

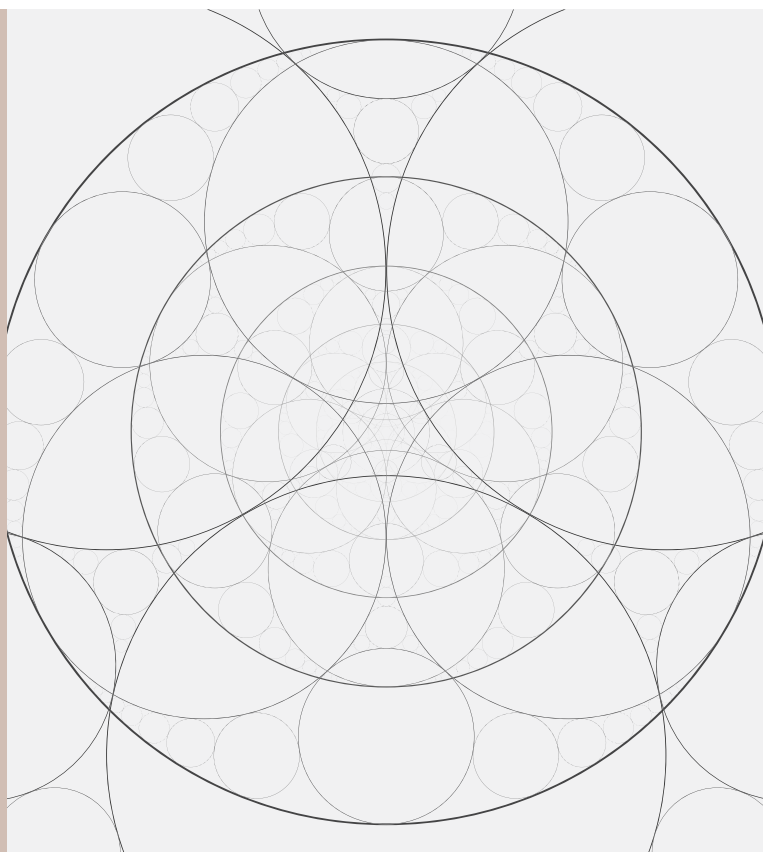
The impact of changes to teachers' pay on equality in schools in England

Report on employment and earnings trends for teachers with protected characteristics between 2010 and 2015

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Executive Summary

This report presents information on employment and earnings trend for teachers in England, focusing upon the comparative experience of teachers with protected characteristics. The report is based on the analysis of data from the annual DfE School Workforce Censuses for 2010 to 2015. Individual-level data has been aggregated to produce new information, not contained in published DfE reports on teacher employment which are based on the Census.

The highlights of the analysis are:

- The number of teachers in England grew by 4 per cent between 2010 and 2015.
- The number of teachers aged under 50 was expanding faster than average, while the number of teachers in their fifties fell by more than a fifth during this period.
- There was a major shift in employment from local (education) authority-controlled schools to academies.
- Women dominate employment, being most strongly represented in the primary phase. Men are more common in secondary schools and were more likely than women to work in academies. White teachers gained employment to a greater extent than BME teachers from the growth of academies.
- Employment grew strongly for younger teachers and teachers from minority ethnic groups between 2010 and 2015. Employment grew fastest for South Asian ethnic groups. However, BME groups formed a small percentage of teachers throughout this period.
- Men were more likely than women to be in senior posts. However, there was a relatively rapid increase in employment in senior posts for people from minority ethnic groups.
- For all teachers in work, male wages were higher than female and people from most minority ethnic groups earned less than white people.
- Annual average median wages fell between 2010 and 2015. Female wages declined slightly relative to those of men over this period, but there was convergence in relative earnings by age group and by ethnic group.
- The earnings of older teachers declined, while those of younger teachers barely increased between 2010 and 2015.

Explanatory statistical modelling

- Statistical models revealed a strong tendency for women to earn less than men, having taken other factors into account.
- They also reveal that younger teachers (aged 21 to 29) had significantly lower wages than men and teachers aged 41 to 49. There was a statistically significant tendency for the earnings of 51 to 59 year olds to be higher.
- The models reveal no significant tendency for disabled teachers to earn less or more than average.
- When other factors were controlled for, the separate influence of ethnicity upon earnings was weak, but for all minority ethnic groups the effect was to reduce earnings relative to White British teachers. The size of this negative effect was greatest for Black-African and Pakistani teachers.
- Secondary school teachers tended to earn more, while working in an academy has a statistically significant negative effect on earnings.
- Working in London and the London Fringe also tended to increase earnings, once other factors were controlled for.

Trends in earnings for teachers employed throughout the period

- In contrast to the average for all teachers in work in a given year, those teachers who stayed in employment throughout the period 2010 to 2015 saw their earnings

increase by around 10 per cent between 2010 and 2015. Gender, ethnic group and disability differentials increased among these teachers, but age differentials narrowed.

- One reason for this is that the teaching profession lost older, more highly paid teachers and gained younger teachers over this period. Pay increases experienced by lower paid younger teachers were relatively greater.

1 Introduction

This report analyses data from the Department for Education's (DfE) annual School Workforce Census (SWC) for 2010 to 2015. The analysis is based on the individual-level data from the SWC linked across all five years using the individual identifier for each teacher. The report provides new information not available from other reports published by the DfE on the SWC. Most of the analysis is based on all teachers in work aged 21 to 69 recorded in the SWC in the year reported, but trends in earnings for those teachers traced in all six Censuses are also presented (in section 4.1).

The report demonstrates how employment by protected characteristics has changed over this period and contrasts earnings over this period by protected characteristic – age, gender, disability and ethnicity. The average earning figures presented in the report are based on all teachers employed in each year, and are thus influenced by the changing population of teachers. To provide a contrasting perspective on individual experience, the report also presents median earnings for teachers who have remained in employment throughout this period.

Please note:

- (1) The data set provided by the Department for Education for 2010 to 2015 does not include information on disability (because of their concerns over data quality). Therefore, no data on disability for 2015 is included in this report and the disability figures presented are taken from the linked SWC data for 2010 to 2014.
- (2) The employment figures presented in this report are counts of total numbers of teachers in the School Workforce Census linked data set for 2010 to 2015. The totals reported here are higher in each year of the Census than those obtained from the previous version of this data set (for 2010 to 2015).
- (3) The data set provided by the DfE for analysis in this Report differs from the data set dataset used in the Phase 1 baseline survey¹ and the Phase 1 update Report² in the following ways:
 - a. Most importantly, the actual amount paid to each teacher was not reported. Instead, gross (i.e. actual) and full-time equivalent pay was presented in banded form.
 - b. The data set did not contain information on hours worked. However, it did contain an indicator of full-time/part-time working and the proportion of full-time hours worked.
 - c. Following discussion with DfE statisticians, actual base and gross pay was provided, but not for heads and deputy heads or others with very high levels of pay. This action was taken to protect the confidentiality of individual teachers.
- (4) These changes in the School Workforce Census have some effect on the comparability of the earnings data presented in the reports for 2010 to 2014 and for 2010 to 2015. Most importantly, the earnings data presented in the latter is an estimate, created by multiplying gross pay by the proportion of full-time hours worked by the teacher.

¹ March 2016

² August 2016

2 The Demographic breakdown of teachers by protected characteristics, 2010-2015

This section of the report sets the context for the analysis of pay differentials by presenting the changing breakdown of the teacher workforce in England by protected characteristics (age, gender, ethnicity and disability) for the period 2010 to 2015.

Table 1: Demographic characteristics of teachers, 2010-2015

	2010	2011	2012	2013	2014	2015	Change 2010-15
Female	356869	353522	362616	366949	373958	375407	18538
Male	122022	118933	121121	121418	122710	122637	615
Disabled*	2393	2324	2396	2322	2305		-88
Aged 21-29	102620	100990	105910	108692	113784	116047	11454
Aged 30-39	145207	146674	152341	155158	158769	160511	14078
Aged 40-49	111501	113281	118423	121869	125379	126276	14689
Aged 50-59	105361	97550	92645	87978	84307	81231	-19078
Aged 60-69	14438	14436	14893	14927	14720	14192	475
All ages	479127	472931	484212	488624	496959	498257	21618
White ethnic groups	429609	422630	432087	432534	437900	433069	3460
White British	407516	400821	409641	408607	412994	407599	83
White Irish	6688	6972	7449	7771	8087	7969	1281
Any Other White Background	15405	14837	14997	16156	16819	17501	2096
Black and Minority Ethnic groups	29264	29097	30764	32389	34281	35597	6333
<i>Mixed parentage</i>	3729	3972	4333	4784	5146	5400	1671
White and Black Caribbean	844	925	1049	1145	1283	1396	552
White and Black African	424	456	483	505	515	534	110
White and Asian	1037	1117	1193	1294	1385	1431	394
Any Other Mixed Background	1424	1474	1608	1840	1963	2039	615
<i>South Asian ethnic groups</i>	13740	13827	14829	15606	16612	17519	3779
Indian	6773	6877	7310	7560	7957	8229	1456
Pakistani	3564	3546	3819	3968	4267	4527	963
Bangladeshi	1394	1424	1547	1755	1898	2058	664
Any Other Asian Background	2009	1980	2153	2323	2490	2705	696
<i>Black ethnic groups</i>	8647	8308	8572	8905	9282	9543	896
Black African	3182	3013	3073	3196	3394	3461	279
Black Caribbean	4421	4308	4465	4493	4639	4767	346
Any Other Black Background	1044	987	1034	1216	1249	1315	271
<i>Chinese and other ethnic groups</i>	3148	2990	3030	3094	3241	3135	-13
Chinese	684	685	701	699	724	719	35
Arab	0	0	0	0	0	1	1
Any Other Ethnic Group	2464	2305	2329	2395	2517	2415	-49

*Data from 2010-2014 linked Census. Data for 2010-2015 not available.

Table 2: Profile of teachers, 2010-2015

	Percentage of all teachers						% change 2010-15
	2010	2011	2012	2013	2014	2015	
Female	74.5	74.8	74.9	75.1	75.2	75.3	5.2
Male	25.5	25.1	25.0	24.8	24.7	24.6	0.5
Disabled*	0.5	0.5	0.5	0.5	0.5		-3.7
Aged 21-29	21.4	21.4	21.9	22.2	22.9	23.3	13.1
Aged 30-39	30.3	31.0	31.5	31.8	31.9	32.2	10.5
Aged 40-49	23.3	24.0	24.5	24.9	25.2	25.3	13.3
Aged 50-59	22.0	20.6	19.1	18.0	17.0	16.3	-22.9
Aged 60-69	3.0	3.1	3.1	3.1	3.0	2.8	-1.7
All ages	100.0	100.0	100.0	100.0	100.0	100.0	4.0
White ethnic groups	89.7	89.4	89.2	88.5	88.1	86.9	0.8
White British	85.1	84.8	84.6	83.6	83.1	81.8	0.0
White Irish	1.4	1.5	1.5	1.6	1.6	1.6	19.2
Any Other White Background	3.2	3.1	3.1	3.3	3.4	3.5	13.6
Black and minority ethnic groups	6.1	6.2	6.4	6.6	6.9	7.1	21.6
<i>Mixed parentage</i>	0.8	0.8	0.9	1.0	1.0	1.1	44.8
White and Black Caribbean	0.2	0.2	0.2	0.2	0.3	0.3	65.4
White and Black African	0.1	0.1	0.1	0.1	0.1	0.1	25.9
White and Asian	0.2	0.2	0.2	0.3	0.3	0.3	38.0
Any Other Mixed Background	0.3	0.3	0.3	0.4	0.4	0.4	43.2
<i>South Asian ethnic groups</i>	2.9	2.9	3.1	3.2	3.3	3.5	27.5
Indian	1.4	1.5	1.5	1.5	1.6	1.7	21.5
Pakistani	0.7	0.7	0.8	0.8	0.9	0.9	27.0
Bangladeshi	0.3	0.3	0.3	0.4	0.4	0.4	47.6
Any Other Asian Background	0.4	0.4	0.4	0.5	0.5	0.5	34.6
<i>Black ethnic groups</i>	1.8	1.8	1.8	1.8	1.9	1.9	10.4
Black African	0.7	0.6	0.6	0.7	0.7	0.7	8.8
Black Caribbean	0.9	0.9	0.9	0.9	0.9	1.0	7.8
Any Other Black Background	0.2	0.2	0.2	0.2	0.3	0.3	26.0
<i>Chinese and other ethnic groups</i>	0.7	0.6	0.6	0.6	0.7	0.6	-0.4
Chinese	0.1	0.1	0.1	0.1	0.1	0.1	5.1
Arab	0.0	0.0	0.0	0.0	0.0	0.0	-
Any Other Ethnic Group	0.5	0.5	0.5	0.5	0.5	0.5	-2.0

*Data from 2010-2014 linked Census. Data for 2010-2015 not available.

The total number of teachers (aged 21 to 69) of all types in England increased from 479.1 to 498.3 thousand between 2010 and 2015 (Table 1), an increase of 4 per cent. Within this overall total, there were marked differences by protected characteristic.

Gender: Women dominate the profession, accounting for 75.3 per cent of all teachers in 2015³. The number of female teachers only grew very slightly over the period 2010 to 2015, but the number of male teachers increased by 15.6 thousand (4.7 per cent).

Disability: Between 2.3 and 2.4 thousand teachers were recorded as being disabled in each year during the period 2010 to 2014, representing 0.5 per cent of all teachers. The number disabled declined by 3.7 per cent between 2010 and 2014.

Age: The number of teachers in each ten-year age group up to the age of 50 increased between 2010 and 2015, but the number of 50 to 59 year olds fell by 24.1 thousand (22.9 per cent) over this period. The fastest rate of increase was for 40 to 49 year olds (13.3 per cent).

Ethnicity: There were 35.6 thousand teachers from Black and Minority Ethnic (BME) groups in 2015 (7.1 percent of the total). The number of BME teachers increased by 6.3 thousand or 21.6 per cent between 2010 and 2015 (Table 2). South Asians formed 3.5 per cent of the total and Black teachers 1.9 per cent in 2015. The number of South Asian teachers grew by 27.5 per cent between 2010 and 2015. The largest individual BME groups in 2015 were Indian, followed by Black-Caribbean and Pakistani, though the total number from mixed parentage ethnic groups was larger (5.4 thousand). The fastest growing BME groups between 2010 and 2015 was the Bangladeshi ethnic group (47.6 per cent), followed by teachers of mixed parentage (44.8 per cent). White Irish teachers formed 1.6 per cent of the total (growing by 19.2 per cent between 2010 and 2015), while Other White (including white European) teachers formed 3.5 per cent of all teachers in 2015 (growing by 13.6 per cent between 2010 and 2015).

The number of teachers from individual BME groups is relatively small (Table 1), with the largest individual minority ethnic group (Indian) having only 8.2 thousand teachers in 2015. Therefore in the remainder of this report, the broad groupings (White, Mixed parentage, South Asian, Black and Chinese and Other) are used in many of the tables presented in the remainder of this report.

³Gender was not recorded or refused for 213 teachers in 2015. Ethnicity was not recorded for 29.5 thousand teachers and refused for 3.7 thousand teachers in 2015 (thus ethnicity is not recorded for 5.9 per cent of cases).

3 Type of employment

3.1 Phase and sector of education (Tables 3 to 17)

The number of teachers in primary and nursery education increased by 25.6 thousand (11.7 per cent) between 2010 and 2015, while the number of secondary teachers fell by 5 thousand (-2.2 per cent). The most notable feature is the shift of teachers from schools in local education authority control to academies. The number of teachers in the community sector contracted by 149.6 thousand (33.9 per cent) while the number of teachers in academies and free schools grew by 173.1 thousand (764.1 per cent).

Turning to gender, female teachers dominate employment in all phases and sectors (Table 3), but form seven-eighths of primary school teachers compared with under two-thirds of secondary teachers (Table 4). They formed nearly four-fifths of teachers in the local authority/community sector, but two-thirds of teachers in academies, free schools, etc. in 2015. The number of female teachers increased faster than male teachers in academies between 2010 and 2015 and fell more slowly than males in the local authority/community sector (Table 4). Therefore, the share of female teachers in the local authority/community sector increased between 2010 and 2015, as male employment contracted. On the other hand, female employment growth in academies outstripped male employment growth (Table 3), resulting in their share of academy employment also increasing (Table 4).

The share of disabled teachers in employment is highest for special schools, in which their employment increased between 2010 and 2014 (Table 5). They also experienced a relative shift from the local authority/community sector to academies and free schools (data on disabled teachers in 2015 was not made available by the DfE). Whilst the number of disabled teachers in academies has grown, the numerical increase has arisen because of the increase in academies, rather than an increase in the proportion of disabled teachers employed in academies. The percentage of disabled teachers in academies declined between 2010 and 2014.

The largest ten-year age group among teachers is those aged 30 to 39 in all sectors except special schools (Tables 9 and 10). The share of this age group increased between 2010 and 2015 as the share of teachers aged 50 or more fell. The number of teachers increased between 2010 and 2015 in each ten-year age group under 50, most rapidly for 40 to 49 year olds (Table 11). There was a small increase in the number of teachers aged 60 to 69. However, the number of 50-59 year olds fell by more than a fifth, most rapidly in the local authority/community sector. The decline in 50-59 year olds was faster in the secondary than the primary sector and employment in the academy/free school sector also grew most slowly for this age group. The share of 21-29 year olds and 50-59 year olds in the academy/free school sector declined over this period though growth in the numbers employed was greatest for 30-39 years olds (just exceeding the increase in 40-49 year olds employed).

All broad ethnic groups gained employment between 2010 and 2015, with the largest increase for BME groups (3.8 thousand) being for South Asians (Table 14). All ethnic groups lost employment between 2010 and 2015 in the local authority/community sector, while the number of teachers from white and Chinese and Other ethnic groups also declined in the secondary phase (Tables 14 and 17). The share of white teachers in employment declined in all phases of education, but increased in the academy/free school sector (Tables 15 and 16). The rate of increase in employment in academies and free schools was also highest for white teachers. The South Asian share of employment increased in all phases of education and in local authority/community schools between 2010 and 2015, but fell in academies and free schools. The rate of employment increase was fastest for teachers of mixed parentage, for whom the rate of increase was faster in special schools and primary and nursery schools than in secondary schools. The rate of increase in employment in academies and free

schools was slowest for Black teachers, whose share of employment also declined in this sector (Tables 15 and 16).

Table 3: Gender breakdown of teachers by phase and sector of education in 2010 and 2015 (numbers)

Phase / sector	Female			Male		
	2010	2015	Change	2010	2015	Change
<i>Phase</i>						
Primary and nursery	190723	209973	19250	27984	34375	6391
Secondary	142185	142594	409	86091	80683	-5408
Special	12253	14486	2233	4212	4962	750
<i>Sector</i>						
Local Authority/Community	331287	232480	-98807	109532	58938	-50594
Academy/free etc.	13874	134573	120699	8755	61082	52327
Total	345161	367053	21892	118287	120020	1733

Table 4: Gender breakdown of teachers by phase and sector of education in 2010 and 2015 (percentages) and percentage change 2010-15

Phase / sector	Female			Male		
	2010	2015	% Change	2010	2015	% Change
<i>Phase</i>						
Primary and nursery	87.2	85.9	10.1	12.8	87.2	22.8
Secondary	62.2	63.8	0.3	37.7	62.2	-6.3
Special	74.4	74.5	14	25.6	74.4	17.8
<i>Sector</i>						
Local Authority/Community	75.1	79.8	-26.9	24.8	75.1	-46.2
Academy/free etc.	61.2	68.7	786.6	38.6	61.2	597.7
Total	74.4	75.3	5.8	25.5	74.4	1.47

Table 5: Disabled teachers by phase and sector of education in 2010 and 2014*

Phase / sector	Number			Percentage		
	2010	2014	Change	2010	2014	% Change
<i>Phase</i>						
Primary and nursery	984	934	-50	0.4	0.4	-5.1
Secondary	1035	1051	16	0.5	0.5	1.5
Special	118	156	38	0.7	0.8	32.2
<i>Sector</i>						
Local Authority/Community	2020	1417	-603	0.5	0.5	-29.9
Academy/free etc.	117	724	607	0.5	0.4	518.8
Total	2137	2141	4	0.5	0.4	0.2

*Data from 2010-2014 linked Census. Data for 2010-2015 not available.

Table 6: Age of teachers by phase and sector of education in 2010 (numbers)

Age group	Phase			Sector		All
	Primary and nursery	Secondary	Special	Local Authority/Community	Academy /free etc.	
Aged 21-29	48728	51220	1803	95439	6312	101751
Aged 30-39	66987	71665	3888	135337	7203	142540
Aged 40-49	51785	51226	4227	102557	4681	107238
Aged 50-59	45447	47908	5755	95191	3919	99110
Aged 60-69	5853	6391	799	12495	548	13043
All ages	218800	228410	16472	441019	22663	463682

Table 7: Age of teachers by phase and sector of education in 2015 (numbers)

Age group	Phase			Sector		All
	Primary and nursery	Secondary	Special	Local Authority/Community	Academy /free etc.	
Aged 21-29	63474	48950	2992	67886	47530	115416
Aged 30-39	75836	77082	5515	92586	65847	158433
Aged 40-49	61955	55825	5210	75438	47552	122990
Aged 50-59	36918	35773	4681	47591	29781	77372
Aged 60-69	6211	5811	1052	7948	5126	13074
All ages	244394	223441	19450	291449	195836	487285

Table 8: Age of teachers by phase and sector of education: change 2010-2015

Age group	Phase			Sector		All
	Primary and nursery	Secondary	Special	Local Authority/Community	Academy /free etc.	
Aged 21-29	14746	-2270	1189	-27553	41218	13665
Aged 30-39	8849	5417	1627	-42751	58644	15893
Aged 40-49	10170	4599	983	-27119	42871	15752
Aged 50-59	-8529	-12135	-1074	-47600	25862	-21738
Aged 60-69	358	-580	253	-4547	4578	31
All ages	25594	-4969	2978	-149570	173173	23603

Table 9: Age of teachers by phase and sector of education in 2010 (percentages)

Age group	Phase			Sector		All
	Primary and nursery	Secondary	Special	Local Authority/Community	Academy /free etc.	
Aged 21-29	22.3	22.4	10.9	21.6	27.9	21.9
Aged 30-39	30.6	31.4	23.6	30.7	31.8	30.7
Aged 40-49	23.7	22.4	25.7	23.3	20.7	23.1
Aged 50-59	20.8	21.0	34.9	21.6	17.3	21.4
Aged 60-69	2.7	2.8	4.9	2.8	2.4	2.8
All ages	100.0	100.0	100.0	100.0	100.0	100.0

Table 10: Age of teachers by phase and sector of education in 2015 (percentages)

Age group	Phase			Sector		All
	Primary and nursery	Secondary	Special	Local Authority/Community	Academy /free etc.	
Aged 21-29	26.0	21.9	15.4	23.3	24.3	23.7
Aged 30-39	31.0	34.5	28.4	31.8	33.6	32.5
Aged 40-49	25.4	25.0	26.8	25.9	24.3	25.2
Aged 50-59	15.1	16.0	24.1	16.3	15.2	15.9
Aged 60-69	2.5	2.6	5.4	2.7	2.6	2.7
All ages	100.0	100.0	100.0	100.0	100.0	100.0

Table 11: Age of teachers by phase and sector of education: percentage change 2010-2015

Age group	Phase			Sector		All
	Primary and nursery	Secondary	Special	Local Authority/Community	Academy /free etc.	
Aged 21-29	30.3	-4.4	65.9	-28.9	653.0	13.4
Aged 30-39	13.2	7.6	41.8	-31.6	814.2	11.1
Aged 40-49	19.6	9.0	23.3	-26.4	915.9	14.7
Aged 50-59	-18.8	-25.3	-18.7	-50.0	659.9	-21.9
Aged 60-69	6.1	-9.1	31.7	-36.4	835.4	0.2
All ages	11.7	-2.2	18.1	-33.9	764.1	5.1

Table 12: Ethnic group of teachers by phase and sector of education in 2010 (numbers)

Ethnic group	Phase			Sector		All
	Primary and nursery	Secondary	Special	Local Authority/Community	Academy /free etc.	
White	201096	200959	15291	398335	19011	417346
Mixed	1583	1929	107	3341	278	3619
South Asian	5514	7719	185	12504	914	13418
Black	2685	5516	209	7424	986	8410
Chinese & Other	1042	1930	68	2760	280	3040

Table 13: Ethnic group of teachers by phase and sector of education in 2014 (numbers)

Ethnic group	Phase			Sector		All
	Primary and nursery	Secondary	Special	Local Authority/Community	Academy /free etc.	
White	217496	189229	17344	256811	167258	424069
Mixed	2455	2619	191	3082	2183	5265
South Asian	7540	9410	314	10245	7019	17264
Black	3307	5620	372	5181	4118	9299
Chinese & Other	1095	1845	106	1581	1465	3046

Table 14: Ethnic group of teachers by phase and sector of education: change 2010-2014

Ethnic group	Phase			Sector		All
	Primary and nursery	Secondary	Special	Local Authority/Community	Academy /free etc.	
White	16400	-11730	2053	-141524	148247	6723
Mixed	872	690	84	-259	1905	1646
South Asian	2026	1691	129	-2259	6105	3846
Black	622	104	163	-2243	3132	889
Chinese & Other	53	-85	38	-1179	1185	6

Table 15: Ethnic group of teachers by phase and sector of education in 2010 (percentages)

Ethnic group	Phase			Sector		All
	Primary and nursery	Secondary	Special	Local Authority/Community	Academy /free etc.	
White	91.9	88.0	92.8	90.3	83.9	90.0
Mixed	0.7	0.8	0.6	0.8	1.2	0.8
South Asian	2.5	3.4	1.1	2.8	4.0	2.9
Black	1.2	2.4	1.3	1.7	4.4	1.8
Chinese & Other	0.5	0.8	0.4	0.6	1.2	0.7

Table 16: Ethnic group of teachers by phase and sector of education in 2015 (percentages)

Ethnic group	Phase			Sector		All
	Primary and nursery	Secondary	Special	Local Authority/Community	Academy /free etc.	
White	89.0	84.7	89.2	88.1	85.4	87.0
Mixed	1.0	1.2	1.0	1.1	1.1	1.1
South Asian	3.1	4.2	1.6	3.5	3.6	3.5
Black	1.4	2.5	1.9	1.8	2.1	1.9
Chinese & Other	0.4	0.8	0.5	0.5	0.7	0.6

Table 17: Change in ethnic group breakdown of teachers by phase and sector of education between 2010 and 2015 (percentage changes)

Ethnic group	Phase			Sector		All
	Primary and nursery	Secondary	Special	Local Authority/Community	Academy /free etc.	
White	8.2	-5.8	13.4	-35.5	779.8	1.6
Mixed	55.1	35.8	78.5	-7.8	685.3	45.5
South Asian	36.7	21.9	69.7	-18.1	667.9	28.7
Black	23.2	1.9	78.0	-30.2	317.6	10.6
Chinese & Other	5.1	-4.4	55.9	-42.7	423.2	0.2
All teachers	11.7	-2.2	18.1	-33.9	764.1	5.1

3.2 Employment by job grade, 2010-2014

A common feature of employment by job grade across all sections of the teacher workforce is the contraction of employment in the Advanced Teacher/Excellent Teacher/Lead Practitioner category between 2010 and 2015 (these three grades are combined because the AST and ET programmes ceased after 2013). Employment in this category fell by 1.4 thousand, mostly for females, which declined by 25.1 per cent (Table 18), compared to 15.4 per cent for males (Table 19). Employment grew fastest for deputy and assistant heads, with the rate of increase much faster for females than males. The number of head teachers declined by 3 per cent for males but increased by 1.7 per cent for females. The number of female classroom teachers increased by 4.2 per cent, compared with 0.1 per cent for males. However, the percentage of staff in senior roles was higher for men than women in both 2010 and 2015, though the male share of senior employment fell slightly over this period.

For disabled teachers, the number of head teachers increased by 8.7 per cent between 2010 and 2014, while the number of classroom teachers fell by 3.5 per cent (Table 20). The number of assistant and deputy heads fell by 0.6 per cent, and the share of the disabled among deputy and assistant heads fell slightly. Data on disability is not available for 2015.

Turning to age group, the number of classroom teachers in employment increased most quickly for 21-29 year olds, while the number of classroom teachers aged 50-59 declined by nearly a quarter between 2010 and 2015 (Table 24). The rate of increase in the number of heads and deputy heads was fastest for 21-29 year olds, followed by 40-49 year olds, while the number of heads and deputy heads aged 50-59 declined by a fifth. The percentage share of this age group among senior staff was about 10 per cent lower in 2015 than 2010 (Tables 25 and 26). The percentage of 50-59 year olds holding senior jobs was higher than for any age group in 2010 and increased from 21.7 to 22.7 per cent (Tables 27 and 28), indicating that job loss in this age group was mainly experienced by staff in more junior positions.

White teachers were the only ethnic group to lose employment in head teacher posts between 2010 and 2015 (Table 31). Growth in Black and Minority Ethnic groups did not offset this decline, with the total number of heads falling by 217 (1 per cent). The number of new heads was greatest for Black ethnic groups, an increase of a third over the period (Table 32). There was rapid increase in the number of deputy and assistant heads in all BME groups, with the highest rate of increase being 87 per cent for people of mixed parentage, followed by the 68 per cent increase in the South Asian ethnic groups. The decrease in the number of teachers in the Advanced Teacher/Excellent Teacher/Lead Practitioner category largely affected the white ethnic group. The rate of increase in classroom teachers was most rapid for people of mixed parentage and the South Asian ethnic groups. White teachers accounted for the great majority of employment in each grade of employment (Tables 33 and 34) and the share of senior posts in total employment was highest for the white ethnic group in both 2010 (Table 35) and 2014 (Table 36).

Table 18: Female employment by job grade, 2010-15

	2010	% of females	% job level	2015	% of females	% job level	Change	% change
Head, exec head	14026	3.9	65.2	14269	3.8	66.2	243	1.7
Deputy, Assistant head	25826	7.2	65.7	32021	8.5	68.8	6195	24.0
AST, ET, Lead Practitioner	4549	1.3	74.4	3405	0.9	71.9	-1144	-25.1
Classroom Teacher	312468	87.6	75.8	325712	86.8	76.6	13244	4.2
Females	356869	100.0	74.5	375407	100.0	75.3	18538	5.2

Table 19: Male employment by job grade, 2010-15

	2010	% of males	% job level	2015	% of males	% job level	Change	% change
Head, exec head	7492	6.1	34.8	7268	5.9	33.7	-224	-3.0
Deputy, Assistant head	13455	11.0	34.2	14485	11.8	31.1	1030	7.7
AST, ET, Lead Practitioner	1567	1.3	25.6	1326	1.1	28.0	-241	-15.4
Classroom Teacher	99508	81.5	24.1	99558	81.2	23.4	50	0.1
Males	122022	100.0	25.5	122637	100.0	24.6	615	0.5

Table 20: Disabled employment by job grade, 2010-14*

	2010	% of disabled	% job level	2014	% of disabled	% job level	Change	% change
Head, exec head	104	4.3	0.5	113	4.9	0.5	9	8.7
Deputy, Assistant head	154	6.4	0.4	153	6.6	0.3	-1	-0.6
AST, ET, Lead Practitioner	62	2.6	1.0	39	1.7	0.9	-23	-37.1
Classroom Teacher	2073	86.6	0.5	2000	86.8	0.5	-73	-3.5
Disabled	2393	100.0	0.5	2305	100.0	0.5	-88	-3.7

*Data from 2010-2014 linked Census. Data for 2010-2015 not available.

Table 21: Employment by age group and job grade, 2010

	Head, exec head	Deputy, Assistant head	AST, ET, Lead Practitioner	Classroom Teacher	Total
21-29	19	972	378	101251	102620
30-39	2423	12595	1954	128235	145207
40-49	7230	12497	1601	90173	111501
50-59	10683	12177	1871	80630	105361
60-69	1166	1051	313	11908	14438
Total	21521	39292	6117	412197	479127

Table 22: Employment by age group and job grade, 2015

	Head, exec head	Deputy, Assistant head	AST, ET, Lead Practitioner	Classroom Teacher	Total
21-29	32	1548	459	114008	116047
30-39	2555	16610	1440	139906	160511
40-49	8950	17349	1379	98598	126276
50-59	8578	9861	1151	61641	81231
60-69	1427	1144	306	11315	14192
Total	21542	46512	4735	425468	498257

Table 23: Change in employment by age group and job grade, 2010-2015

	Head, exec head	Deputy, Assistant head	AST, ET, Lead Practitioner	Classroom Teacher	Total
21-29	13	576	81	12757	13427
30-39	132	4015	-514	11671	15304
40-49	1720	4852	-222	8425	14775
50-59	-2105	-2316	-720	-18989	-24130
60-69	261	93	-7	-593	-246
Total	21	7220	-1382	13271	19130

Table 24: Percentage change in employment by age group and job grade, 2010-2015

	Head, exec head	Deputy, Assistant head	AST, ET, Lead Practitioner	Classroom Teacher	Total
21-29	68.4	59.3	21.4	12.6	13.1
30-39	5.4	31.9	-26.3	9.1	10.5
40-49	23.8	38.8	-13.9	9.3	13.3
50-59	-19.7	-19.0	-38.5	-23.6	-22.9
60-69	22.4	8.8	-2.2	-5.0	-1.7
Total	0.1	18.4	-22.6	3.2	4.0

Table 25: Percentage of age group in each job grade, 2010

	Head, exec head	Deputy, Assistant head	AST, ET, Lead Practitioner	Classroom Teacher	Total
21-29	0.1	2.5	6.2	24.6	21.4
30-39	11.3	32.1	31.9	31.1	30.3
40-49	33.6	31.8	26.2	21.9	23.3
50-59	49.6	31.0	30.6	19.6	22.0
60-69	5.4	2.7	5.1	2.9	3.0
Total	100.0	100.0	100.0	100.0	100.0

Table 26: Percentage of age group in each job grade, 2015

	Head, exec head	Deputy, Assistant head	AST, ET, Lead Practitioner	Classroom Teacher	Total
21-29	0.1	3.3	9.7	26.8	23.3
30-39	11.9	35.7	30.4	32.9	32.2
40-49	41.5	37.3	29.1	23.2	25.3
50-59	39.8	21.2	24.3	14.5	16.3
60-69	6.6	2.5	6.5	2.7	2.8
Total	100.0	100.0	100.0	100.0	100.0

Table 27: Percentage of job grade in each age group, 2010

	Head, exec head	Deputy, Assistant head	AST, ET, Lead Practitioner	Classroom Teacher	Total
21-29	0.0	0.9	0.4	98.7	100.0
30-39	1.7	8.7	1.3	88.3	100.0
40-49	6.5	11.2	1.4	80.9	100.0
50-59	10.1	11.6	1.8	76.5	100.0
60-69	8.1	7.3	2.2	82.5	100.0
Total	4.5	8.2	1.3	86.0	100.0

Table 28: Percentage of job grade in each age group, 2015

	Head, exec head	Deputy, Assistant head	AST, ET, Lead Practitioner	Classroom Teacher	Total
21-29	0.0	1.3	0.4	98.2	100.0
30-39	1.6	10.3	0.9	87.2	100.0
40-49	7.1	13.7	1.1	78.1	100.0
50-59	10.6	12.1	1.4	75.9	100.0
60-69	10.1	8.1	2.2	79.7	100.0
Total	4.3	9.3	1.0	85.4	100.0

Table 29: Employment by ethnic group and job grade, 2010

	Head, exec head	Deputy, Assistant head	AST, ET, Lead Practitioner	Classroom Teacher	Total
White	20435	36549	5338	367287	429609
Mixed	103	200	47	3379	3729
South Asian	197	657	188	12698	13740
Black	168	498	109	7872	8647
Chinese & Other	30	132	49	2937	3148
Total	20933	38036	5731	394173	458873

Table 30: Employment by ethnic group and job grade, 2015

	Head, exec head	Deputy, Assistant head	AST, ET, Lead Practitioner	Classroom Teacher	Total
White	20079	42159	3956	366875	433069
Mixed	127	374	62	4837	5400
South Asian	246	1105	199	15969	17519
Black	225	674	102	8542	9543
Chinese & Other	39	191	59	2846	3135
Total	20716	44503	4378	399069	468666

Table 31: Change in employment by ethnic group and job grade, 2010-2015

	Head, exec head	Deputy, Assistant head	AST, ET, Lead Practitioner	Classroom Teacher	Total
White	-356	5610	-1382	-412	3460
Mixed	24	174	15	1458	1671
South Asian	49	448	11	3271	3779
Black	57	176	-7	670	896
Chinese & Other	9	59	10	-91	-13
Total	-217	6467	-1353	4896	9793

Table 32: Percentage change in employment by ethnic group and job grade, 2010-2015

	Head, exec head	Deputy, Assistant head	AST, ET, Lead Practitioner	Classroom Teacher	Total
White	-1.7	15.3	-25.9	-0.1	0.8
Mixed	23.3	87.0	31.9	43.1	44.8
South Asian	24.9	68.2	5.9	25.8	27.5
Black	33.9	35.3	-6.4	8.5	10.4
Chinese & Other	30.0	44.7	20.4	-3.1	-0.4
Total	-1.0	17.0	-23.6	1.2	2.1

Table 33: Percentage of ethnic group in each job grade, 2010

	Head, exec head	Deputy, Assistant head	AST, ET, Lead Practitioner	Classroom Teacher	Total
White	97.6	96.1	93.1	93.2	93.6
Mixed	0.5	0.5	0.8	0.9	0.8
South Asian	0.9	1.7	3.3	3.2	3.0
Black	0.8	1.3	1.9	2.0	1.9
Chinese & Other	0.1	0.3	0.9	0.7	0.7
Total	100.0	100.0	100.0	100.0	100.0

Table 34: Percentage of ethnic group in each job grade, 2015

	Head, exec head	Deputy, Assistant head	AST, ET, Lead Practitioner	Classroom Teacher	Total
White	96.9	94.7	90.4	91.9	92.4
Mixed	0.6	0.8	1.4	1.2	1.2
South Asian	1.2	2.5	4.5	4.0	3.7
Black	1.1	1.5	2.3	2.1	2.0
Chinese & Other	0.2	0.4	1.3	0.7	0.7
Total	100.0	100.0	100.0	100.0	100.0

Table 35: Percentage of job grade in each ethnic group, 2010

	Head, exec head	Deputy, Assistant head	AST, ET, Lead Practitioner	Classroom Teacher	Total
White	4.8	8.5	1.2	85.5	100.0
Mixed	2.8	5.4	1.3	90.6	100.0
South Asian	1.4	4.8	1.4	92.4	100.0
Black	1.9	5.8	1.3	91.0	100.0
Chinese & Other	1.0	4.2	1.6	93.3	100.0
Total	4.6	8.3	1.2	85.9	100.0

Table 36: Percentage of job grade in each ethnic group, 2015

	Head, exec head	Deputy, Assistant head	AST, ET, Lead Practitioner	Classroom Teacher	Total
White	4.6	9.7	0.9	84.7	100.0
Mixed	2.4	6.9	1.1	89.6	100.0
South Asian	1.4	6.3	1.1	91.2	100.0
Black	2.4	7.1	1.1	89.5	100.0
Chinese & Other	1.2	6.1	1.9	90.8	100.0
Total	4.4	9.5	0.9	85.1	100.0

3.3 Employment by pay range, 2010-2014

The analysis of employment change by pay range for 2010 to 2015 is complicated by the suppression by the DfE of pay range and earnings data for teachers with unusually high pay in the 2010-2015 linked data set.

Despite requests made to the DfE by researchers for a full data set of pay and earnings data, this was not provided by the Department. The unwillingness of a Government Department to provide details of the pay of public servants is a significant concern.

This suppression of data means that it is not possible to draw an exact comparison between the data analysis in the Phase 1 research report and this current report. Nevertheless, it is possible to identify trends in the lower pay ranges and to present cautious findings for the more senior pay ranges. The most notable feature of employment change by pay range between 2010 and 2015 is the fall of 1.3 thousand (28.5 per cent) in the number employed in the AST, Excellent Teacher and Lead Practitioners pay ranges (Table 43). The number of teachers on the Leadership range grew by 18.2 per cent. The number on other pay ranges increased more slowly, the fastest increase being for Unqualified Teachers (9.3 per cent).

Turning first to gender, the number on each pay range other than the Advanced Teacher/Excellent Teacher/Lead Practitioner range increased for both women and men. The fastest rates of increase for women (21.5 per cent for women and 11.7 per cent for men) were for the Leadership range (Tables 37 and 38), with rates of increase in the other pay ranges being highest for Unqualified Teachers. Men were more likely than women to be on both the Unqualified and Leadership pay ranges in both 2010 and 2015.

Disabled teachers were most likely to be on the Upper pay range in both 2010 and 2014 (Table 39), but the number on this pay range declined by 10.3 per cent. On the other hand, the percentage on the Unqualified pay range increased by nearly a third over this period. Data on disability is not available for 2015.

Numbers employed on the Unqualified Teacher scale increased by more than a quarter in both the 21-29 and 60-69 year old age groups (Table 43). The number of teachers on the Main pay scale fell in all age groups above the age of 40, fastest for 50-59 year olds. The latter was the only age group in which the number on the Upper and Leadership pay scales fell between 2010 and 2015 (by 22.9 and 16.3 per cent respectively). The number of 21-29 year olds on the Leadership scale increased by 64.3 per cent. The percentage of teachers on the Upper and Leadership pay ranges increased with increasing age up to the age of 60 in both 2010 and 2015 (Tables 44 and 45). However, the percentage of teachers on the Leadership scale aged 40-49 exceeded the percentage for 50-59 year olds in 2015, and the latter was the only age group in which the percentage of teachers in higher pay ranges fell between 2010 and 2015.

Turning to ethnic group, employment grew between 2010 and 2015 for each ethnic group in each pay range except the Advanced Teacher/Excellent Teacher/Lead Practitioner range, in which the number of White and Chinese and Other teachers fell by (31.3 per cent and 19.4 per cent respectively). The highest rates of increase were experienced by teachers of mixed parentage in each pay range, with the fastest rate of growth in the Leadership range and the slowest in the Unqualified Teacher range (Table 51). Rates of increase for South Asian teachers were slightly slower in the Upper and Leadership ranges. The share of Black and Minority Ethnic groups in each pay range increased between 2010 and 2015 (Tables 52 and 53). South Asian ethnic groups displayed a higher share of employment in each pay range than Black ethnic groups in both 2010 and 2015 and the shares of both ethnic groups increased over this period. The share of total employment in each of these broad ethnic groups declined with increasing seniority, while that of the White group increased. The

percentage employed on the most senior pay scales from White ethnic groups only fell slightly over this period.

Table 37: Female employment by pay range, 2010-2015

	2010	% of females	% pay range	2015	% of females	% pay range	Change	% change
Unqualified Teacher	8666	2.7	68.4	9535	2.8	68.8	869	10.0
Main	137679	43.7	77.4	147246	43.0	77.4	9567	6.9
Upper	127854	40.5	76.3	137692	40.2	77.0	9838	7.7
AST, ET, Lead Practitioner	3370	1.1	73.2	2302	0.7	69.9	-1068	-31.7
Leadership	37790	12.0	66.3	45923	13.4	68.1	8133	21.5
Total	315359	100.0	75.1	342698	100.0	75.5	27339	8.7

Table 38: Male employment by pay range, 2010-2015

	2010	% of males	% pay range	2015	% of males	% pay range	Change	% change
Unqualified Teacher	4009	3.8	31.6	4322	3.9	31.2	313	7.8
Main	40298	38.6	22.6	43053	38.8	22.6	2755	6.8
Upper	39696	38.0	23.7	41219	37.1	23.0	1523	3.8
AST, ET, Lead Practitioner	1236	1.2	26.8	993	0.9	30.1	-243	-19.7
Leadership	19215	18.4	33.7	21463	19.3	31.8	2248	11.7
Total	104454	100.0	24.9	111050	100.0	24.5	6596	6.3

Table 39: Disabled employment by pay range, 2010-2014*

	2010	% of disabled	% pay range	2014	% of disabled	% pay range	Change	% change
Unqualified Teacher	108	4.6	0.6	142	6.2	0.7	34	31.5
Main	691	29.5	0.4	760	33.0	0.4	69	10.0
Upper	1221	52.1	0.6	1095	47.6	0.5	-126	-10.3
AST, ET, Lead Practitioner	34	1.5	0.7	19	0.8	0.6	-15	-44.1
Leadership	289	12.3	0.4	285	12.4	0.4	-4	-1.4
Total	2343	100.0	0.5	2301	100.0	0.5	-42	-1.8

*Data from 2010-2014 linked Census. Data for 2010-2015 not available.

Table 40: Employment by age group and pay range, 2010

	Unqualified Teacher	Main	Upper	AST, ET, Lead Practitioner	Leadership	Total
21-29	4123	79030	4701	355	1223	89432
30-39	2831	50927	57660	1698	14250	127366
40-49	3309	29020	46364	1187	18280	98160
50-59	2021	16300	51825	1203	21200	92549
60-69	392	2712	7002	163	2055	12324
Total	12676	177989	167552	4606	57008	419831

Table 41: Employment by age group and pay range, 2015

	Unqualified Teacher	Main	Upper	AST, ET, Lead Practitioner	Leadership	Total
21-29	5251	91921	5333	314	2010	104829
30-39	2998	54613	67731	1245	19641	146228
40-49	2910	27772	58474	941	25523	115620
50-59	2207	13704	39960	663	17747	74281
60-69	494	2296	7417	132	2477	12816
Total	13860	190306	178915	3295	67398	453774

Table 42: Change in employment by age group and pay range, 2010-2015

	Unqualified Teacher	Main	Upper	AST, ET, Lead Practitioner	Leadership	Total
21-29	1128	12891	632	-41	787	15397
30-39	167	3686	10071	-453	5391	18862
40-49	-399	-1248	12110	-246	7243	17460
50-59	186	-2596	-11865	-540	-3453	-18268
60-69	102	-416	415	-31	422	492
Total	1184	12317	11363	-1311	10390	33943

Table 43: Percentage change in employment by age group and pay range, 2010-2015

	Unqualified Teacher	Main	Upper	AST, ET, Lead Practitioner	Leadership	Total
21-29	27.4	16.3	13.4	-11.5	64.3	17.2
30-39	5.9	7.2	17.5	-26.7	37.8	14.8
40-49	-12.1	-4.3	26.1	-20.7	39.6	17.8
50-59	9.2	-15.9	-22.9	-44.9	-16.3	-19.7
60-69	26.0	-15.3	5.9	-19.0	20.5	4.0
Total	9.3	6.9	6.8	-28.5	18.2	8.1

Table 44: Percentage of each age group in each pay range, 2010

	Unqualified Teacher	Main	Upper	AST, ET, Lead Practitioner	Leadership	Total
21-29	32.5	44.4	2.8	7.7	2.1	21.3
30-39	22.3	28.6	34.4	36.9	25.0	30.3
40-49	26.1	16.3	27.7	25.8	32.1	23.4
50-59	15.9	9.2	30.9	26.1	37.2	22.0
60-69	3.1	1.5	4.2	3.5	3.6	2.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 45: Percentage of each age group in each pay range, 2015

	Unqualified Teacher	Main	Upper	AST, ET, Lead Practitioner	Leadership	Total
21-29	37.9	48.3	3.0	9.5	3.0	23.1
30-39	21.6	28.7	37.9	37.8	29.1	32.2
40-49	21.0	14.6	32.7	28.6	37.9	25.5
50-59	15.9	7.2	22.3	20.1	26.3	16.4
60-69	3.6	1.2	4.1	4.0	3.7	2.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 46: Percentage of pay range in each age group, 2010

	Unqualified Teacher	Main	Upper	AST, ET, Lead Practitioner	Leadership	Total
21-29	4.6	88.4	5.3	0.4	1.4	100.0
30-39	2.2	40.0	45.3	1.3	11.2	100.0
40-49	3.4	29.6	47.2	1.2	18.6	100.0
50-59	2.2	17.6	56.0	1.3	22.9	100.0
60-69	3.2	22.0	56.8	1.3	16.7	100.0
Total	3.0	42.4	39.9	1.1	13.6	100.0

Table 47: Percentage of pay range in each age group, 2015

	Unqualified Teacher	Main	Upper	AST, ET, Lead Practitioner	Leadership	Total
21-29	5.0	87.7	5.1	0.3	1.9	100.0
30-39	2.1	37.3	46.3	0.9	13.4	100.0
40-49	2.5	24.0	50.6	0.8	22.1	100.0
50-59	3.0	18.4	53.8	0.9	23.9	100.0
60-69	3.9	17.9	57.9	1.0	19.3	100.0
Total	3.1	41.9	39.4	0.7	14.9	100.0

Table 48: Employment by ethnic group and pay range, 2010

	Unqualified Teacher	Main	Upper	AST, ET, Lead Practitioner	Leadership	Total
White	10613	158049	153868	4156	53554	380240
Mixed	165	1799	929	39	288	3220
South Asian	517	6570	3438	120	783	11428
Black	385	3692	2505	74	647	7303
Chinese & Other	241	1426	886	31	178	2762
Total	11921	171536	161626	4420	55450	404953

Table 49: Employment by ethnic group and pay range, 2015

	Unqualified Teacher	Main	Upper	AST, ET, Lead Practitioner	Leadership	Total
White	11267	162816	160141	2855	61506	398585
Mixed	237	2670	1388	51	521	4867
South Asian	601	7923	5116	123	1401	15164
Black	531	3797	3060	79	940	8407
Chinese & Other	227	1360	948	25	244	2804
Total	12863	178566	170653	3133	64612	429827

Table 50: Change in employment by ethnic group and pay range, 2010-2015

	Unqualified Teacher	Main	Upper	AST, ET, Lead Practitioner	Leadership	Total
White	654	4767	6273	-1301	7952	18345
Mixed	72	871	459	12	233	1647
South Asian	84	1353	1678	3	618	3736
Black	146	105	555	5	293	1104
Chinese & Other	-14	-66	62	-6	66	42
Total	942	7030	9027	-1287	9162	24874

Table 51: Percentage change in employment by ethnic group and pay range, 2010-2015

	Unqualified Teacher	Main	Upper	AST, ET, Lead Practitioner	Leadership	Total
White	6.2	3.0	4.1	-31.3	14.8	4.8
Mixed	43.6	48.4	49.4	30.8	80.9	51.1
South Asian	16.2	20.6	48.8	2.5	78.9	32.7
Black	37.9	2.8	22.2	6.8	45.3	15.1
Chinese & Other	-5.8	-4.6	7.0	-19.4	37.1	1.5
Total	7.9	4.1	5.6	-29.1	16.5	6.1

Table 52: Percentage of ethnic group in each pay range, 2010

	Unqualified Teacher	Main	Upper	AST, ET, Lead Practitioner	Leadership	Total
White	89.0	92.1	95.2	94.0	96.6	93.9
Mixed	1.4	1.0	0.6	0.9	0.5	0.8
South Asian	4.3	3.8	2.1	2.7	1.4	2.8
Black	3.2	2.2	1.5	1.7	1.2	1.8
Chinese & Other	2.0	0.8	0.5	0.7	0.3	0.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 53: Percentage of ethnic group in each pay range, 2015

	Unqualified Teacher	Main	Upper	AST, ET, Lead Practitioner	Leadership	Total
White	87.6	91.2	93.8	91.1	95.2	92.7
Mixed	1.8	1.5	0.8	1.6	0.8	1.1
South Asian	4.7	4.4	3.0	3.9	2.2	3.5
Black	4.1	2.1	1.8	2.5	1.5	2.0
Chinese & Other	1.8	0.8	0.6	0.8	0.4	0.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 54: Percentage of pay range in each ethnic group, 2010

	Unqualified Teacher	Main	Upper	AST, ET, Lead Practitioner	Leadership	Total
White	2.8	41.6	40.5	1.1	14.1	100.0
Mixed	5.1	55.9	28.9	1.2	8.9	100.0
South Asian	4.5	57.5	30.1	1.1	6.9	100.0
Black	5.3	50.6	34.3	1.0	8.9	100.0
Chinese & Other	8.7	51.6	32.1	1.1	6.4	100.0
Total	2.9	42.4	39.9	1.1	13.7	100.0

Table 55: Percentage of pay range in each ethnic group, 2015

	Unqualified Teacher	Main	Upper	AST, ET, Lead Practitioner	Leadership	Total
White	2.8	40.8	40.2	0.7	15.4	100.0
Mixed	4.9	54.9	28.5	1.0	10.7	100.0
South Asian	4.0	52.2	33.7	0.8	9.2	100.0
Black	6.3	45.2	36.4	0.9	11.2	100.0
Chinese & Other	8.1	48.5	33.8	0.9	8.7	100.0
Total	3.0	41.5	39.7	0.7	15.0	100.0

4 Earnings trends, 2010-2015

This section presents analysis of changes in average earnings for teachers with protected characteristics compared with all teachers. The analysis presents averages for all teachers present in the SWC in a given year. In the 2010-2015 linked data set, the DfE have provided Full-time equivalent gross annual pay for all except Head teachers and others the Department has defined as having unusual pay. It is not unreasonable to draw the conclusion that, under these circumstances, 'unusual' is defined by the DfE as 'unusually high'. Actual salary is calculated by multiplying full-time equivalent annual salary by the proportion of full-time hours worked. Actual salary is preferred to full-time equivalent salary, because the latter is a hypothetical quantity and obscures earnings differences resulting from a greater likelihood of working less than full-time experienced by groups with protected characteristics. Tables 56 to 58 present median actual earnings by gender, age group and ethnic group for each year from 2010 to 2015. Earnings grew slowly from 2010 to 2013, experienced a peak in 2014 and fell back again in 2015 for most groups. Female and male earnings were both highest in 2014, but the fall 2014-15 was greater for males than females. Earnings for disabled people were more variable, but were higher in 2014 than 2010 (Table 56).

Median earnings were higher in 2015 than 2010 for all age groups (Table 57), except 21-29 year olds. The reason for this pattern is that the number of teachers aged under 30 were growing and wage progression with age within this age group was masked by the entry of new teachers on the lowest salaries. In the older age groups, employment was falling (possibly involving some of the highest paid teachers). Turning to ethnicity, median earnings for White British teachers declined between 2010 and 2015, with a temporary increase in 2014, again reflecting the influence of the influx of younger and lower paid teachers and the loss of older, more highly paid teachers. Earnings growth was also stagnant and variable in the relatively youthful mixed parentage ethnic groups. Median earnings for South Asian and Chinese ethnic groups also stagnated and were lower in 2015 than 2014. However, the median earnings of teachers from the Black African and Black Caribbean ethnic groups grew between 2010 and 2015. The earnings of White Irish teachers declined gradually, while those from White Other ethnic groups grew between 2010 and 2014.

Percentage changes for the entire period and year-on-year changes between 2010 and 2015 are presented in Tables 59 to 61. Over the whole period, female earnings grew faster than male, earnings increased fastest for 44-49 year olds, but declined for those aged over 60 and aged 21 to 29. These tables show that year-on-year rates of earnings change varied between plus and minus 1 per cent for most sections of the teacher workforce, with greatest volatility between 2013 and 2015. There was greater year-on-year variation in earnings growth in the youngest and oldest age groups than in those in the 30 to 59 age range. Median earnings fell overall for White British, White Irish and Chinese teachers but there were years in which earnings increased. Percentage increases between 2010 and 2015 were highest for the Black ethnic groups.

Differentials within this rather volatile pattern can be presented more clearly by expressing median earnings for each sub-group relative to the median for all teachers (Tables 62 to 64). The differential for females narrowed between 2010 and 2015. However, the male differential became wider throughout this period. Disabled people earned more than average and this differential was wider in 2014 than in 2010. Relative earnings for 31-39 year olds, 41-49 year olds and 51-59 year olds increased between 2010 and 2015, while the relative position of younger teachers remained stable and that of older teachers deteriorated. The positive differential for White British teachers declined slowly over this period, while the relative earnings of White Irish teachers varied around the average throughout the period. The relative earnings of South Asians increased over the period, but relative Black African

and Black Caribbean teacher earnings increasingly more quickly. Median earnings of Chinese teachers remained below average, but their relative position improved slightly.

Table 65 focuses on earnings differentials for women relative to men. Overall, women earned about seven-eighths of male earnings, but this negative differential narrowed slightly between 2010 and 2015. The differential was closest for young women, with 21-29 year olds earning about the same as men in each year from 2011 to 2015. The differential was widest for 40-49 year olds, but earnings for teachers aged 60 or more were about equal for men and women. The gender differential was narrower for White Irish than White British women. In the Black ethnic groups, there was little difference by gender. The largest gender differentials were in the Indian, Pakistani and Bangladeshi ethnic groups, but the earnings of women relative to men deteriorated markedly over the period 2010 to 2015 in the Chinese ethnic group.

Table 56: Median earnings, 2010-2015 by gender and disability

	Median earnings (£)					
	2010	2011	2012	2013	2014	2015
Female	31552	31552	31552	31868	32187	32025
Male	36756	36756	36716	36751	37119	36959
Disabled*	34181	34294	34181	34523	34204	-
Persons	33981	33974	32733	32914	33287	32831

*Data from 2010-2014 linked Census. Data for 2010-2015 not available.

Table 57: Median earnings, 2010-2015 by age group

Age group	Median earnings (£)					
	2010	2011	2012	2013	2014	2015
21-29	27000	27000	26658	26422	27104	26106
30-39	34181	34181	34181	34523	34869	35218
40-49	36096	36574	36387	36756	37124	37349
50-59	36789	36756	36756	37124	37496	37871
60-69	29405	29552	29403	30269	29672	27895
Persons	33981	33974	32733	32914	33287	32831

Table 58: Median earnings, 2010-2015 by ethnic group

Ethnic group	Median earnings (£)					
	2010	2011	2012	2013	2014	2015
White British	34049	34030	32785	32914	33356	32831
White Irish	34181	33752	32559	32264	33042	33170
Any Other White Background	32644	33553	33301	33649	33500	32716
<i>Black and Minority Ethnic Groups</i>	<i>33865</i>	<i>34181</i>	<i>34087</i>	<i>34007</i>	<i>34546</i>	<i>33743</i>
White and Black Caribbean	31759	31552	31446	30404	31431	30992
White and Black African	33459	32630	32155	32424	33243	33177
White and Asian	30681	31324	31365	31446	31963	32187
Any Other Mixed Background	32348	32630	32420	31868	32624	32400
Indian	33036	33865	33811	33636	34096	33620
Pakistani	30738	31552	31546	31868	32079	30992
Bangladeshi	31433	31499	31466	31682	31963	31446
Any Other Asian Background	32839	34181	33865	32957	34180	32831
Black African	35116	35447	35447	35801	36160	36182
Black Caribbean	36400	36716	36569	37115	37432	37187
Any Other Black Background	35447	35688	35777	35802	36756	36523
Chinese	31552	30902	31217	31283	31868	30992
Any Other Ethnic Group	34181	34181	34181	34522	34869	34374
Persons	33981	33974	32733	32914	33287	32831

Table 59: Percentage change in median earnings for 2010-15 and individual years by gender and disability

	Percentage change between Censuses					
	2010-15	2010-11	2011-12	2012-13	2013-14	2014-15
Female	1.5	0.0	0.0	1.0	1.0	-0.5
Male	0.6	0.0	-0.1	0.1	1.0	-0.4
Disabled*	-	0.5	-6.5	-0.1	1.0	-
Persons	-3.4	0.0	-3.6	0.5	1.1	-1.4

*Data from 2010-2014 linked Census. Data for 2010-2015 not available.

Table 60: Percentage change in median earnings for 2010-15 and individual years by age group

Age group	Percentage change between Censuses					
	2010-15	2010-11	2011-12	2012-13	2013-14	2014-15
21-29	-3.3	0.0	-1.2	-0.8	2.5	-3.7
30-39	3.0	0.0	0.0	1.0	1.0	1.0
40-49	3.5	1.3	-0.5	1.0	1.0	0.6
50-59	2.9	-0.1	0.0	1.0	1.0	1.0
60-69	-5.2	0.5	-0.5	2.9	-2.0	-6.0
Persons	-3.4	0.0	-3.6	0.5	1.1	-1.4

Table 61: Percentage change in median earnings for 2010-15 and individual years by individual ethnic group

Ethnic group	Percentage change between Censuses					
	2010-15	2010-11	2011-12	2012-13	2013-14	2014-15
White British	-3.6	-0.1	-3.6	0.3	1.4	-1.7
White Irish	-2.9	-0.9	-3.8	-0.9	2.4	0.4
Any Other White Background	0.5	2.7	-0.5	1.3	-0.7	-2.2
<i>Black and Minority Ethnic Groups</i>	-0.4	0.9	-0.3	-0.2	1.6	-2.3
White and Black Caribbean	-2.5	-0.7	-0.3	-3.3	3.4	-1.4
White and Black African	-0.8	-2.5	-1.3	0.7	2.5	-0.2
White and Asian	4.9	2.2	0.1	0.4	1.4	0.7
Any Other Mixed Background	0.2	0.9	-0.6	-1.7	2.4	-0.7
Indian	1.3	2.4	-0.3	-0.6	1.4	-1.5
Pakistani	0.4	2.2	0.0	1.0	0.7	-3.4
Bangladeshi	0.1	0.2	-0.1	0.8	1.0	-1.7
Any Other Asian Background	-1.0	3.0	-0.9	-2.7	3.8	-4.0
Black African	3.0	0.9	0.1	0.9	1.0	0.1
Black Caribbean	2.2	0.8	-0.2	1.4	0.8	-0.6
Any Other Black Background	3.0	0.7	0.2	0.1	2.7	-0.6
Chinese	-1.8	-2.1	1.0	0.4	1.9	-3.0
Any Other Ethnic Group	1.0	0.0	0.0	1.0	1.0	-1.0
Persons	-3.4	0.0	-3.6	0.5	1.1	-1.4

Table 62: Relative median earnings, 2010-2015 by gender and disability (all teachers=100)

	Median earnings relative to those for all teachers (=100)					
	2010	2011	2012	2013	2014	2015
Female	92.8	92.9	96.3	96.8	96.7	97.5
Male	108.1	108.2	112.1	111.7	111.5	112.6
Disabled*	108.1	108.2	112.2	112.8	108.6	-

*Data from 2010-2014 linked Census. Data for 2010-2015 not available.

Table 63: Relative median earnings, 2010-2015 by age group (all teachers=100)

Age group	Median earnings relative to those for all teachers (=100)					
	2010	2011	2012	2013	2014	2015
21-29	79.4	79.5	81.4	80.4	81.4	79.5
30-39	100.5	100.6	104.3	104.9	104.8	107.3
40-49	106.2	107.6	111.1	111.7	111.5	113.8
50-59	108.2	108.2	112.2	112.8	112.6	115.4
60-69	86.5	87.0	89.8	92.0	89.1	84.9

Table 64: Relative median earnings, 2010-2015 by ethnic group (all teachers=100)

Ethnic group	Median earnings relative to those for all teachers (=100)					
	2010	2011	2012	2013	2014	2015
White British	100.2	100.2	100.2	100.0	100.3	100.0
White Irish	100.5	99.7	99.5	98.1	99.3	101.1
Any Other White Background	96.1	98.7	101.9	102.7	100.8	100.0
White and Black Caribbean	93.5	92.9	96.0	92.4	94.4	94.4
White and Black African	98.4	96.0	98.3	98.5	99.9	101.1
White and Asian	90.3	92.3	95.8	95.8	96.0	98.0
Any Other Mixed Background	95.2	96.0	99.0	96.8	98.0	98.7
Indian	97.6	100.0	103.4	102.3	102.6	102.4
Pakistani	90.8	92.9	96.3	96.8	96.4	94.4
Bangladeshi	92.5	92.7	96.1	96.4	96.2	95.9
Any Other Asian Background	97.6	100.6	103.4	100.1	102.7	100.0
Black African	103.3	104.3	108.3	108.8	108.6	110.2
Black Caribbean	107.1	108.0	111.8	112.8	112.5	113.4
Any Other Black Background	104.3	105.0	109.2	108.8	110.4	111.2
Chinese	92.8	90.9	95.3	95.2	96.0	94.4
Any Other Ethnic Group	100.5	100.6	104.3	104.9	104.8	105.2

Table 65: Relative earnings differentials for female teachers by disability, age group and ethnic group

	Female median earnings relative to male earnings (=100)					
	2010	2011	2012	2013	2014	2015
<i>Age group</i>						
21-29	100.0	100.0	101.8	101.8	100.0	101.0
30-39	92.2	92.5	92.8	92.4	91.9	89.8
40-49	86.8	85.7	87.0	87.9	87.8	87.0
50-59	90.3	90.9	93.3	93.5	93.9	93.9
60-69	100.0	100.0	101.8	101.8	100.0	101.0
Disabled*	91.4	93.0	92.3	92.0	90.2	-
<i>Ethnic group</i>						
White British	85.8	85.8	85.8	86.7	86.7	85.7
White Irish	90.4	88.1	89.0	90.4	89.9	91.2
Any Other White Background	86.8	87.7	87.9	88.7	89.2	89.0
White and Black Caribbean	93.2	92.3	93.6	94.7	95.9	95.0
White and Black African	90.6	89.7	89.9	93.9	92.9	91.4
White and Asian	86.0	88.4	87.5	89.0	86.7	86.7
Any Other Mixed Background	89.9	93.8	89.9	92.0	90.2	90.3
Indian	86.3	88.2	88.1	87.0	87.2	87.6
Pakistani	86.0	87.9	87.4	85.4	84.2	81.9
Bangladeshi	88.2	87.5	82.1	85.5	83.3	82.9
Any Other Asian Background	93.7	95.4	94.4	89.9	90.8	88.2
Black African	102.6	101.4	100.9	100.0	97.9	96.7
Black Caribbean	100.3	100.0	100.2	100.2	100.0	100.7
Any Other Black Background	100.0	97.4	99.5	97.1	98.9	95.7
Chinese	97.0	91.5	89.1	86.9	86.0	87.1
Any Other Ethnic Group	89.6	89.7	89.6	88.4	89.5	88.4
All females	85.8	85.8	85.9	86.7	86.7	86.6

*Data from 2010-2014 linked Census. Data for 2010-2015 not available.

Figure 1 and 2 depict median earnings for women and men by age group over the period 2010 to 2015. These diagrams demonstrate the greater variation in earnings by age group for men than for women and a divergence in earnings by age. Earnings for 21-29 year olds barely increased, while those for 60 to 69 year olds declined for both men and women. Figure 3 clearly shows that the narrowing of the wage gap during this period was a feature of older age groups, while the gap between male and female earnings widened for teachers aged 30 to 39.

Figure 4 shows that there was a narrowing in earnings differentials relative to the White British group for teachers from minority ethnic groups between 2010 and 2015.

Figures 5 to 8 provide more detail on earnings for the protected characteristics considered in this report by presenting the number of teachers in each £2500 salary range from £0 to £79,999 by gender (Figure 5), disability (Figure 6), age group (Figure 7) and broad ethnic group (Figure 8) in 2014. Two marked peaks appear, at £20-22.5 thousand and £35-37.5 thousand pounds (with a smaller peak at £27.5-29.99 thousand pounds). Female teachers dominate in lower pay ranges, but the largest share of male teachers is found for the larger peak and nearby pay bands. Men are more prominent in the mid to high pay bands. The distribution of pay for disabled teachers is similar to the average. Younger teachers are better represented in lower pay levels (with a strong peak in the £20-22.49 thousand pay band). A clear relationship demonstrated between increasing pay and increasing age. The most notable feature of the distribution of earnings by ethnic group is the greater representation of Black ethnic groups in the middle and upper levels of the pay distribution.

Figures 9 to 20 present change in the distribution of earnings between 2010 and 2015 by gender (Figure 9), disability (Figure 10), age group (Figures 11 to 15) and ethnic group (Figures 16 to 20). The patterns are quite complex, but increasing representation of younger groups at the lower end of the distribution is apparent. Earnings progression at the upper end of the distribution is apparent for 40 to 49 year olds, while the older age groups experience a reduction in number of teachers in the middle part of the earnings distribution, but increases in both the upper and lower ends.

Figure 1: Female median earnings by age group, 2010-2015

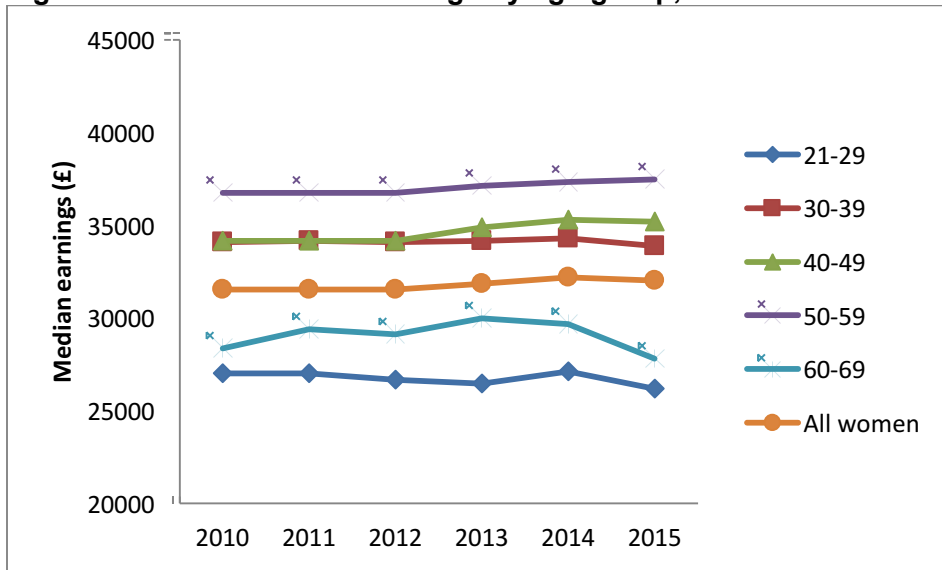


Figure 2: Male median earnings by age group, 2010-2015

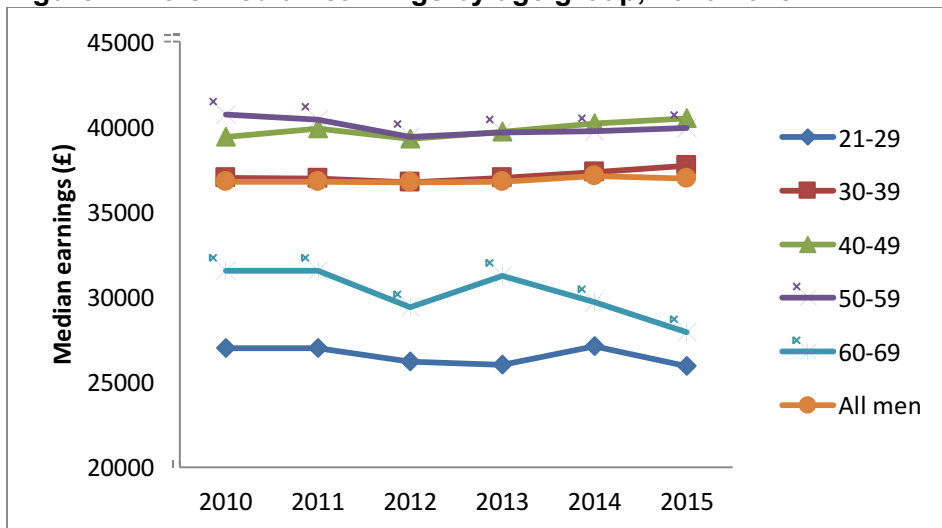


Figure 3: Female earnings relative to male by age group, 2010-2015

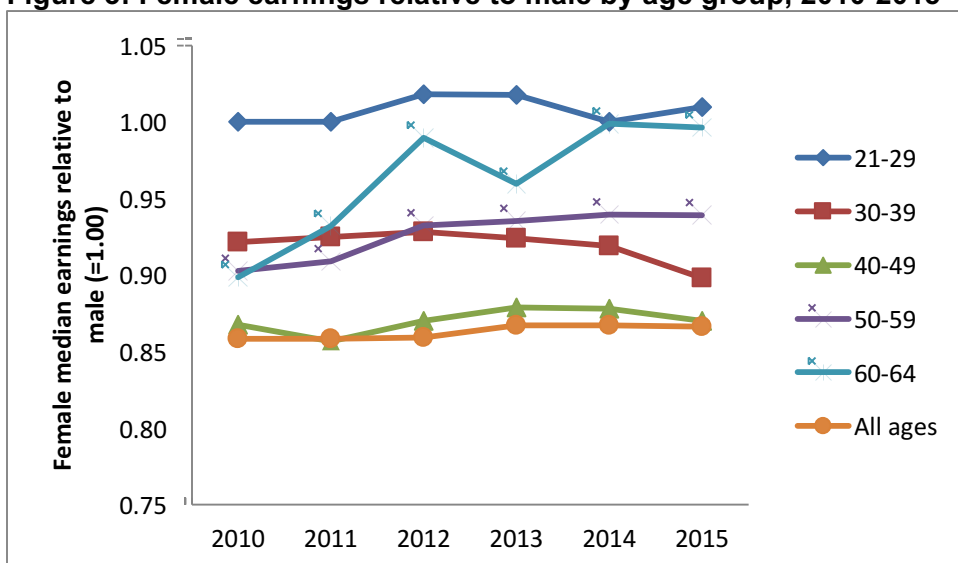


Figure 4: Earnings by ethnic group relative to White British teachers, 2010-2015

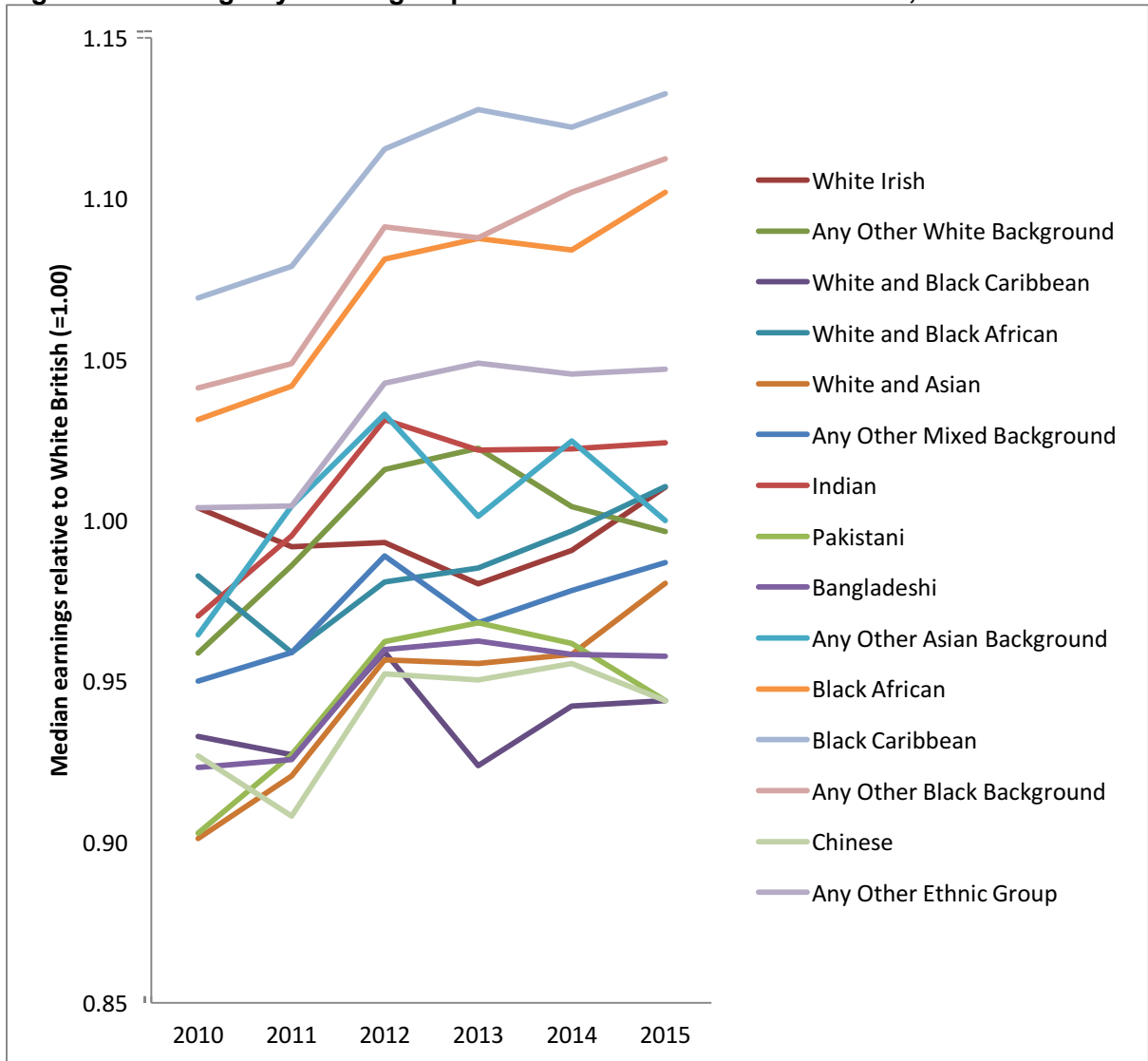


Figure 5: Earnings distribution by gender, 2015

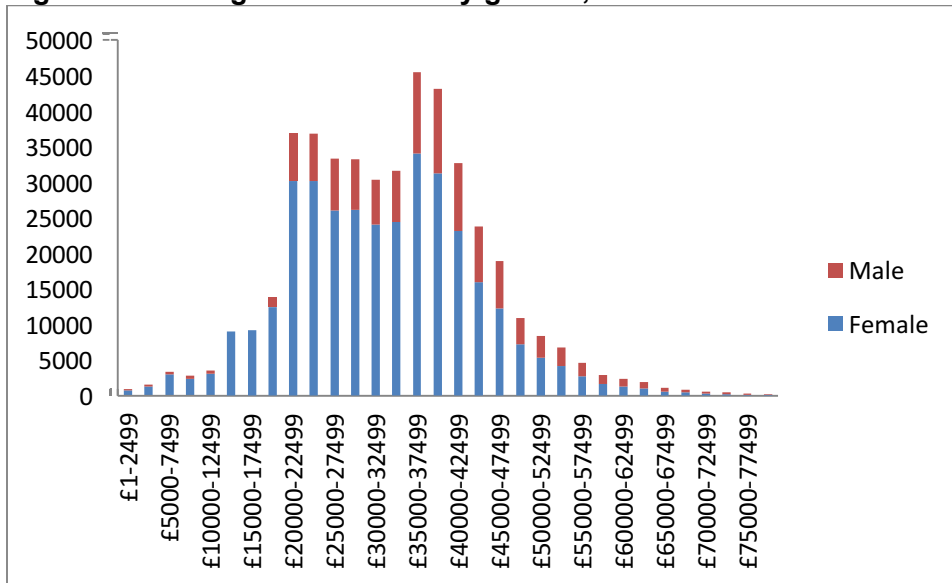
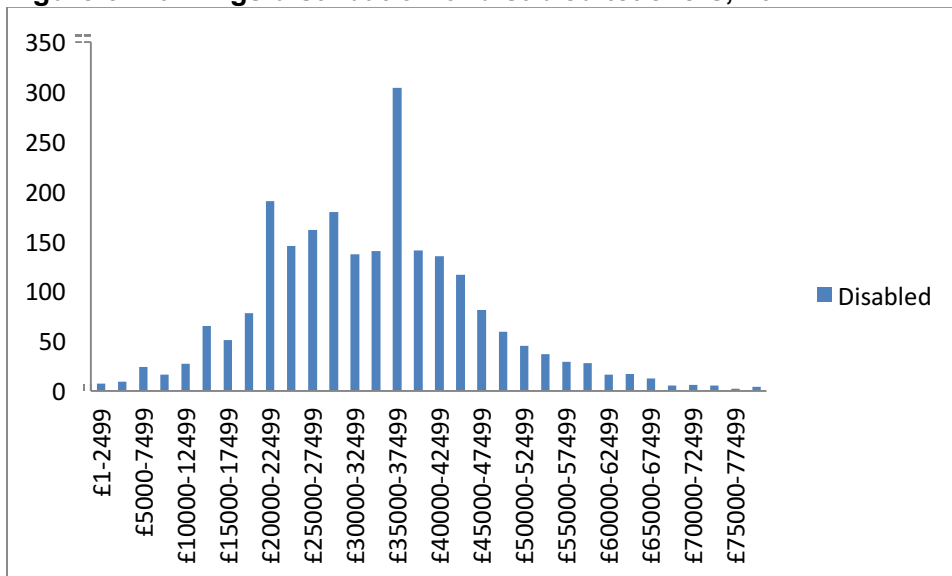


Figure 6: Earnings distribution of disabled teachers, 2014



Note: No data on earnings by disability for 2015.

Figure 7: Earnings distribution by age group, 2015

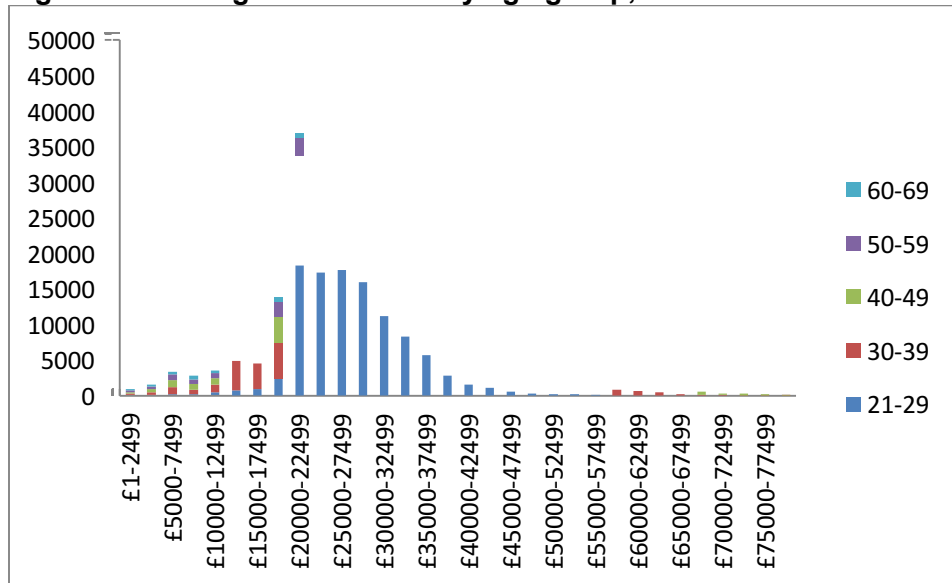


Figure 8: Earnings distribution of by broad ethnic group, 2015

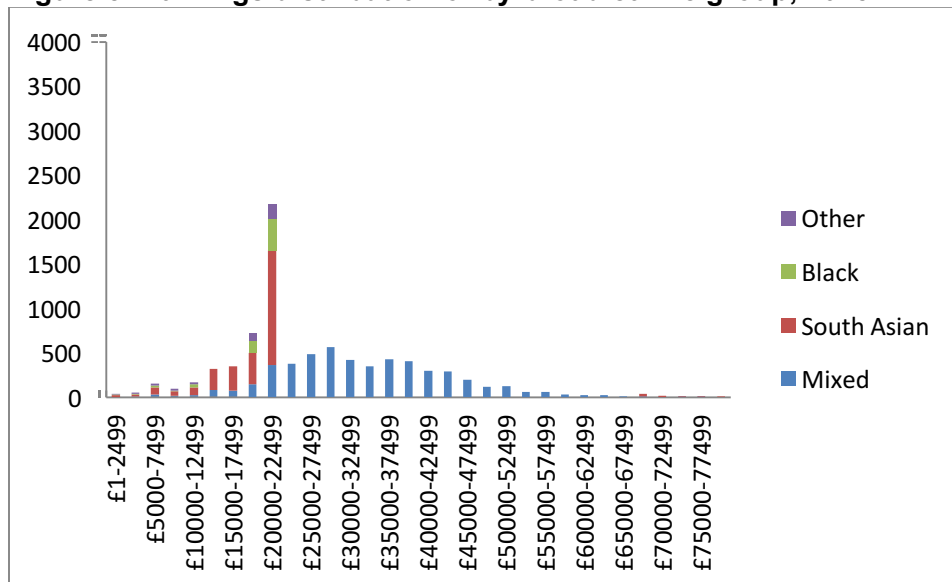


Figure 9: Change in distribution of earnings by gender, 2010-2015

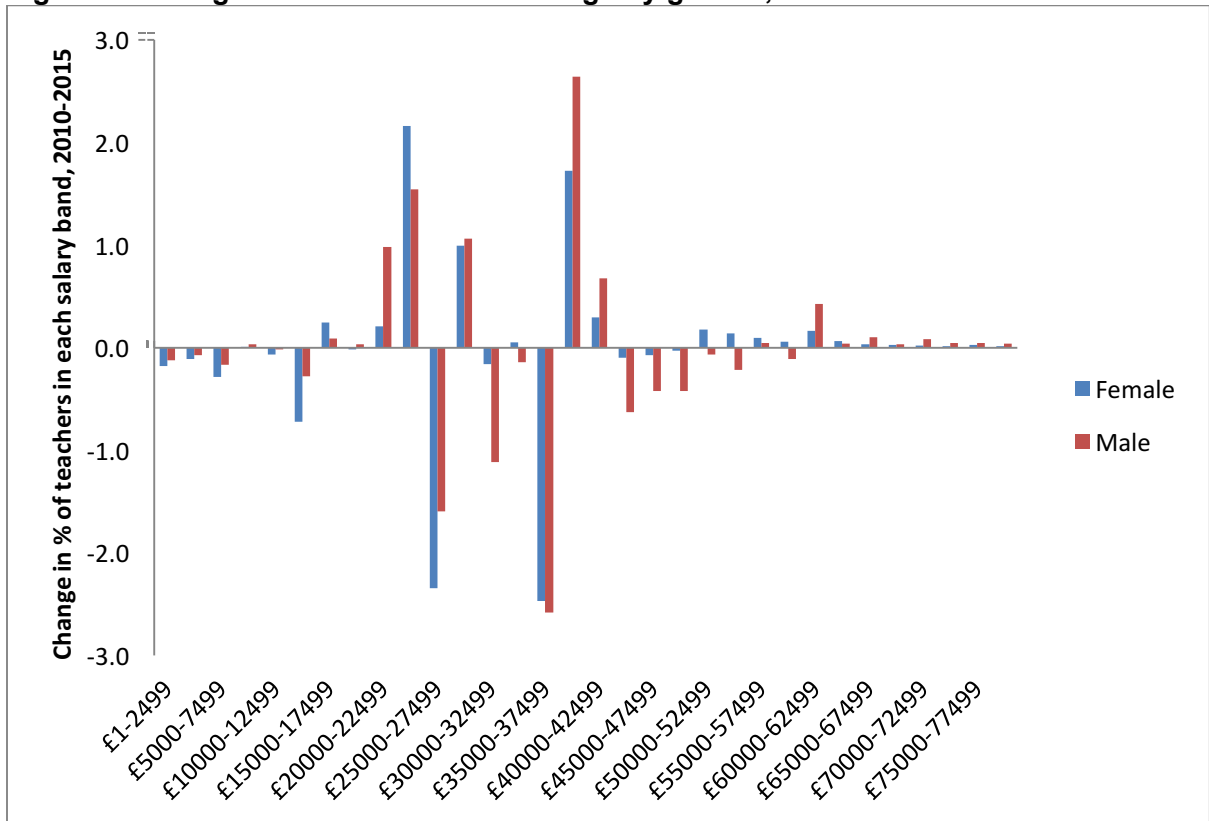
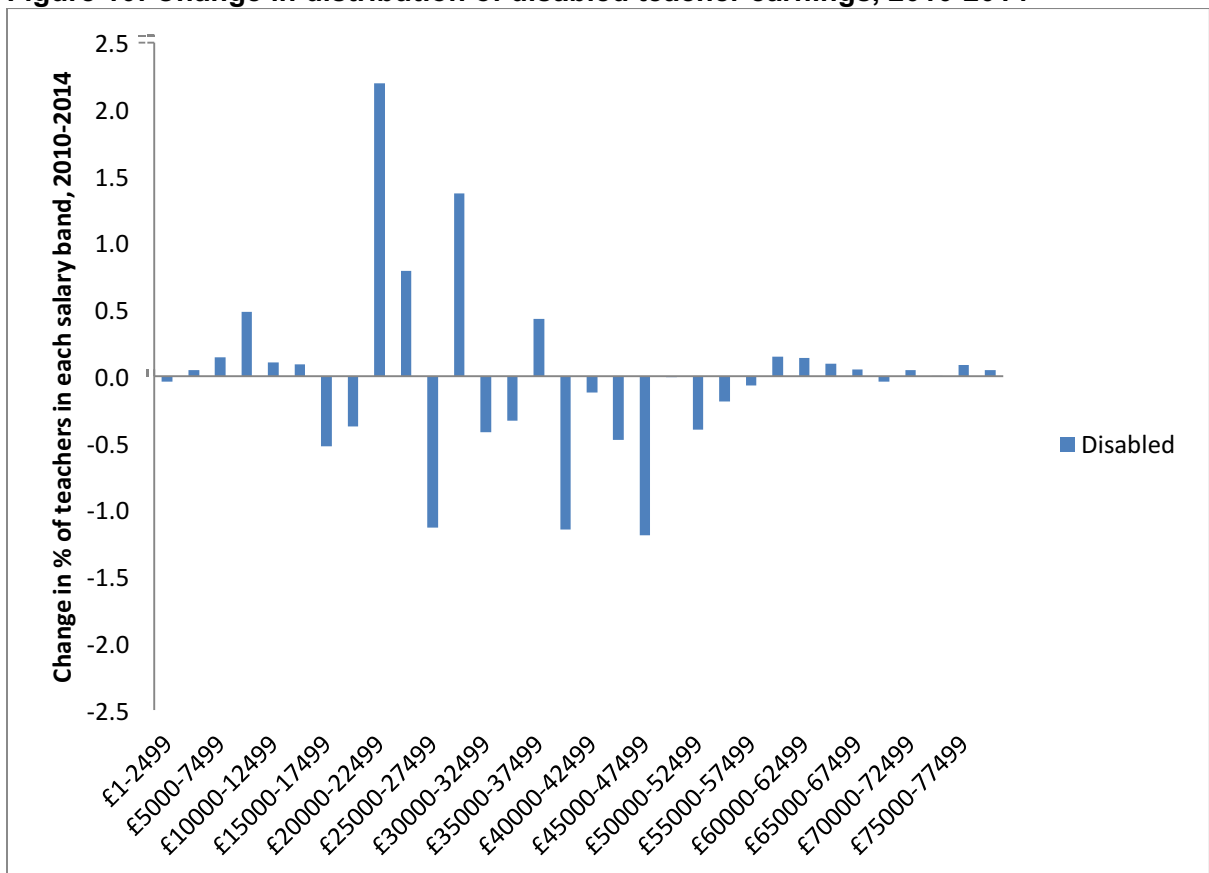


Figure 10: Change in distribution of disabled teacher earnings, 2010-2014



Note: No data on earnings by disability for 2015

Figure 11: Change in distribution of earnings: age group 21-29, 2010-2015

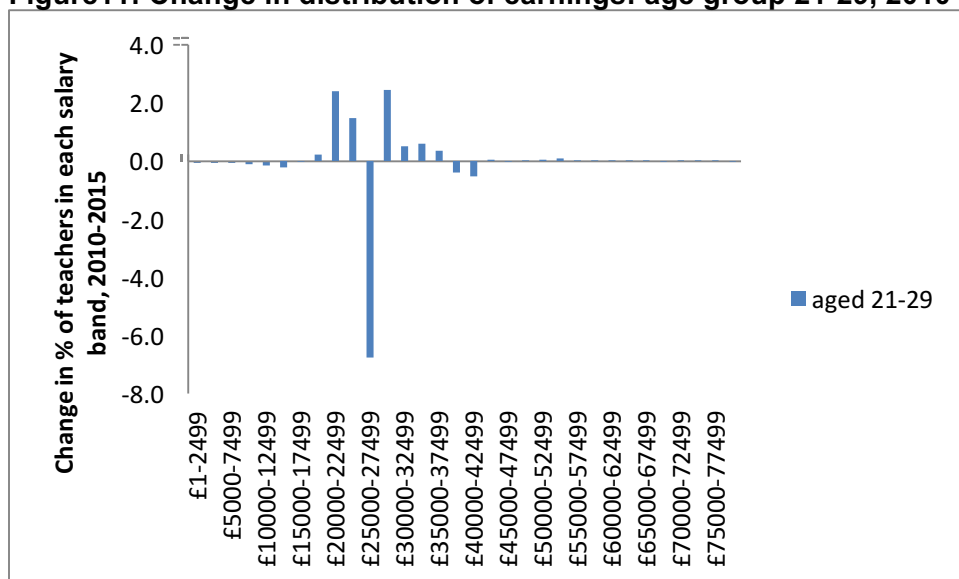


Figure 12: Change in distribution of earnings: age group 30-39, 2010-2015

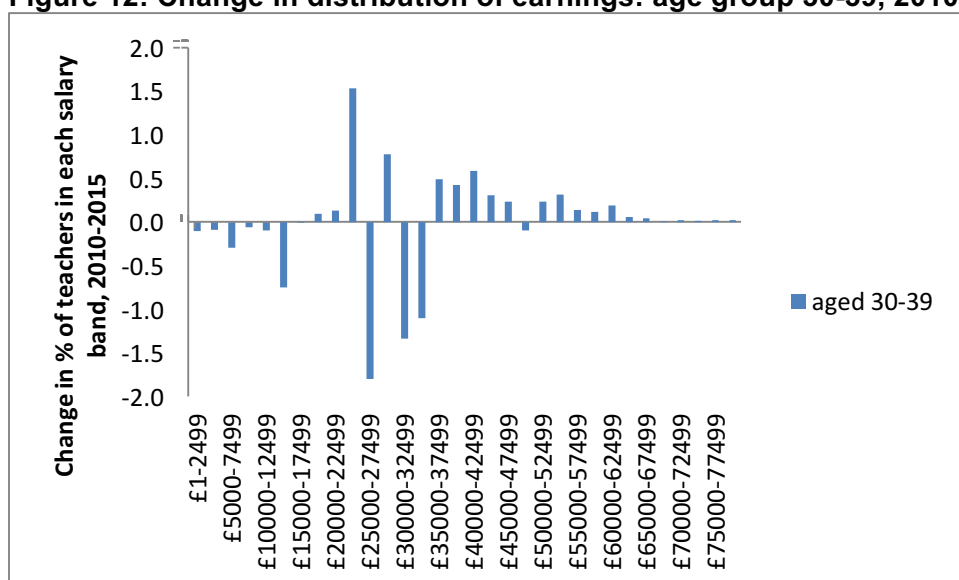


Figure 13: Change in distribution of age group 40-49 earnings, 2010-2015

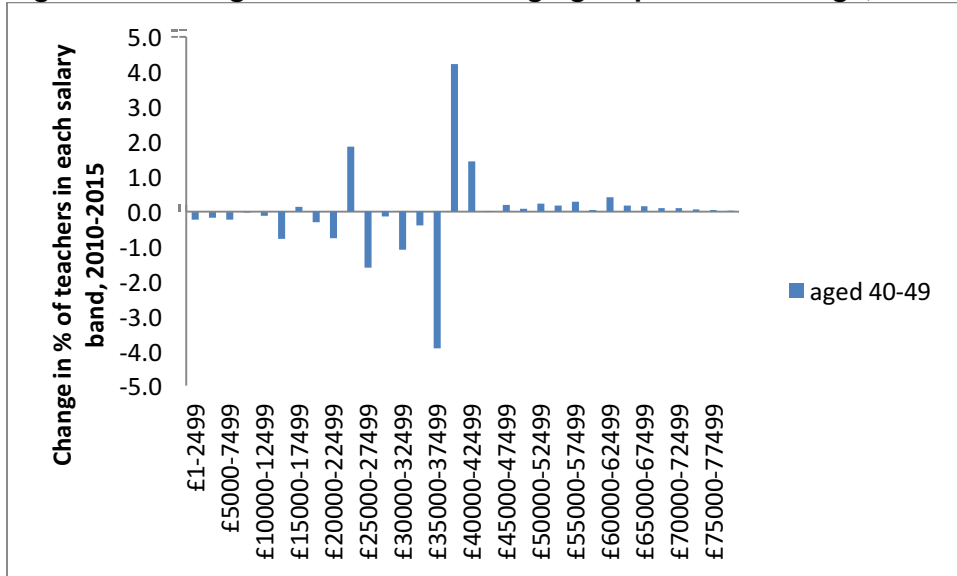


Figure 14: Change in distribution of age group 50-59 earnings, 2010-2015

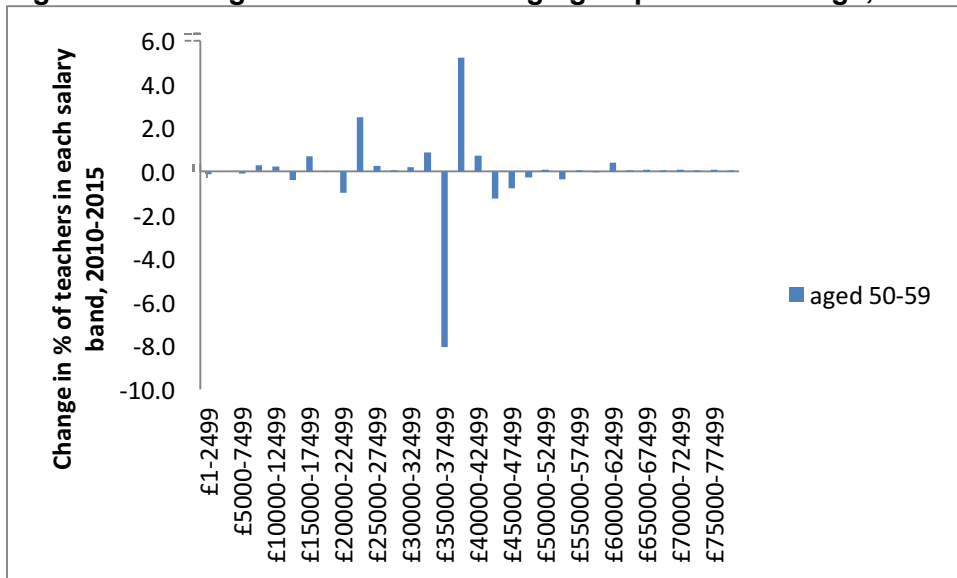


Figure 15: Change in distribution of age group 60-69 earnings, 2010-2015

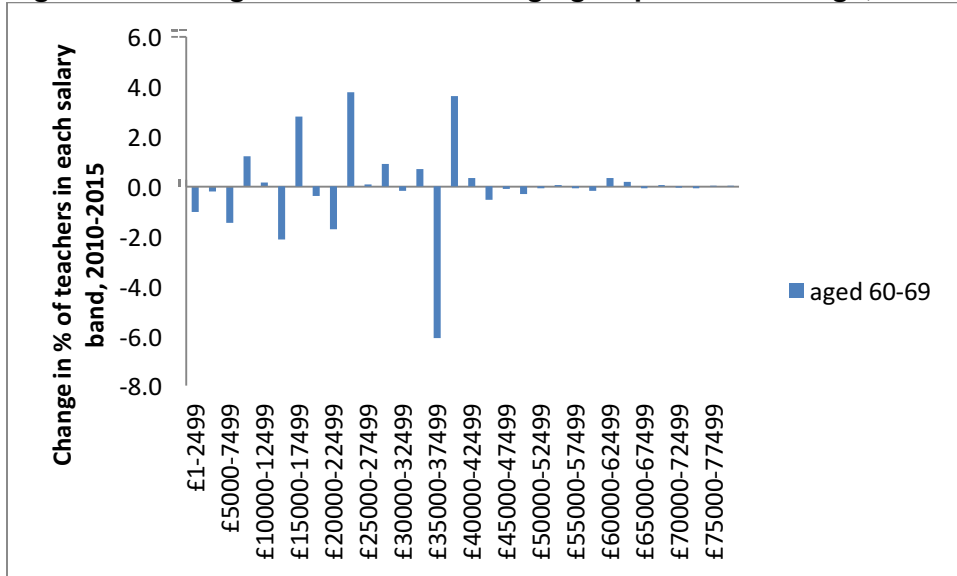


Figure 16: Change in distribution of White earnings, 2010-2015

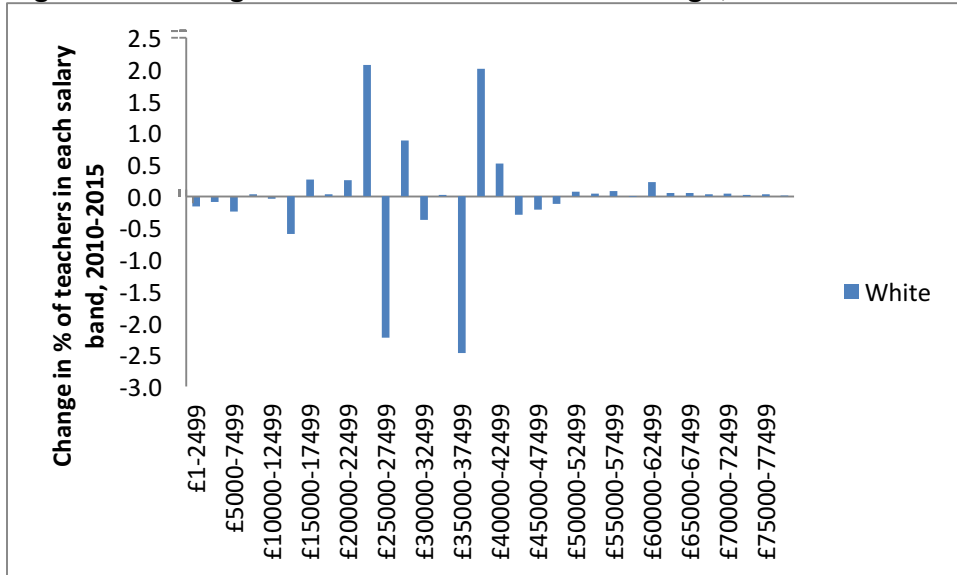


Figure 17: Change in distribution of mixed parentage earnings, 2010-2015

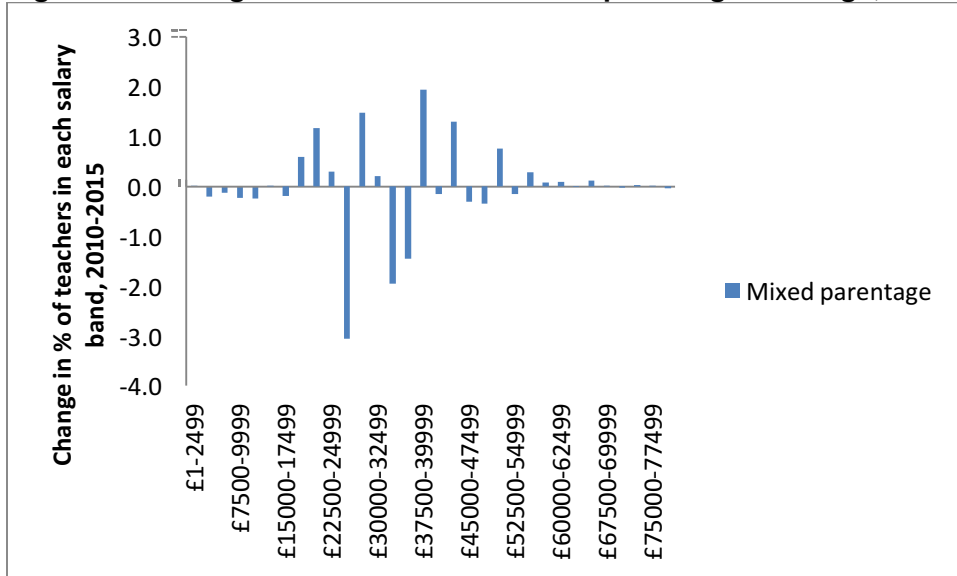


Figure 18: Change in distribution of South Asian earnings, 2010-2015

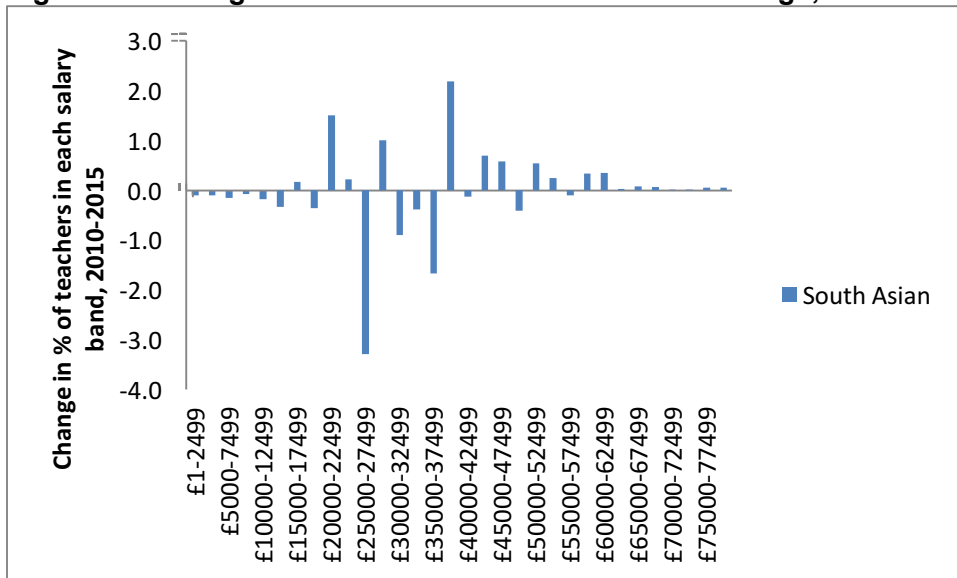


Figure 19: Change in distribution of Black earnings, 2010-2015

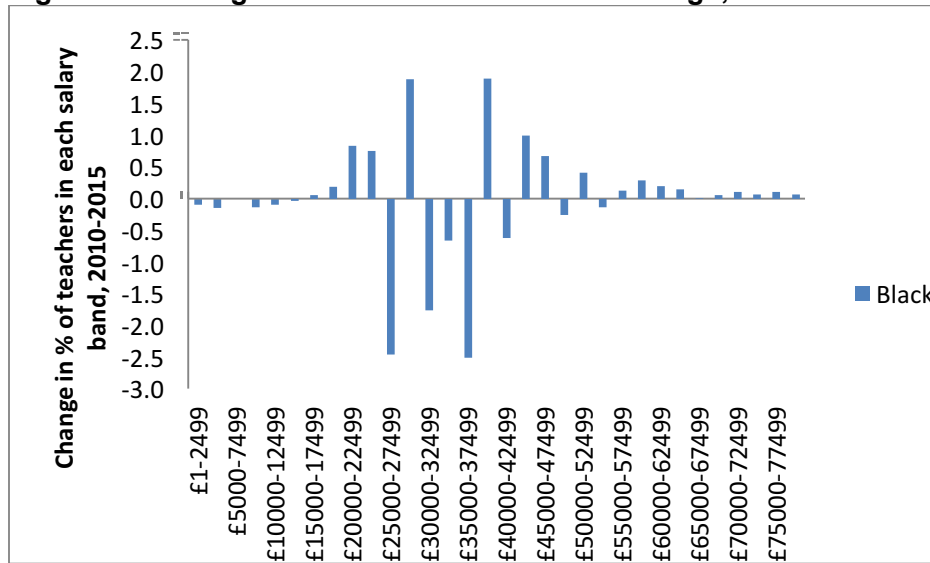
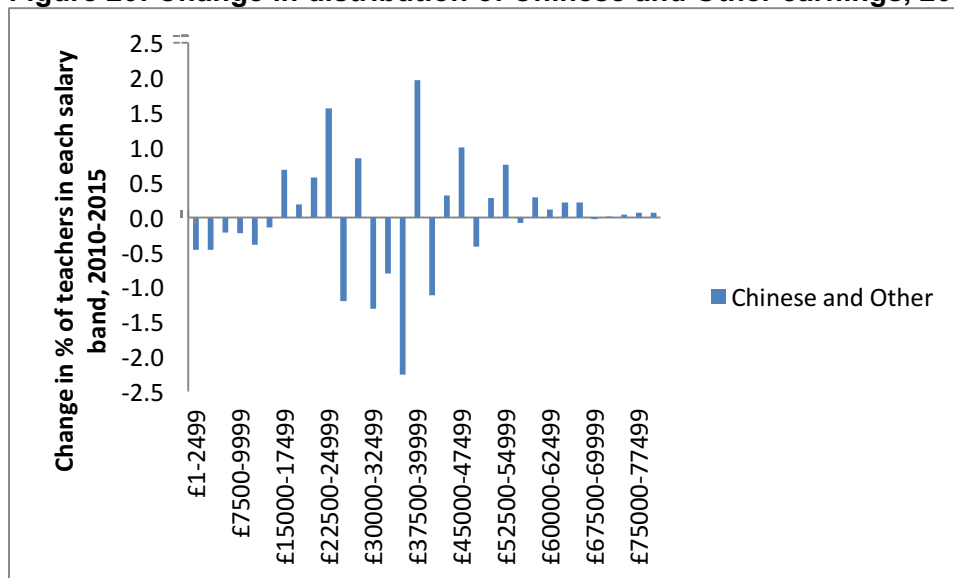


Figure 20: Change in distribution of Chinese and Other earnings, 2010-2015



4.1 Earnings trends for teachers who were in work throughout the period 2010-2015

An alternative perspective on earnings change is provided by examining the earnings of the subset of teachers who appear in each of the School Workforce Censuses from 2010 onwards. This is possible because DfE statisticians have produced a dataset which links teachers across years of the Census using a unique teacher identifier.

The mean earnings of these teachers was 9.1 per cent higher in 2015 than in 2010. The earnings of men grew more quickly than those of women, which meant that the earnings differential of men relative to women increased slightly (Table 66).

Table 66: Earnings trends by gender and disability for teachers in each Census, 2010-2015

	Mean earnings (£)		Change 2010-2015	Percentage change	Relative to all teachers	
	2010	2015			2010	2015
Female	31885	34787	2902	9.1	96.0	95.7
Male	37308	41224	3916	10.5	112.4	113.4
Female as a percentage of male earnings	85.5	84.4				
Persons	33205	36350	3145	9.5	100.0	100.0

The rate of change in earnings was fastest for the youngest age group, but was slower in each successively older age group (Table 67). The improvement in relative pay for young teachers is influenced by the fact that the youngest teachers are not included in this comparison; i.e. in those aged 29 in 2015 would have been aged 24 in 2010. The earnings of teachers aged over 60 was 19 per cent lower in 2015 than in 2010. This may have been because older teachers remaining in employment were accepting shorter hours of work. This effect might also be felt by teachers in the next younger age group (aged 51 to 59), whose relative earnings deteriorated sharply over this period. Differentials in earnings narrowed over this period as the teachers who remained in the Census grew older. Those aged over 60 in 2015 would have been in the highest earning ten-year age group in 2010, which accounts for their high pay relative to all teachers in 2010.

Table 67: Earnings trends by age group for teachers present in each Census, 2010-2015

Age group in 2015	Mean earnings (£)		Change 2010-2015	Percentage change	Relative to all teachers	
	2010	2015			2010	2015
21-29	23572	33926	10354	43.9	71.0	93.3
30-39	31330	35667	4337	13.8	94.4	98.1
40-49	34614	37688	3074	8.9	104.2	103.7
50-59	36922	37576	653	1.8	111.2	103.4
60-69	36671	29717	-6954	-19.0	110.4	81.8
All ages	33205	36350	3145	9.5	100.0	100.0

The highest rates of earnings increase by ethnic group were experienced by the Pakistani and Black-Caribbean ethnic groups, followed by the Black-African and Indian ethnic groups (Table 68). The earnings of White British teachers grew more slowly than average and hence have deteriorated in relative terms over this period. The relatively slower growth of White British teacher pay may be a result of higher-performing teachers who have seen their pay grow relatively rapidly being relatively more common in minority ethnic groups (thus

exerting a relatively greater influence on average pay). In contrast, both White Irish and White Other teachers experienced a higher than average rate of earnings growth.

Table 68: Earnings trends by ethnic group for teachers in each Census, 2010-2015

Ethnic group	Mean earnings (£)		Change 2010-2015	Percentage change	Relative to all teachers	
	2010	2015			2010	2015
White British	33018	35989	2972	9.0	99.4	99.0
White Irish	36081	40089	4009	11.1	108.7	110.3
Any Other White Background	34073	37910	3837	11.3	102.6	104.3
<i>Minority ethnic groups</i>	<i>34620</i>	<i>39233</i>	<i>4614</i>	<i>13.3</i>	<i>104.3</i>	<i>107.9</i>
Mixed parentage	33465	38342	4877	14.6	100.8	105.5
Indian	33468	38400	4932	14.7	100.8	105.6
Pakistani	32276	37589	5313	16.5	97.2	103.4
Bangladeshi	33577	38550	4973	14.8	101.1	106.1
Any Other Asian Background	34056	38332	4276	12.6	102.6	105.5
Black African	31942	36887	4945	15.5	96.2	101.5
Black Caribbean	33214	38515	5301	16.0	100.0	106.0
Any Other Black Background	34790	38913	4123	11.9	104.8	107.1
Chinese	36506	41592	5086	13.9	109.9	114.4
Any Other Ethnic Group	34490	38736	4246	12.3	103.9	106.6
All teachers	33205	36350	3145	9.5	100.0	100.0

Note: This table presents earnings for teachers aged 21 to 69.

5 Explaining earnings differentials

This far, tables of means and medians for the protected characteristics being considered have been presented. However, individual teachers have a range of characteristics (i.e., they may be younger, male and from a BME ethnic group) which can combine to influence their pay differentials. Furthermore, there are other factors (such as the phase of school and organisation which might affect their pay).

In order to investigate the influence of all protected characteristics and type of school upon pay for an individual, multiple regression models were fitted to the data for all teachers for each year from 2010 to 2015. The model estimates the independent influence upon wages of a set of explanatory variables, and tests the statistical significance of the effect for each variable.

The data set contains total annual earnings for each teacher. The most important influence on total earnings will be the amount of hours worked. This was taken in to account by calculating a measure of hourly earnings for each teacher. This was calculated by assuming the standard working week to be 32 hours, multiplied by 52 weeks to give an approximation to total hours worked per year. Estimated hourly wages are therefore annual gross earnings divided by estimated hours of work. The logarithm of the hourly earnings estimate was used as the 'dependent' variable in the regression model, because transforming wages using logarithms made the distribution of earnings much closer to the 'normal' distribution assumed by the regression technique.

Table 69 presents the "beta coefficient" (the percentage change in wages for a 1 per cent change in the independent variable, holding the effect of all other variables constant) and the T-statistic (the larger the value of the statistic the more significant the effect, with T-values greater than 2 or -2 indicating there is a 95 per cent or greater chance that this is a real effect – i.e. has not occurred due to chance) associated with each explanatory variable. The larger the beta coefficient is, the stronger its influence upon wage levels.

Not all the values of the protected characteristics explored in the report are represented in the table of results. This is because the model is comparing the effect of particular aspects of each characteristic against a 'baseline' characteristic. Thus, in the case of gender, the explanatory variable is being female. For age, younger and older age groups are compared against the 40-49 year old age group. For ethnicity, minority White and BME groups are compared against White British people. Disability is not represented in this model, because disability was not present in the 2010-2015 linked data set.

Because the model is estimated for nearly half a million teachers in each year, nearly all the explanatory variables in the model have statistically significant influences on the wage level (Table 69). The only non-significant influence is working in an academy in the model for 2010 (highlighted in italics). The "adjusted R square" value indicates how well the model represents the data. It shows that the model explains more than a third of the variation in the data. This shows that there are other variables not taken account of which influence earnings levels. However, adjusted R-square values tend to be relatively low for "cross-sectional" data of the type being modelled (i.e. data for a set of individuals for a single time period) and tend to be low for large data sets, because of the amount of random 'noise' in the data. This level of explanation is quite high.

The models reveal that:

- The most important influence on hourly earnings is being young. The size of the beta coefficient is largest for people aged 21 to 29 in each year. It is negative, indicating that this age group has lower hourly earnings, after controlling for the effect of other

characteristics. This would reflect the influence of promotion and rewards for performance for older teachers.

- The next most influential variables are working in a London school, for which earnings are higher in each year of the survey. This effect is strongest in Inner London. This reflects the higher earnings ranges of pay scales covering London and South-East England.
- Being female is a powerful influence depressing earnings in each year.
- Being aged 31 to 39 led to slightly lower wages relative to the comparison age group (41 to 49).
- Being aged 51 to 59 increased wages relative to the comparison age group (with those aged 60 or more also experiencing a weaker positive effect). The positive effect of being aged 50 to 59 on earnings weakened over the period 2010 to 2015.
- Teachers in secondary schools had higher earnings relative to other phases of education in each year.
- Being employed in an academy had no statistically significant effect on earnings in 2010, but in subsequent years the effect is weakly negative.
- The effect of ethnicity on wages was weaker than phase or sector of education.
- The effect of being from a minority ethnic group was to reduce hourly earnings relative to those of White British teachers. The negative effect was strongest for the Black-African ethnic group, followed by the Pakistani ethnic group.

The regression analysis reveals that once other factors, being female or from a minority ethnic group acts to slightly reduce hourly earnings relative to men and the White British ethnic group, but these influences are much weaker than age and sector of education.

Table 69: Beta coefficients and T-statistics from regression models of log wages for each year

Independent variable	2010		2011		2012		2013		2014		2015	
	Beta	T-statistic	Beta	T-statistic	Beta	T-statistic	Beta	T-statistic	Beta	T-statistic	Beta	T-statistic
Female	-0.042	-33.0	-0.036	-28.7	-0.031	-25.2	-0.022	-17.6	-0.029	-23.6	-0.022	-18.0
Secondary school	0.126	97.2	0.130	94.2	0.127	90.7	0.125	88.2	0.135	96.0	0.130	93.9
Academy	-0.002	-1.2	-0.007	-5.4	-0.022	-16.0	-0.027	-19.8	-0.005	-3.4	-0.026	-19.2
White Irish	-0.004	-2.9	-0.006	-4.9	-0.006	-5.3	-0.007	-5.8	-0.007	-5.8	-0.004	-3.7
White Other	-0.048	-38.7	-0.048	-38.9	-0.044	-36.6	-0.040	-33.0	-0.047	-38.5	-0.052	-43.3
Mixed parentage	-0.016	-13.3	-0.016	-13.4	-0.015	-12.4	-0.019	-15.4	-0.018	-14.8	-0.019	-15.6
Indian	-0.016	-12.9	-0.015	-12.0	-0.011	-9.2	-0.012	-9.7	-0.014	-12.0	-0.013	-10.5
Pakistani	-0.020	-16.7	-0.017	-13.9	-0.016	-13.6	-0.016	-13.5	-0.018	-15.2	-0.019	-15.6
Bangladeshi	-0.013	-11.1	-0.011	-8.9	-0.010	-8.1	-0.010	-8.4	-0.013	-10.5	-0.013	-10.8
Other Asian	-0.015	-12.2	-0.012	-9.6	-0.012	-10.3	-0.012	-10.2	-0.012	-10.3	-0.016	-13.6
Black African	-0.037	-30.1	-0.032	-26.6	-0.031	-25.9	-0.028	-23.3	-0.030	-25.1	-0.031	-25.7
Black Caribbean	-0.018	-14.9	-0.016	-13.2	-0.015	-12.8	-0.014	-11.5	-0.017	-13.9	-0.020	-16.7
Black Other	-0.012	-9.9	-0.010	-8.5	-0.011	-9.3	-0.010	-8.6	-0.011	-9.5	-0.012	-10.4
Chinese	-0.015	-12.6	-0.013	-11.2	-0.015	-12.5	-0.013	-10.9	-0.015	-12.5	-0.017	-14.3
Other ethnic group	-0.020	-16.2	-0.018	-15.0	-0.017	-14.0	-0.017	-13.9	-0.016	-13.5	-0.017	-14.5
Inner London	0.193	150.5	0.189	148.7	0.193	155.3	0.171	134.9	0.203	160.6	0.194	154.2
Outer London	0.108	86.9	0.109	87.9	0.109	89.8	0.095	77.1	0.111	90.4	0.108	88.4
London Fringe	0.024	19.7	0.022	18.1	0.021	18.0	0.007	5.7	0.014	11.3	0.015	12.8
Aged 21-29	-0.525	-348.8	-0.544	-366.5	-0.566	-390.8	-0.559	-380.2	-0.579	-399.2	-0.584	-401.9
Aged 31-39	-0.078	-50.3	-0.088	-57.4	-0.101	-68.0	-0.102	-68.0	-0.121	-81.3	-0.117	-79.0
Aged 51-59	0.100	66.7	0.085	58.0	0.073	51.8	0.058	40.7	0.045	32.5	0.033	24.0
Aged 61-69	0.016	12.5	0.015	11.7	0.014	11.4	0.015	12.2	0.007	5.7	0.006	4.5
Adjusted R-square	.350		.356		.368		.344		.368		0.362	
Standard error	.086		.085		.085		.091		.083		0.088	

6 Conclusion

This report provides an update to the quantitative analysis presented in the report for Work Package 2. It updates the analysis of the School Workforce Census using linked data for the period 2010 to 2015. The analysis revealed that gender is the most significant element of disadvantage, with women still being less well represented than men in senior posts.

The other main factor underlying disadvantage is age. Younger teachers tend to be paid less than average and are less likely to be employed in senior posts. Older teachers are more likely to have higher pay and to be employed in senior posts. However, job loss has been greatest for older teachers. Employment growth has been fastest for younger teachers.

Differentials in earnings by age and ethnic group have narrowed over the period analysed. However, there has been some deterioration in the relative circumstances of women. The disadvantage of disabled teachers is relatively small and there is little evidence of it worsening between 2010 and 2015. The growth of academies and free schools may have had an influence in maintaining gender differentials in type of job and pay, since men have been more likely than average to work in this sector, especially in the early years. However, there is some evidence that earnings are lower in academies and free schools than in other sectors.

Teachers who remained in the profession between 2010 and 2015 saw their pay increase, and minority ethnic groups fared better than White British teachers, though women fared worse than men. The differences in experience of the teacher workforce as a whole and the subset employed continuously over this period is a result of the changing demographics composition of the workforce. The regression analysis aimed to delve deeper into the data by controlling for the effect of demography, geography and school characteristics to identify whether teachers from protected groups did experience disadvantage. Disadvantage relative to men and the White British ethnic group was revealed for women, younger teachers and those from certain minority ethnic groups.