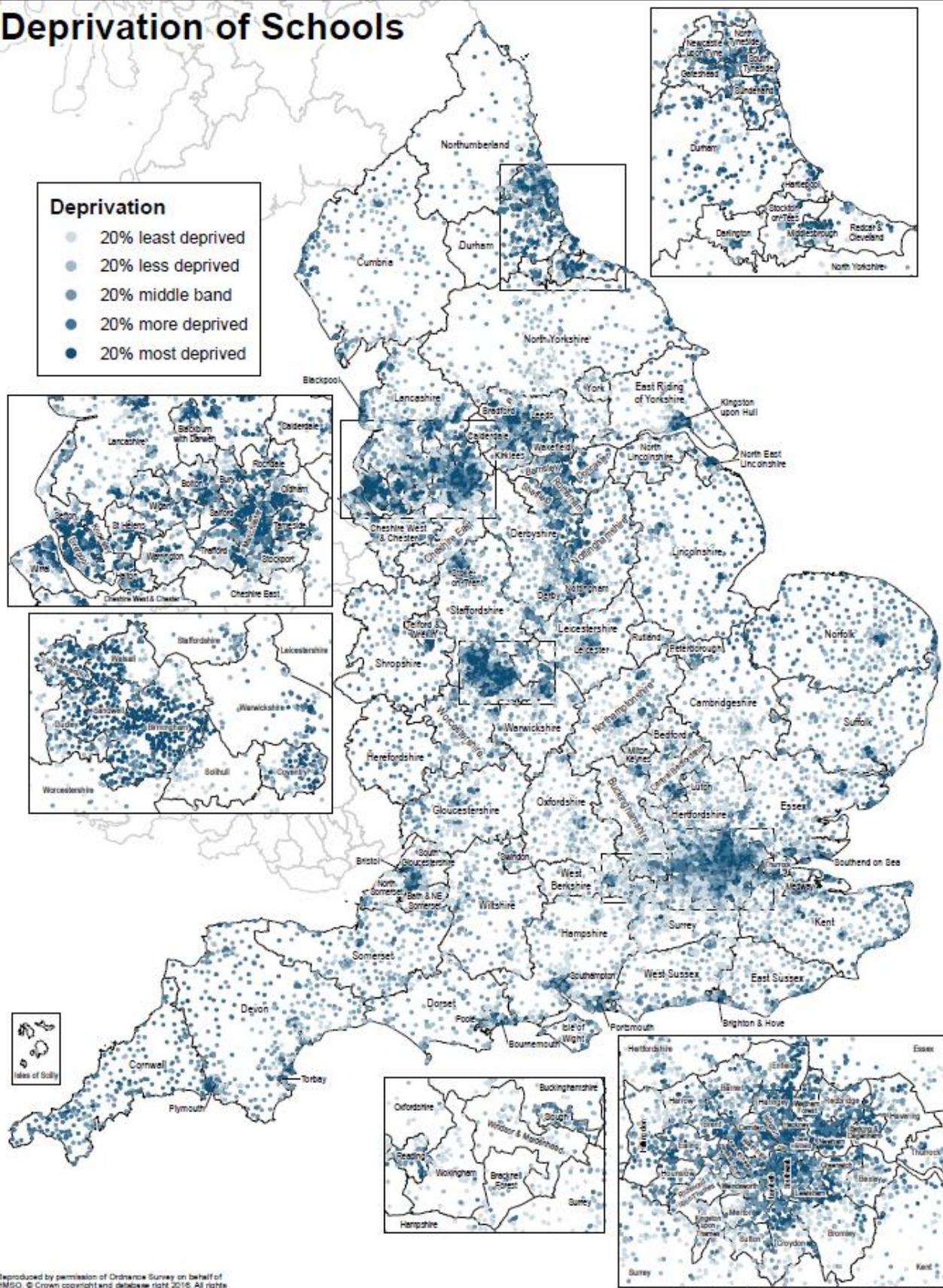
Classification	Description
School size	<p>Primary schools and secondary schools have both been split into three categories based on the number of FTE pupils the school has.</p> <p>For primary schools a small school has been defined as one with 200 or fewer FTE pupils, a medium-sized school has been defined as one with between 201 and 300 FTE pupils and a large one with 301 or more FTE pupils.</p> <p>For secondary schools a small school has been defined as one with 700 or fewer FTE pupils, a medium size school has been defined as one with between 701 and 1000 FTE pupils and a large one with 1001 or more FTE pupils.</p>
Regions	<p>In this report comparisons between schools have been made across the government office regions (East Midlands, East of England, London, North East, North West, South East, South West, West Midlands, Yorkshire and the Humber) with London split between Inner and Outer London. The Inner London and Outer London classification has been made in line with the Office of National Statistics definition; the London boroughs classified as Inner London are:</p> <ul style="list-style-type: none"> • Camden • City of London • Hackney • Hammersmith and Fulham • Haringey • Islington • Kensington and Chelsea • Lambeth • Lewisham • Newham • Southwark • Tower Hamlets • Wandsworth • Westminster
School deprivation	<p>School deprivation has been measured by the percentage of pupils within the school who are eligible to receive free school meals. Primary schools have been split into five equal groups where the 20% of schools with the lowest percentage of pupils eligible for free schools meals in 2015 were placed into group 1 and so on. A similar process was done for secondary schools.</p>

Classification	Description
Area deprivation	Area deprivation has been measured by the Index of Multiple Deprivation (IMD) score of the lower super output area that the school is located in. Primary schools have been split into five equal groups where the 20% of schools with the lowest IMD score in 2015 were placed into group 1 and so on. A similar process was done for secondary schools.
Rurality	Rurality has been defined based on the rural urban classifications of the Local Authority District (LAD) the school is in as defined by DEFRA. DEFRA uses six categories to classify LADs (mainly rural, largely rural, urban with significant rural, urban with city and town, urban with minor conurbation and urban with major conurbation) based on the percentage of the population in the LAD that lives in a rural area or rural-related hub towns. In this report urban with minor conurbation and urban with major conurbation have been combined into one category; urban with conurbation due to the size of the groups.
Coastal	Schools have been defined as being coastal if the postcode of the school is within 5 miles of the coast of England.

The study has also looked at schools in 8 different classifications based on an overlap of the rurality, deprivation and coastal classifications of the area the school is located in. For rurality, all schools in areas defined as mainly rural or largely rural were classified as rural and all other schools were urban. For deprivation schools were split into two equally-sized groups based on their IMD score with the 50% of schools with the lowest IMD scores classed as low deprivation and the rest classed as high deprivation. The coastal classification remains the same (school where the postcode is within five miles of the coast).



Deprivation of Schools



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Map created by Education Data Coalition: National Pupil Database and Observation List

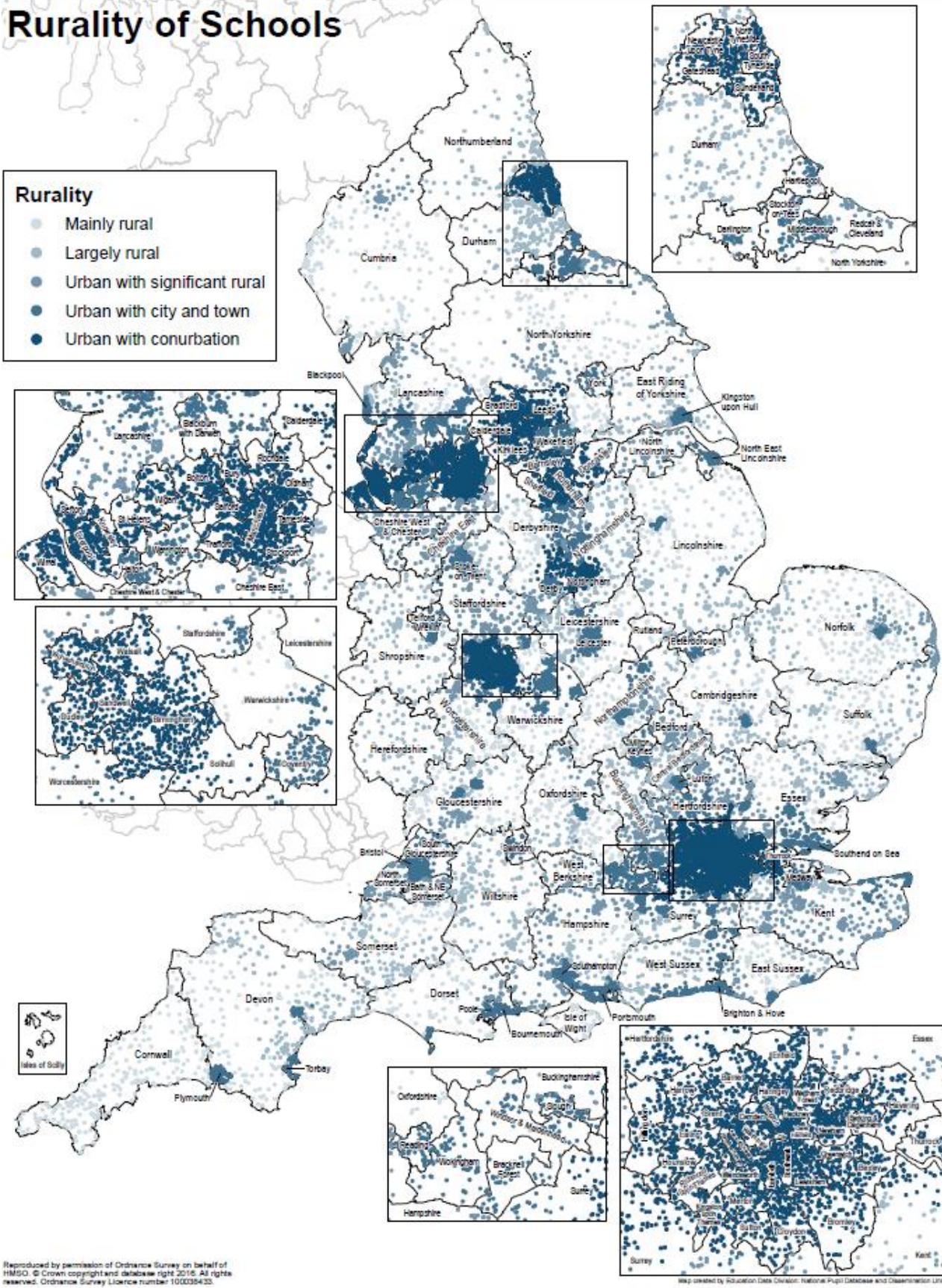
Deprivation measured by quintiles derived from IMD figures (2015).



Rurality of Schools

Rurality

- Mainly rural
- Largely rural
- Urban with significant rural
- Urban with city and town
- Urban with conurbation



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Map created by Education Data Co-ordinators: National Pupil Database and Observation List



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