The early years workforce in England

A comparative analysis using the Labour Force Survey

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The Office for National Statistics (ONS) is responsible for the collation and management of the LFS and is the data controller of LFS data. Any inferences or conclusions derived from the LFS in this publication are the responsibility of the Education Policy Institute and not the Department for Education.

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Executive summary

In the past decade, the government has introduced several policies to increase and improve early years provision. These policies have resulted in a number of changes to the sector that have also had an impact on the workforce. The aims of this report are to provide a detailed analysis of the early years workforce in relation to demographic characteristics, education and training, and employment conditions, and to explore how key features have changed over time. The report also analyses early years practitioners in the context of the wider workforce, allowing us to determine if trends are similar to those for other workers.

We use 2006-18 data from the Labour Force Survey to compare four groups of workers:

- The 'childcare workers': including nursery nurses and assistants, childminders and people in related occupations, playworkers, teaching assistants, and educational support assistants. This group could be considered akin (although not a perfect match) to staff working for private, voluntary and independent providers (PVIs) and as childminders, rather than for all of early years professionals.
- The 'teaching workers': comprised of primary and nursery teachers, secondary teachers, and special needs education teachers.
- Workers in 'competing occupations': such as hairdressers, beauticians and people employed in similar jobs, which are often seen as career alternatives for students with poor academic records and women returning to work after having children.[1]
- The entire female working population.

Key findings

- **The childcare workforce is less qualified than both the teaching workforce and the general female workforce.** In 2018, 25.1 per cent of childcare workers held a degree as their highest qualification level. By contrast, 92.8 per cent of teaching workers and 37.1 per cent of all female workers hold a degree or equivalent qualification. Meanwhile, 36 per cent of childcare workers' highest qualifications level was to GCE, A-level or another equivalent Level 3 qualification, versus only 1.9 per cent of the teaching workers and 21.1 per cent of working women.
- **There are important differences across individual occupations in terms of highest qualification held**: 31.5 per cent of teaching assistants and 28.1 per cent of educational support assistants have a degree, but only 16.5 per cent of nursery nurses and assistants do. Instead, 46.9 per cent of nursery nurses and assistants have a GCE, A-level or equivalent qualification, and 19.2 per cent have GCSE grades A*-C.
- **Qualification levels of childcare workers are increasing very slowly and sometimes erratically.** In 2018, 25.7 per cent of childcare workers holding a National Vocational Qualification as their highest qualification were qualified at Level 1 or 2, 62.4 per cent at full Level 3 (which requires two A-levels or equivalent), and only 5.8 per cent at Level 4 or above. The general trend over the last few years has been towards a slight increase in the percentage of childcare workers holding a Level 3 qualification as their highest qualification, driven by nursery nurses and assistants, but changes are erratic across years. For example, the increase in the proportion of nursery nurses holding a Level 3 qualification from 65.9 per

cent in 2013 to 68.3 per cent in 2018 hides the fact that an initial jump to 73 per cent in 2016 was followed by a decrease between 2016 and 2018.

- **Qualification levels might be even lower in the future as the workforce is ageing and fewer employees are upskilling.** The proportion of childcare workers studying towards a higher qualification has fallen from 22.7 per cent in 2008 to 17.2 per cent in 2013 and to 14.9 per cent in 2018. The percentage of childcare workers who accessed training in the three months prior to the survey fell from over 40 per cent in 2008-10 to 35.9 per cent in 2018. However, workers within the three other groups considered in this analysis have shown a positive trend of increasing qualification levels.
- **The childcare workforce lacks diversity.** In 2018, 7.4 per cent of childcare workers were male, with the proportion being lower for nursery nurses and assistants (1.8 per cent), and childminders and those in related occupations (4 per cent). By contrast, 26.7 per cent of teaching workers and 13.7 per cent of hairdressers and beauticians are male.
- In 2018, 5.1 per cent of childcare workers (more than 37,000 people) were EU nationals. Therefore, the impact of Brexit on outward and inward migration will need to be monitored as a potential source of instability for the childcare sector. As a point of comparison, 5.6 percent (63,000) NHS staff members in England are EU nationals.[2]
- **Our data shows that childcare workers are often in a position of high financial insecurity. Pay is low, both in relative and absolute terms, and a high proportion of workers are claiming state benefits or tax credits.**[i] The childcare workforce earns a mean gross hourly pay of £8.20 in 2018. This is £5.00 less than the mean hourly pay of the female working population. Further, the sector has suffered a pay reduction of nearly 5 per cent in real terms since 2013, compared to an increase of 2.5 per cent for all working women.
- **With pay in real terms decreasing for childcare workers, and increasing for hairdressers and beauticians, gross hourly pay for the two occupations has been converging over time, with a difference of around 40p per hour in 2018.** While childcare workers have, on average, slightly higher levels of qualifications, the low wage differential provides them with very few incentives to either upskill or stay in the sector after reaching higher qualification levels.
- **The proportion of childcare workers claiming state benefits or tax credits remains very high at 44.5 per cent and is the highest among the four groups we analysed.** In 2018, 30 per cent of teaching workers, 40 per cent of hairdressers and beauticians, and 34 per cent of female workers claimed state benefits or tax credits. The percentage of workers claiming state benefits or tax credits has generally decreased since 2013, except for those working in competing occupations.

Conclusions

The childcare workforce is often portrayed as mostly female, low qualified and poorly paid and our analysis confirms this. This report highlights the challenges that need to be addressed in order to secure a highly qualified and skilled childcare workforce.

[i] The question asks: 'In the week ending Sunday the [date], were you claiming any State Benefits or Tax Credits (including State Pension, Allowances, Child Benefit or National Insurance Credits)?' Examples of state benefits considered in the LFS are: Universal Credit, Housing or Council Tax Reduction, income support, child benefit, and carer's allowance (Office for National Statistics, User guide volume 2, 2017).

The recruitment concerns raised by early years providers may become more serious in the near future. This is due to the stagnant number of practitioners and the ageing of those most qualified among the workforce. The decrease in the proportion of workers studying towards higher qualifications and accessing job related training is common among all four occupational groups. However, given the generally low education level of the childcare workforce and the importance of training plus Continuing Professional Development for high quality early years provision, these trends are more concerning than for the other groups.

Research shows that an ethnically, culturally and linguistically diverse workforce, which better reflects wider society, can help children reach their full potential.[3,4] In addition, encouraging diversity helps increase the pool of applicants to the sector. Yet, our analysis shows low socio-demographic diversity among childcare workers.

Finally, the signs of financial insecurity are serious. Not only are childcare workers low paid but they also have seen a decrease in hourly pay in real terms in the last few years. This has left them relatively more dependent on state benefits and tax credits, at a level that is significantly higher than for most other workers. Therefore, while early years practitioners are tasked with the important work of helping close the disadvantage gap, pay and some employment conditions are keeping the very same workers in a position of socio-economic disadvantage.

High quality early years provision can have a positive and lasting impact on children's socio-emotional and cognitive development. The evidence clearly indicates that a skilled and qualified workforce is a key driver of high quality provision.[5] Yet this report finds that the skills and sustainability of the workforce are going in the wrong direction. If the government is committed to improving the quality of early years provision, it must provide the well-informed incentives for motivated workers to not only enter, but also remain, in the sector with opportunities to upskill, better wages and improved financial security. This requires a long-term strategy that places the early years workforce at the heart of both early years and social mobility policy.

Introduction

There has been much public and policy interest in early years' education and workforce in the past few years. Since the extension of the free part-time entitlement to three-year olds in the early 2000s and to disadvantaged two-year olds in 2014, the 'free 30 hours entitlement' introduced in September 2017 has, arguably, been the biggest childcare policy change in England. However, the government's focus on increasing the quantity of childcare in order to deliver this policy has generated significant concerns about the tension between the quality and quantity of provision, and the impact on disadvantaged children. The attainment gap between affluent and poor children is estimated at 4.3 months by age five and is considerably larger when measured for specific language development outcomes.[6] For example, by the time children start school, there is already a 19-month gap in the vocabulary development between the two groups, a gap that research has shown could be reduced with early language interventions.[7,8] What is clear from the evidence is that quality matters and that the workforce is a key driver of quality provision.[9,10] What is less clear is which features of the early years workforce make the biggest difference.

In recent years, an increasing number of studies have tried to shed light on the complex relationship between the quality of provision and children's outcomes. One particular strand of research has investigated the impact of workforce quality on children's outcomes. So far, results have been mixed as current proxies for quality, such as qualifications, do not always bear a direct link with children's outcomes.[11,12] International comparisons have also provided useful information on childcare staff and their working conditions that could have an impact on the quality of provision and children's outcomes.[13] Nevertheless, as current research in England focuses mainly on graduates, who represent the minority of the early years workforce, and less is known about the rest, many questions are still unanswered, such as: Who are the people working with young children? What is their educational background? Which education paths did they follow to enter the early years sector? What are the current trends and challenges in recruitment and retention, and have they changed over time? Are there other elements that could potentially have an impact on the quality of the workforce and the provider they work for, which, in turn, might affect children's development and learning trajectories?

This report is the first in a series that aim to provide the answers to some of these questions. The overarching goal that guided this work was to increase our understanding of who early years practitioners are. The following questions in particular guided our analysis:

- What are the key characteristics of the early years workforce in terms of demographics, training and qualification, and employment conditions?
- How have these features changed over time?
- How do they compare with: teaching staff at other stages of the education system, workers employed in occupations that are predominantly female in composition, and the entire female working population?

Our study is based on secondary analysis of a large-scale and regularly updated dataset, the Labour Force Survey (LFS), for workers living in England and for the years 2006-18. The report builds on two other pieces of research, Simon et al. (2007) and Machin, McNally and Ou (2010), which provided data about the childcare and social care workforce until 2005 and 2008 respectively.[14,15] Given the

rapid policy developments that have involved the early years sector and its workforce since then, those analyses are now in need of an update. In addition to providing such an update, we also run the analysis using a different methodology (see Annex 1). Therefore, we remind the reader that results are not directly comparable.

This report begins with an introduction to our data source and a description of the occupations included in the analysis, of how their classification has changed over time, and of the impact of such changes on our analysis. Next, we present our findings, looking at changes over time and differences across individual occupations and groups. Finally, we draw some conclusions.

Data and methodology

The Labour Force Survey

This report is based on analysis of the LFS, a national survey of private households in the United Kingdom and the largest of the government's regular household surveys. The quarterly LFS is a quarterly sample of approximately 90,000 individuals participating for five quarters in a row and provides detailed information on demographic characteristics, education and training, earnings, and employment conditions. This helps us place the early years workforce in the context of the whole economy, allowing comparison with the education sector at large and with other sectors.[16]

There exist other sources of information about the early years workforce, such as the Provision for children under five years of age in England and the Survey of childcare and early years providers published by the Department for Education (DfE), and Ofsted data on registered childcare providers. These sources collect data from early years settings and schools providing nursery and reception classes by surveying staff at managerial levels, who report on the setting's workers, or by inspecting providers registered with Ofsted. The LFS, meanwhile, provides data that is self-reported by each individual surveyed.

Different sources provide information based on different workers categorisations. Compared to the surveys conducted by DfE, the LFS occupational classification considers the early years workforce in a narrower way. The five occupations included in the childcare category are: 'nursery nurses and assistants', 'childminders and related occupations', 'playworkers', 'teaching assistants' and 'educational support assistants' (see Annex 2 for a description of each individual occupation).[ii] To recall LFS terminology, we will call them the 'childcare workers' in this report. Since 2011, these categories exclude people working at managerial level. The focus on people working in the direct provision and delivery of care and education is in line with the goal of our analysis, making the LFS a preferred survey to use. However, these categories are less accurate in their grouping of some of these frontline workers. For example, a lot of managers, particularly those working in small settings, may also be working directly with children, while practitioners may be given the job title of manager even if they are working on pedagogy. Another example is the category 'childminders and related occupations', which includes both childminders – professionals working as registered providers – and au pairs and nannies. Au pairs and nannies are not directly regulated and, therefore, have not been professionalised in the same way as other types of childcare provision and roles. For this reason, they are not subsidised by the government and are not of direct interest for this report.

Despite this limitation, the use of the LFS has advantages. For example, it contains a wide range of indicators covering the three areas mentioned above (demographics, training and education, and employment conditions) as well as labour market indicators. Also, it allows comparisons between

[ii] Despite the name, 'teaching assistants' and 'educational support assistants' are coded under unit group 612, 'childcare and related personal services'. Therefore, for the sake of consistency with the LFS we kept these occupations within the 'childcare workers' group.

the childcare workforce and people working in other sectors of the economy. These types of analysis are the focus of this report.[iii,17]

In Annex 1 we provide details of our methodology.

[iii] The five quarters longitudinal LFS allows us to observe patterns of entry into, and exit out of, the childcare sector compared to other sectors of the economy, as it is possible to discern who moved between occupations in the five quarters in which they participated in the survey. This will be the focus of a separate report.

Occupations in the LFS

The LFS provides information about occupations using the Standard Occupational Classification (SOC), which is composed of nine major groups, and 25 sub-major groups that divide into 90 minor groups and 369 unit groups.[18] Unit groups are sets of specific occupations, grouped together on the basis of tasks performed, and the qualifications, training, skills and experience commonly associated with those tasks.

This study focuses on eight of these unit groups, which we organised into two occupational groupings: 'childcare workers' and 'teaching workers' (see Annex 2 for a description of each individual occupation). Every 10 years the SOC is revised to account for changes to job titles, tasks performed and changing qualification levels. The latest revision took place in 2010, with changes taking effect in the January-March quarter of 2011. Therefore, our analysis spans over two different sets of SOC codes: the SOC2000 for the timeframe 2006-10 and the SOC2010 for 2011-18. Below, we detail the changes as they affect the unit groups of interest to our analysis.

The first occupational grouping we consider, 'childcare workers', has seen a few changes between SOC2000 and SOC2010. First, the job titles for codes 6121 and 6123 have slightly changed: nursery nurses were renamed nursery nurses and assistants (6121), and playgroup leaders/assistants were renamed playworkers (6123). Despite the renaming, there is a 100 per cent correspondence in terms of composition. Second, teaching assistants (6125) and educational support assistants (6126) were newly created unit groups in 2011, mostly derived from the previous group 'educational assistants' (6124). Finally, since 2011 people at managerial level are routed into different codes; therefore, SOC2010 codes are in general more reflective of frontline workers. The code for childminders and related occupations (6122) did not see any changes.

The group of teaching professionals includes: higher education teachers, further education teachers, secondary education teaching professionals, primary and nursery education teaching professionals, special needs education teaching professional, and other educational professionals. The group is clearly very heterogeneous, making comparisons not always meaningful for the purpose of our study. Therefore, we restricted our analysis to what we will call 'teaching workers', who include: secondary education teaching professionals (2314), primary and nursery education teaching professionals (2315), and special needs education teaching professionals (2316). These occupations have remained largely unchanged between the SOC2000 and the SOC2010, with the exception of people working in managerial position being routed to other codes. The code that was most affected is 2315 because, in addition to the recoding of managers, part of the group was also re-routed into senior professional of educational establishment (code 2317, not included in our analysis).

The way in which the LFS groups occupations has two important drawbacks for our analysis. First, the unit code 6122 ('childminders and related occupations') includes au pairs and nannies who are not of interest to us. In the main text of our report, we provide results for the group as a whole to stay in line with LFS classification and to ensure we have a good sample size. However, we are mindful of how the inclusion of au pairs and nannies could be skewing the results for the whole group and provide a misleading picture of registered childminders. Therefore, we ran a separate analysis after trimming the group in a way that could help us separate childminders from the other occupations. We provide details and results in Annex 3.

Second, there is no way to distinguish between nursery and primary education teaching professionals. Therefore, we want to remind the reader that the group 'childcare workers' might be a better (although not perfect) approximation for practitioners working in the private, voluntary and independent providers (PVIs) sector and as childminders, rather than for all of early years professionals. Nursery teachers grouped with primary teachers are likely to be working in maintained nurseries and nursery classes in primary schools.

More generally, the language and classification used by the LFS at times reflect an obsolete view of the early years workforce. Recent advocacy efforts have focused on this issue. The ONS has been very responsive and is in the process reviewing the SOC codes in ways that are more reflective of the sector.[iv] Unfortunately, these changes will not take effect until 2020. Therefore, we decided to use the current language and classification to be consistent with the LFS and with previous similar work, while detailing issues and limitations in this report.

We analysed two additional subsets of the workforce:

- People working in what we will call the 'competing occupations', which, like childcare, have a very high percentage of female workers and are often considered as occupations that childcare workers could easily choose as alternative career, and
- The 'all women workers', which provides a national comparison with the female working population.

The codes we used for the 'competing occupations' are 6221 ('hairdressers and barbers') and 6222 ('beauticians and related occupations'), which are represented respectively by 83.1 per cent and 95.4 per cent of female workers. The coding of the individual occupations had seen only minor changes over the years, allowing a more straightforward analysis of changes over time.

In brief, in most cases the changes in SOC codes did not have any major impact on the unit groups of interest to us. However, to account for the recoding of workers at managerial level we decided to break up the time series at the 2011 mark. In addition, to address potential problems of small sample sizes when disaggregating the data by individual occupation, we calculated moving averages on a three-year basis. Therefore, in the report we present results for two time periods: 2008-10 and 2013-18. Annex 1 provides further details on the methodology used.

[iv] More information can be found at https://gss.civilservice.gov.uk/guidances/standard-occupational-classifications/

Workforce size

Figure 1 shows the number of workers in 2018 in each of the four occupational groups and in each individual occupation, rounded to the nearest thousand.

Figure 1. Number of workers in each occupation group and unit, 2018

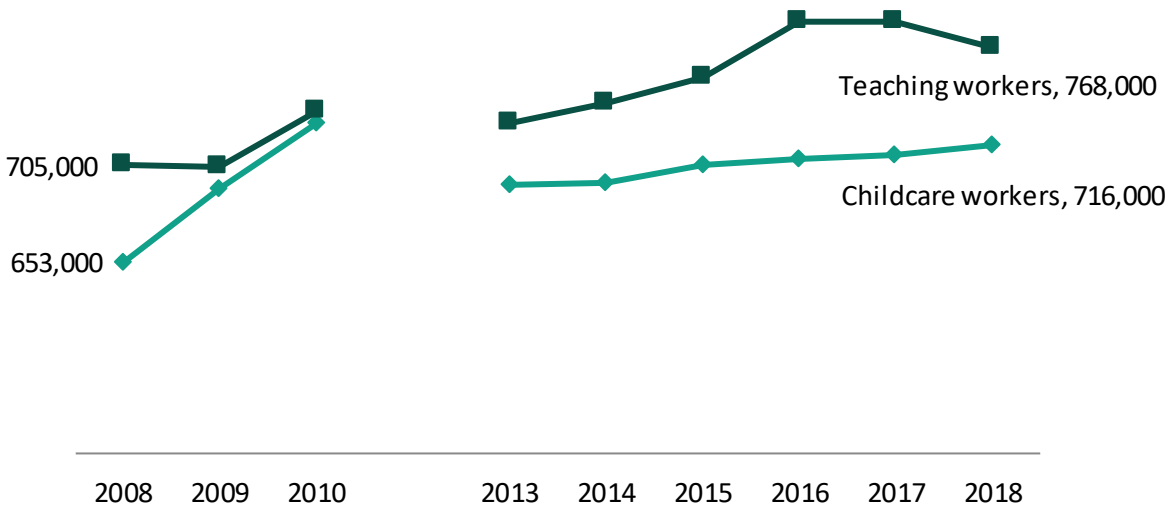
Occupational group	Individual occupations	SOC2010 unit codes	Population numbers
Childcare workers			
	Nursery nurses and assistants	6121	184,000
	Childminders and related occupations	6122	91,000
	Playworkers	6123	278,000
	Teaching assistants	6125	276,000
	Educational support assistants	6126	137,000
	Total		**716,000**
Teaching professional			
	Secondary education teaching professional	2314	340,000
	Primary and nursery education teaching professionals	2315	357,000
	Special needs education teaching professionals	2316	71,000
	Total		**768,000**
Workers in competing occupations	Hairdressers and barbers	6221	
	Beauticians and related occupations	6222	
	Total[(a)]		**219,000**
All women workers	**Total**	N/A	**12,243,000**

(a) Due to small sample sizes, we will not be disaggregating between the different competing occupations; but instead, we will treat the group as a whole in our analysis.

The number of childcare workers has changed little between 2013 to 2018, from just under 700,000 to about 716,000, a 3.1 per cent change, with minor fluctuations over the years. Even though direct comparison with 2008-10 is inappropriate, figures for the latter period show that the number of childcare workers had increased from 653,000 to 728,000, an 11.5 per cent increase.

The number of teaching workers also rose modestly in the past decade, with a total increase by 5.6 per cent between 2013 and 2018, from 728,000 to 768,000. This group had only grown by 4.2 per cent in the 2008-10 period, when the total number went from 705,000 to 743,000.

Figure 2. Trend in the number of childcare and teaching workers, 2008-10 (includes managers) and 2013-18 (excludes managers)



In 2018, approximately 219,000 people were working in competing occupations, a 5.1 per cent increase from 2013, when 208,000 people were employed as hairdressers and beauticians. The trend was downward for the 2008-10 period, when the number of people in the competing occupations decreased from about 185,000 to 182,000. Finally, the total number of women in employment increased from about 11,253,000 in 2013 to 12,243,000 in 2018, an 8.8 per cent increase, continuing the upward trend started in 2008, when 11,116,000 women were in the workforce.

In the following chapters, we provide detailed results of our analysis for each occupational group and unit.

Chapter 1. Demographic characteristics

In this chapter we focus on the demographic characteristics of each occupational group, reporting on features such as: age profile, gender, ethnicity, country of birth and parental status. We discuss changes over time and, when comparisons are appropriate, across individual occupations and groups.

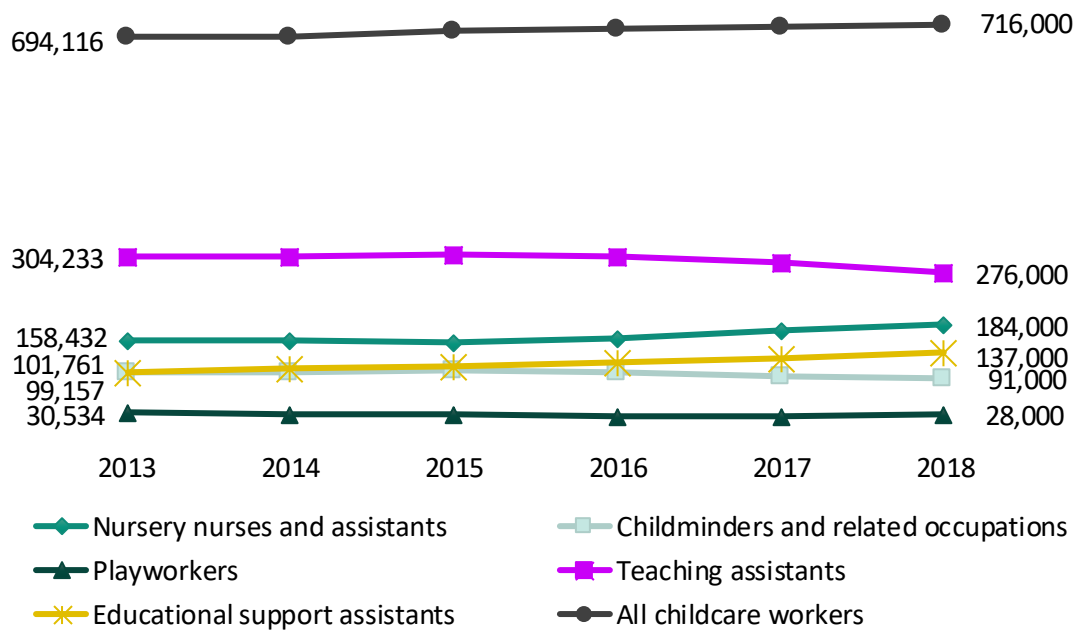
Childcare workers

We have seen in the previous section that the size of the childcare workforce had increased quite significantly between 2008 and 2010, from 653,000 to 728,000, by 11.5 per cent. Changes were evenly distributed across each occupation, with the exception of educational assistants (code 6124). From 2008 to 2010 changes were as follows:

- The number of nursery nurses increased by five per cent, from 133,000 to 139,000.
- The number of childminders and people in related occupations increased by 7.5 per cent, from 106,000 to 114,000.
- The number of playgroup leaders/assistants increased by 6.8 per cent, from 41,000 to 44,000.
- The number of teaching assistant increased by 15.5 per cent, from 373,000 to 431,000.

The size of this group has not changed significantly since 2013. In 2018, approximately 715,000 people reported childcare as their main occupation. We need to keep in mind, though, that people in managerial position are no longer included in these individual unit codes.

Figure 3. Change in the number of childcare workers by occupation, 2013-18



As figure 3 shows, from 2013 to 2018:

- The number of nursery nurses and assistants increased by 16.2 per cent, from 158,000 to 184,000.
- The number of childminders and people in related occupations decreased by 8.1 per cent, from 99,000 to 91,000.
- The number of playworkers decreased by 9.3 per cent, from 31,000 to 28,000.
- The number of teaching assistants fell by 9.4 per cent, from 304,000 to 276,000.
- The number of educational support assistants increased by 34.6 per cent, from 102,000 to 137,000.

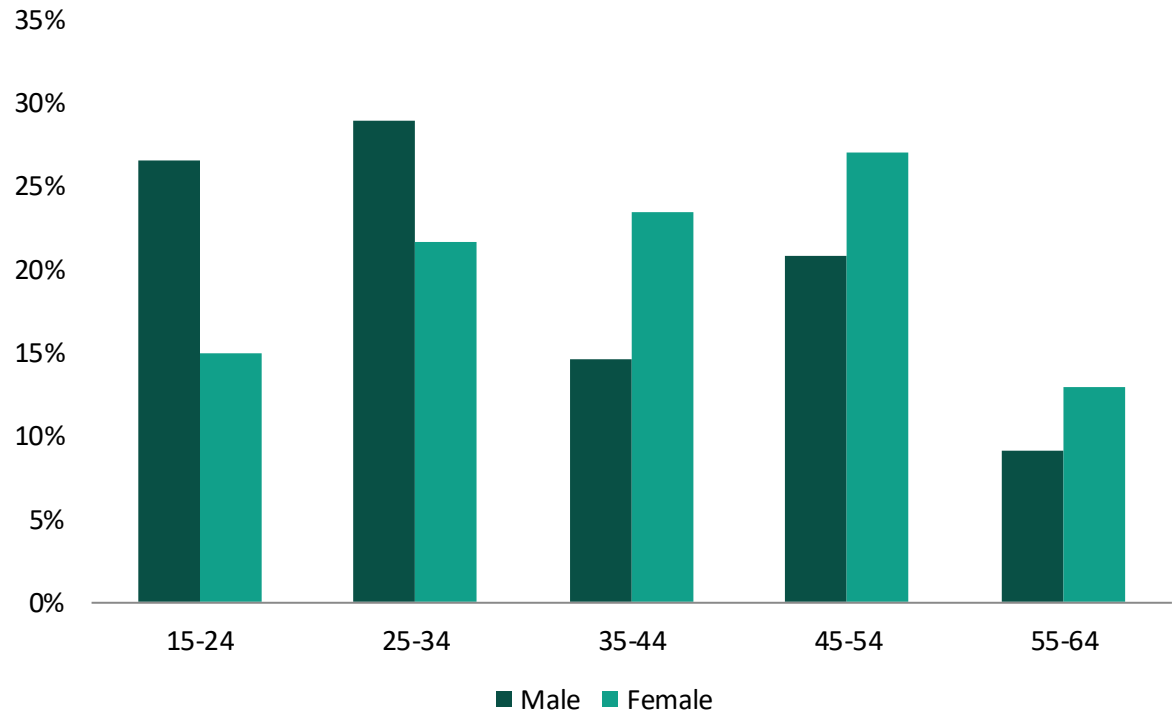
The average age of childcare workers is 39 and has remained stable since 2013, as well as in the previous time frame. The age profile shows a more uneven picture, with the percentage of people in some age ranges stable or decreasing (15-19, 35-39, 40-44, 45-49 and 50-54) and others increasing (20-24, 25-29, 30-34, 55-59, 60-64). Figure 4 also shows that the direction of change for the age ranges 15-19, 45-49 and 55-59 is different between the two periods considered in our analysis, with some figures varying significantly between 2010 and 2013. This might be due to the revision of SOC codes and, particularly, to the recoding of people in managerial positions, who are more likely to be in the mid-age bands. It could also point to the fact that the sector might be drawing its workforce from women returning to work rather than from young school/college leavers. Finally, it could reflect a general trend of people outside of the public sector where changes to retirement age mean people are retiring later.

Figure 4. Trends in age profile of the childcare workers, 2008-10 (includes managers) and 2013-18 (excludes managers)

	2008	2009	2010		2013	2014	2015	2016	2017	2018	
15-19	4.2%	4.0%	4.0%	↓	3.7%	3.9%	4.2%	3.9%	3.8%	3.7%	→
20-24	11.3%	11.2%	11.9%	↑	11.2%	11.0%	11.7%	12.7%	13.0%	12.1%	↑
25-29	9.7%	9.9%	10.0%	↑	11.2%	10.7%	10.4%	11.3%	11.4%	11.7%	↑
30-34	9.0%	9.5%	9.6%	↑	8.8%	9.4%	9.1%	9.6%	9.7%	10.5%	↑
35-39	13.6%	13.6%	13.1%	↓	11.1%	10.6%	10.7%	10.6%	10.8%	10.7%	↓
40-44	18.0%	17.5%	17.1%	↓	14.8%	14.4%	13.3%	12.4%	12.4%	12.1%	↓
45-49	15.1%	15.4%	15.4%	↑	15.2%	15.1%	15.8%	15.2%	14.2%	13.9%	↓
50-54	9.8%	9.8%	9.7%	↓	13.2%	13.1%	12.7%	12.5%	12.8%	12.7%	↓
55-59	6.4%	6.2%	6.1%	↓	7.5%	8.0%	8.3%	7.9%	7.9%	8.3%	↑
60-64	3.0%	3.0%	3.3%	↑	3.2%	3.7%	3.9%	3.9%	4.0%	4.3%	↑

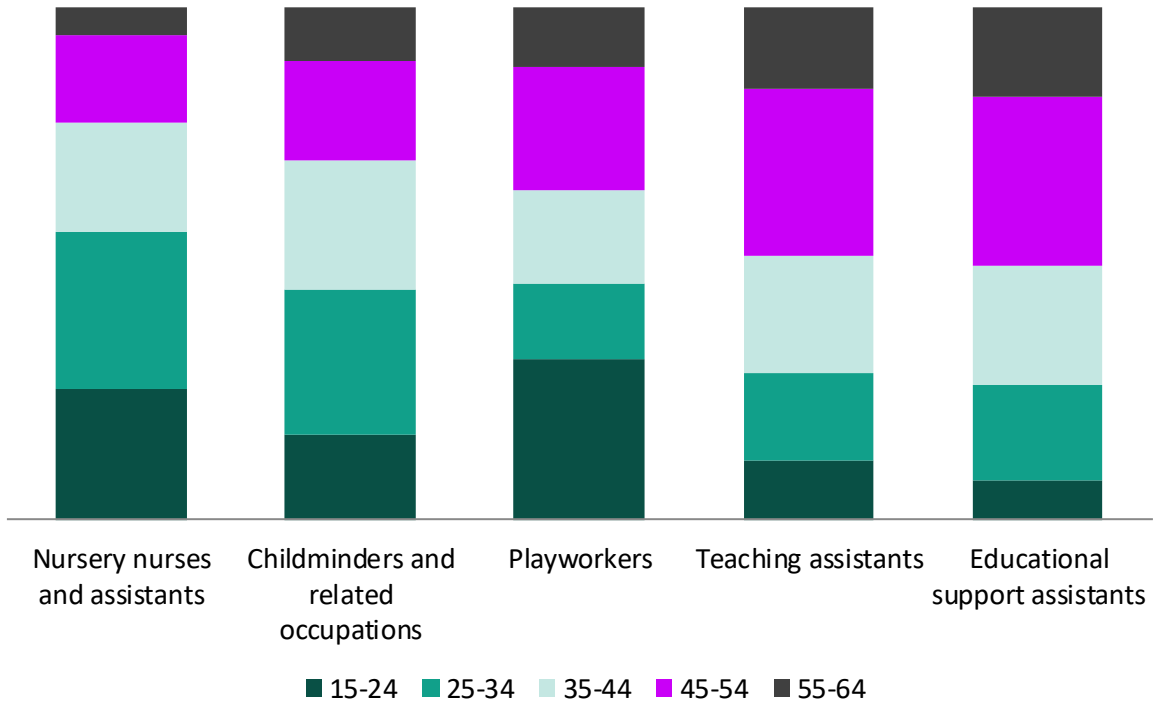
The age profile looks different for male and female workers, with the female population being more evenly distributed across all age ranges.

Figure 5. Age profile by sex, 2018



Differences are also clear across individual occupations.[v]

Figure 6. Age profile by individual occupation, 2018



[v] The age profile for each occupation has changed over time but without any pattern of significance.

A few points stand out in figure 6:

- A disproportionate amount of playworkers are very young (15.5 per cent are 15-19 years old), which might not necessarily be negative if this was the starting point of a career in the childcare sector and young people were staying in sector and upskilling over time.
- The age profile of nursery nurses and assistants and of childminders seem to be the most evenly distributed – in the case of the childminders this is probably due to the inclusion of au pairs and nannies in the category that might skew the age profile towards younger cohorts (see Annex 3).
- Teaching assistants and educational support assistants tend to be older, with very few people in the 15-19 age group (2 per cent and 0.7 per cent, respectively), which is to be expected given the entry qualifications to the profession.

It is widely known that the childcare workforce is female dominated and this is confirmed by the LFS. In 2018, only 7.4 per cent of the workers were men - up from 5.3 per cent in 2013 - but there are again significant differences across individual occupations. Only 1.8 per cent of nursery nurses and assistants, and four per cent of childminders and people in related occupations are male, while 13 per cent of playworkers, 9.1 per cent of teaching assistants and 13.2 per cent of educational support assistants are male. Between 2013 and 2018, the proportion of male workers has increased in each occupation except for nursery nurses and assistants. These trends seem to have started in 2008.

Childcare workers are, and have traditionally been, mostly White (86.9 per cent in 2018 v 91.3 per cent in 2013). Similarly, more than 84 per cent of the childcare workforce was born in England, a slight decrease from 86.1 per cent 2013, while 1.9 per cent was born in other parts of the UK versus 2.8 per cent in 2013. Diversity by nationality seems to have increased in the past few years. In 2018, 6.2 per cent of the childcare workforce was born in a different European Union country. In view of the recruitment concerns raised by many providers and the implications of Brexit on inward migration, the fact that almost 45,000 workers were not born in the UK might put further strain on the ability of the sector to recruit qualified staff in the next few years.

Finally, we looked at the proportion of the childcare workforce that has young children. In 2018, 58.7 per cent had dependent children below age 19, down from 61.1 per cent in 2013; of those with children, just 15.3 per cent had children of age zero to four in 2018 versus 15.1 per cent in 2013.

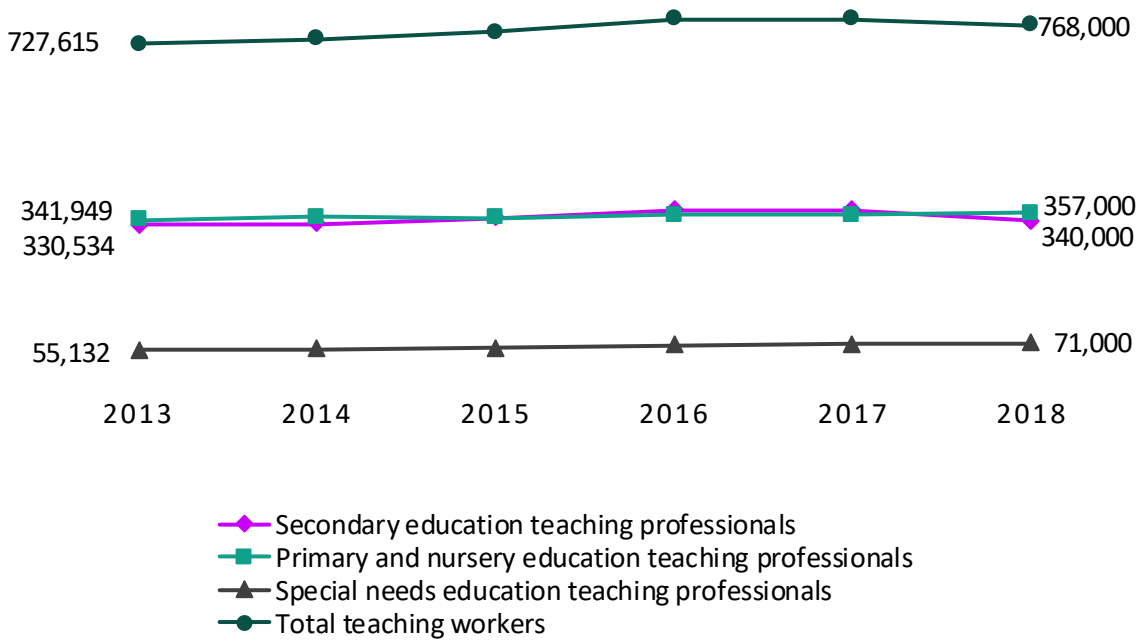
Teaching workers

The number of teaching workers increased by 4.2 per cent between 2008 and 2010, from 705,000 to 743,000 people. However, changes were quite different across individual occupations. The number of secondary education teaching professionals, and primary and nursery teaching professionals increased by 4.5 per cent and 6.3 per cent respectively, while that of special needs education teaching professionals decreased by 8.6 per cent.

These figures rose at a faster pace between 2013 and 2018, when the number of teaching workers increased by 5.6 per cent, from 728,000 to 768,000. Once again, the rate of change for each occupation is different. Primary and nursery education teaching professionals increased from 342,000 to 357,000, a 4.3 per cent increase; secondary education teaching professionals increased from 331,000 to 340,000, a three per cent change; and special needs education teaching

professionals increased from 55,000 to 71,000, almost a 30 per cent increase, in stark contrast to the decreasing trend of the previous time frame.

Figure 7. Change in the number of teaching workers by occupation, 2013-18



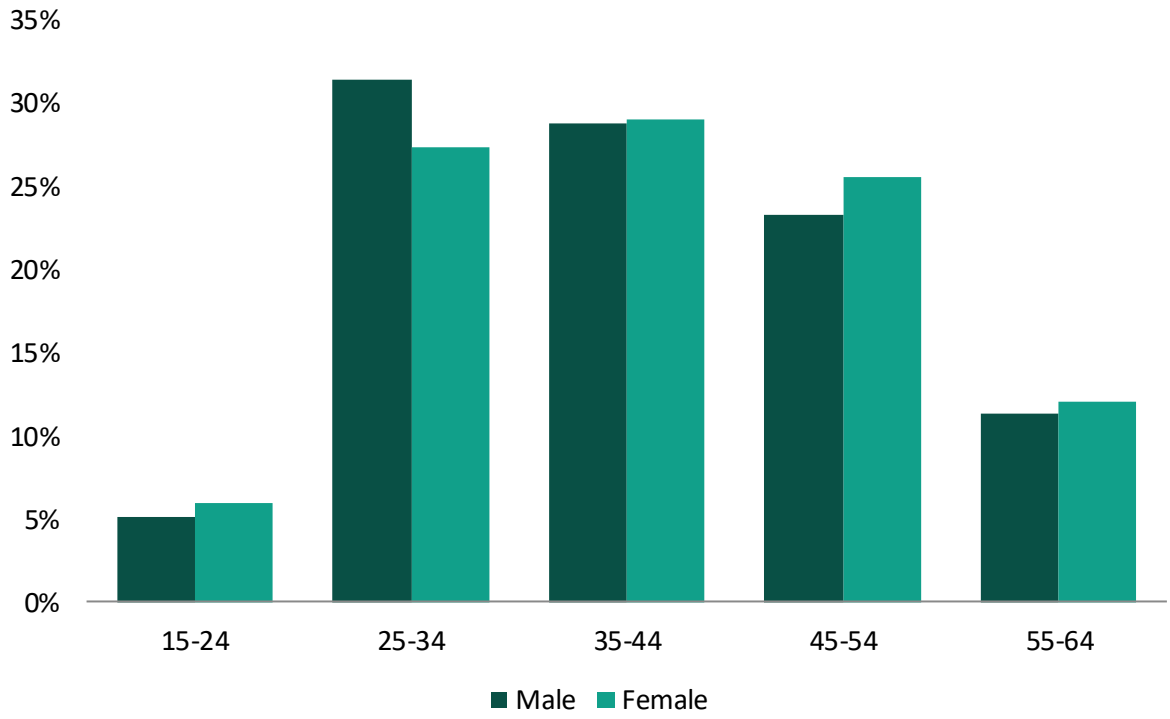
The average age was 41 in 2018 and has remained stable since 2013, while it was slightly higher in 2008-10 at 42, possibly because managers were still included in the group. Figure 8 shows an age profile that is different from the one for the childcare workforce. Between 2013 and 2018 the percentage of the teaching workforce in the very young age ranges (15-19, 20-24) and in the middle of the age profile distribution (35-54) has increased. The percentage in the age groups 25-29 and 30-34 and nearing retirement age decreased. These trends seem to have started in 2008-2010, except for a few differences that might again reflect the change in the coding system.

Figure 8. Trends in age profile of the teaching workers, 2008-10 (includes managers) and 2013-18 (excludes managers)

	2008	2009	2010		2013	2014	2015	2016	2017	2018	
15-19	0.1%	0.1%	0.2%	↑	0.1%	0.2%	0.2%	0.2%	0.2%	0.3%	↑
20-24	4.3%	4.8%	4.7%	↑	4.5%	4.5%	4.2%	5.2%	5.3%	5.5%	↑
25-29	13.4%	14.0%	15.1%	↑	16.2%	14.8%	14.9%	14.7%	15.2%	14.2%	↓
30-34	14.2%	14.3%	15.0%	↑	16.1%	16.2%	16.7%	15.8%	14.4%	14.3%	↓
35-39	11.8%	11.4%	11.8%	→	13.4%	13.7%	13.2%	12.7%	13.2%	14.8%	↑
40-44	11.4%	11.1%	11.3%	↓	12.9%	13.3%	13.0%	13.3%	13.1%	14.1%	↑
45-49	11.9%	12.3%	11.8%	↓	12.6%	12.8%	12.6%	13.1%	13.9%	14.0%	↑
50-54	16.7%	14.6%	13.0%	↓	10.0%	11.0%	11.0%	11.5%	11.5%	11.0%	↑
55-59	13.0%	13.7%	12.7%	↓	9.5%	9.0%	9.7%	8.7%	8.5%	7.4%	↓
60-64	3.1%	3.8%	4.5%	↑	4.6%	4.5%	4.7%	4.8%	4.8%	4.5%	↓

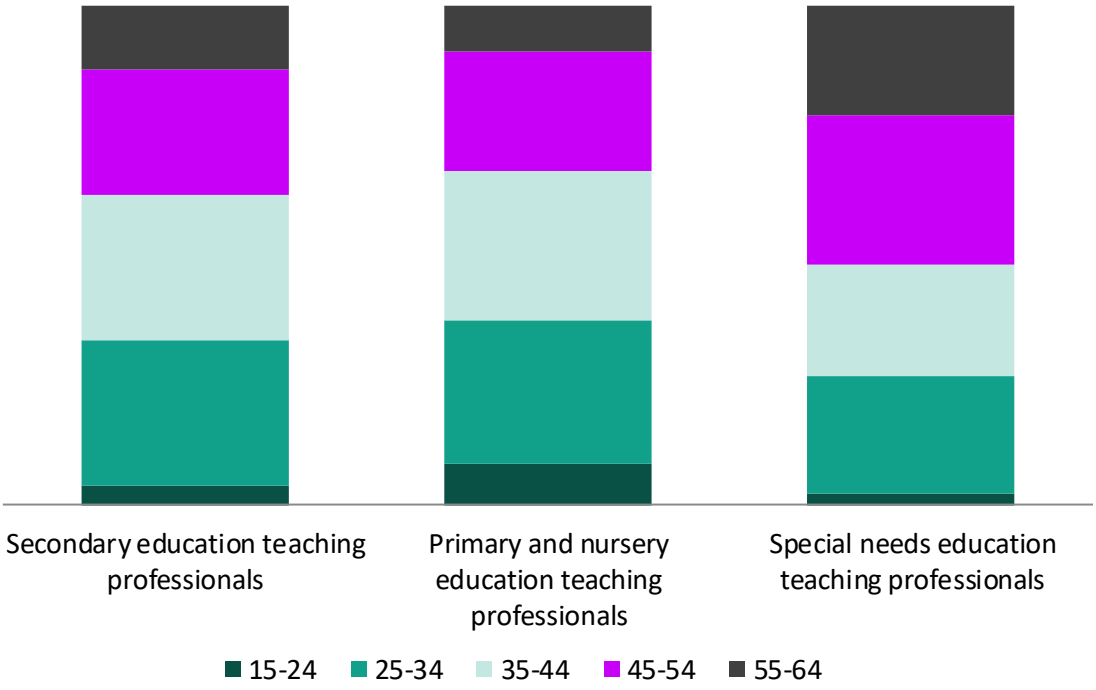
In general, the age profile of the teaching workforce is more uniformly distributed than the one for childcare workers. The same is true when comparing male and female age profiles.

Figure 9. Age profile by sex, 2018



Looking at the age profile of each occupation, we find particularly interesting that primary and nursery education professionals have a higher proportion in the youngest cohorts (15-24) while special needs education teachers have a higher proportion of workers in the 55-64 age group.

Figure 10. Age profile by individual occupation type, 2018



Confirming results from other studies, the LFS shows that a higher percentage of the teaching workforce is male (26.7 per cent in 2018 v 7.4 per cent male childcare workers). While the percentage of male nursery and primary teachers and SEND teachers is well below the group average (at 15.8 per cent and 21.6 per cent), the percentage for secondary teachers is much higher (39.2 per cent). This is a preview of the trend that continues into later stages of the education system: the older the students, the higher the proportion of male teachers.

Ethnicity and country of birth figures for teaching workers are not very different than for childcare workers. In 2018, 91.4 per cent of teachers were White, just one percentage point less than in 2013; 86.3 per cent were born in England in 2018, compared with 85.3 per cent in 2013; and 4.2 per cent were born in other UK countries in 2018, compared to 4.1 per cent in 2013. In 2018, only 2.8 per cent of the teaching workers were born in other European Union countries, pointing to the potential effects of Brexit being less severe than for the childcare sector.

Finally, we looked at the proportion of the workforce with children. In 2018, almost 52 per cent had children below age 19, up from 47.8 per cent in 2013. Of those with children, just one out of five teaching workers had children under the age of four in 2013-18, about five percentage points higher than for childcare workers.

Workers in competing occupations

The group of workers in the competing occupations is relatively small compared to the childcare and teaching workforce. Therefore, we will not be looking at data disaggregated by individual unit or else we would have small sample sizes. In addition, the goal of this analysis is to investigate how this group fares compared to the childcare worker group as a whole.

Between 2008 and 2010, the number of people working as hairdressers, beauticians and related occupation decreased by 1.7 per cent, from 184,900 to 181,700. In the following years, the trend changed to an increase of 5.1 per cent, from just over 200,000 in 2013 to about 219,100 in 2018.

On average, this group is younger than both the childcare and teaching workforce, the average age being just under 35 in 2018. In parallel with previous sections, we looked at the age profile and how it has changed over time. Figure 11 shows an age profile that is different from that of the childcare workforce. Between 2013 and 2018 the percentage in the youngest age cohort (15-19) has decreased but it remains higher than for the childcare workforce, and even more so for the teaching workforce (8.1 per cent v 3.7 per cent and 0.3 per cent, respectively). Hairdressers and beauticians are concentrated in the 20-44 age groups, with a much smaller proportion of workers in the older cohorts. While 25.3 per cent of childcare workers and 22.9 per cent of the teaching workers are in the 50-64 age range, only 12.6 per cent of the workers in the competing jobs are in this age group. In other words, if these occupations are career alternatives to childcare, they seem to attract mostly younger cohorts.

Figure 11. Age profile of workers in competing occupations, 2008-10 (includes managers) and 2013-18 (excludes managers)

	2008	2009	2010		2013	2014	2015	2016	2017	2018	
15-19	18.1%	17.3%	18.0%	↓	11.5%	10.0%	9.7%	10.3%	8.7%	8.1%	↓
20-24	18.1%	18.6%	18.3%	↑	20.8%	19.2%	15.8%	14.3%	15.6%	15.5%	↓
25-29	11.9%	12.2%	12.0%	↑	15.8%	16.0%	16.8%	17.8%	17.6%	15.9%	↑
30-34	9.8%	9.4%	9.8%	→	11.5%	12.5%	13.1%	14.0%	14.9%	14.9%	↑
35-39	12.7%	12.8%	12.1%	↓	9.5%	10.2%	10.8%	10.3%	10.7%	12.7%	↑
40-44	10.9%	11.5%	10.9%	→	10.5%	12.2%	12.0%	11.6%	10.2%	10.7%	↑
45-49	5.6%	6.2%	6.6%	↑	7.6%	8.0%	9.4%	10.3%	10.3%	9.7%	↑
50-54	5.3%	5.0%	5.6%	↑	5.9%	5.4%	6.6%	6.3%	6.6%	6.1%	↑
55-59	5.6%	4.8%	4.1%	↓	4.0%	4.5%	3.6%	3.5%	3.3%	4.1%	↑
60-64	2.0%	2.2%	2.6%	↑	2.8%	2.1%	2.1%	1.5%	2.3%	2.4%	↓

While these occupations employ a high percentage of female workers, it is interesting to notice that the proportion of males working in these professions is double that in childcare (13.7 per cent v 7.4 per cent). In addition, it has increased from the 2008-10 period, when it went from 11.4 per cent to 9.4 per cent.

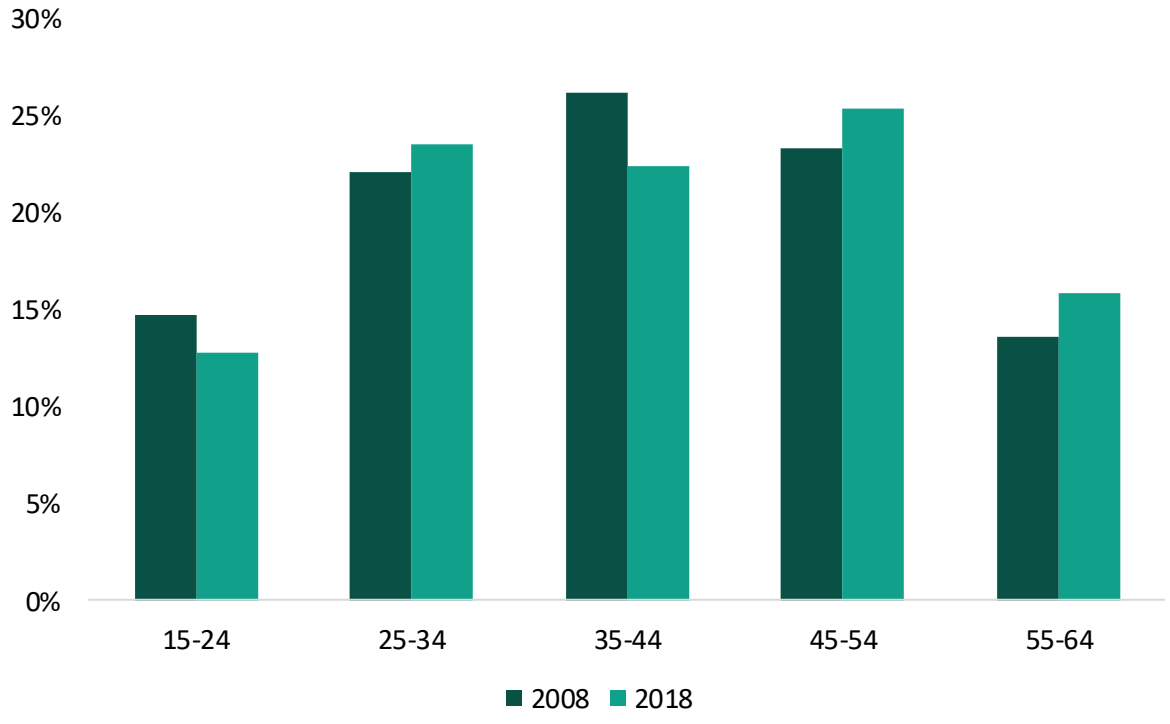
In 2018, 86.7 per cent of hairdressers and beauticians were White, about four percentage points less than in 2013. Similarly, 81.2 per cent were born in England compared to 87.3 per cent in 2013, and 1.1 per cent were born in other UK countries v 1.4 per cent in 2013. Also, 5.4 per cent were born in a European Union country.

Finally, we looked at the workforce with young children. In 2018, 56.4 per cent of hairdressers and beauticians had dependent children below age 19 compared to 58.7 for childcare workers and 52 per cent of teaching workers. This proportion increased by 5.1 percentage points since 2013. Of those with children, 21.8 per cent of the workers in competing jobs had children under the age of four in 2018, a proportion that increased only slightly across the years and is about five percentage points higher than for childcare workers, while being similar to the proportion for teaching workers.

All women workers

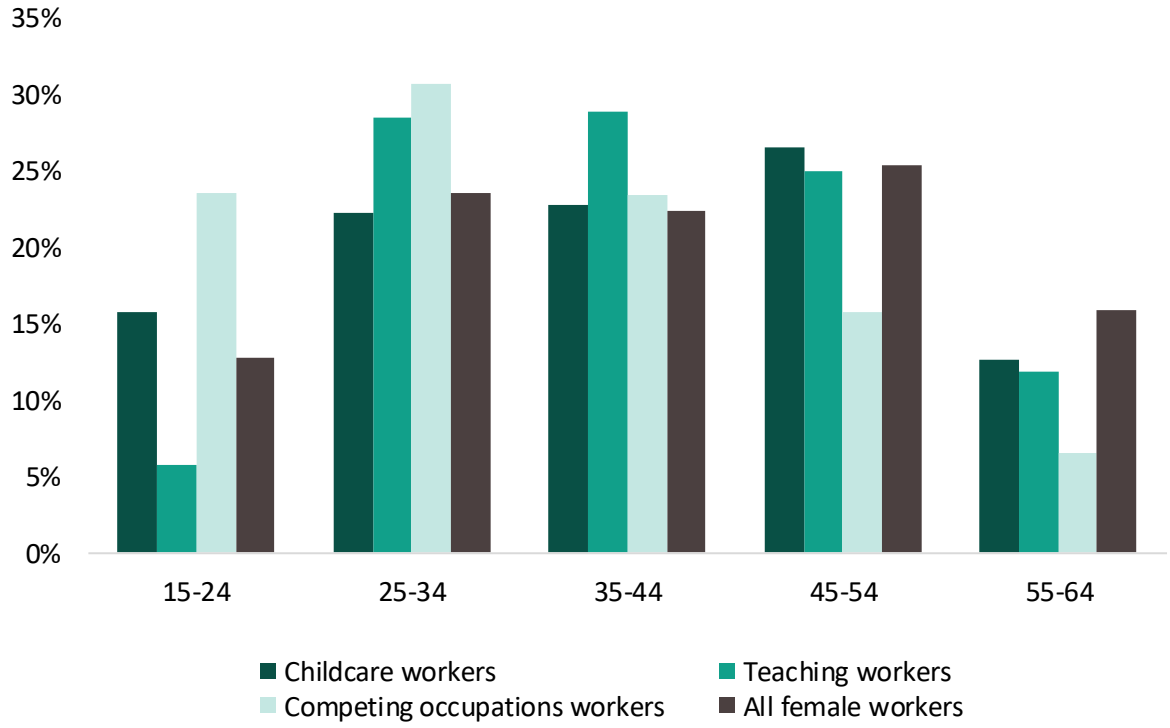
In 2018, there were approximately 12,243,000 women in the workforce, compared to 11,116,000 in 2008, a 10.1 per cent increase. While the average age of working women has remained relatively stable at around age 40, the age profile of the female workforce has shifted towards a higher concentration in the 25-34 and 50-64 age groups. Figure 12 shows the change in the age profile from 2008 to 2018 in detail. While the female workforce is generally getting older, the age groups 35-44 present an exception. However, when we look at the absolute numbers, the 40-44 age group is the only one that experienced an absolute decrease.

Figure 12. Age profile of the female workforce, 2008-18



A comparison of the age profile across all four occupational groups reveals that the childcare workforce is not very different from the general female workforce. Instead, teaching workers are more concentrated in the central age groups and the people working in competing occupations are concentrated in the younger cohorts.

Figure 13. Age profile of all four groups, 2018



The female workforce is predominantly White (86.7 per cent in 2018 v 88.9 per cent in 2013 and with similar figures in the 2008-10); with proportions similar to the ones we have observed for childcare, teaching and workers in competing occupations. In 2018, 78.8 per cent of female workers were born in England, 2.5 per cent in other UK countries, and 7.9 per cent of the female working population was born in other European Union countries.

Finally, we looked at the percentage of working women with dependents. In 2018, 45.9 per cent of the female working population had dependent children below age 19, a very small increase from 44.5 per cent in 2008. The proportion of working women with children age zero to four increased from 13.5 per cent in 2008 to 15.8 in 2018. Given the many policies to expand and improve early years provision enacted in the last decade, and the decreasing percentage of working women in the age range 35-44, this small increase makes us question the effectiveness of successive policies in helping mothers enter, re-enter or stay in the workforce during the first years of their children's lives.

To sum up, the four occupational groups considered in this analysis present strong similarities in terms of some demographic characteristics, such as ethnicity and country of birth. Instead, we observed important differences when we disaggregate the age profile or look into male workers participation in each individual occupation. In general, childcare workers seemed to share more characteristics with the general female working population than with the teaching workers or hairdressers and beauticians.

Chapter 2. Qualifications and training

In this chapter we discuss the most relevant LFS variables related to qualifications and training. Among others, we look into the highest level of education and national vocation qualifications (NVQ) achieved, whether employees are working towards a higher qualification, and whether the employer has supported them in getting training. As in the previous chapter, when results are significant and comparisons appropriate, we discuss changes over time and across occupation groups.

Childcare workers

Starting our analysis from the highest qualification held, we find that 25.1 per cent of the childcare workers have a degree or equivalent education level, 13 per cent have a higher education level, 36 per cent have a GCE, A-level or equivalent, 18.8 per cent have GCSE grades A*-C or equivalent, and only 1.5 per cent have no qualification at all (see figure 20 for a comparison of the highest level of qualification across all four occupational groups).[vi] Once we disaggregate by individual occupation, though, the picture is very different.

Figure 14. Highest level of education by occupation, 2018

Highest level of education	Nursery nurses and assistants	Childminders and related occupations	Playworkers	Teaching assistants	Educational support assistants	Total
Degree or equivalent	16.5%	20.6%	19.3%	31.5%	28.1%	25.1%
Higher education	11.1%	9.0%	7.0%	15.4%	14.6%	13.0%
GCE, A-level or equivalent	46.9%	37.3%	38.8%	29.7%	32.5%	36.0%
GCSE grades A*-C or equivalent	19.2%	18.2%	25.7%	17.8%	19.3%	18.8%
Other qualifications	4.1%	10.2%	7.5%	2.7%	2.6%	4.2%
No qualification	0.5%	3.4%	0.0%	1.2%	2.1%	1.5%
Did not know	1.7%	1.3%	1.8%	1.6%	0.7%	1.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Teaching assistants and educational support assistants stand out for being more likely to be qualified at higher education level or above. On the other hand, nursery nurses and assistants, childminders and people in related occupation, and playworkers have a higher proportion of workers with GCE, A-level or equivalent. Also, while childminders and playworkers have the largest percentage of the

[vi] It is not possible to further disaggregate data for 'degree' from 'equivalent education level'. Examples of higher education qualifications are: NVQ Level 4, diploma in higher education, teaching (further, secondary and primary education), and nursing. A complete list can be found in the user guidance section of Office For National Statistics, 2017, Graduates in the UK labour market: 2017, which can be access at http://dera.ioe.ac.uk/30577/1/Graduates%20in%20the%20UK%20labour%20market%202017.pdf.

workers with low qualifications (GCSE grades A*-C and below), nursery nurses and assistants concentrate at Level 3 GCE. Small sample sizes precluded a sound estimation of the number of workers with a degree in early years education. However, a superficial look at the data allowed us to observe that the majority of childcare workers reported one the following as area of study: teacher training and education science, education science, training for pre-school teachers, training for teachers at basic levels, nursing and caring, child care and youth services, or social work and counselling.

The percentage of childcare workers with a degree or equivalent level of qualification has increased from 18.2 per cent to 25.1 per cent. This trend is common to each occupation, but particularly strong for teaching assistants. Also, the percentage of childcare workers with GCSE grades A*-C or equivalent has decreased from 23.4 per cent to 18.8 per cent, a trend that was driven by teaching assistants and educational support assistants.

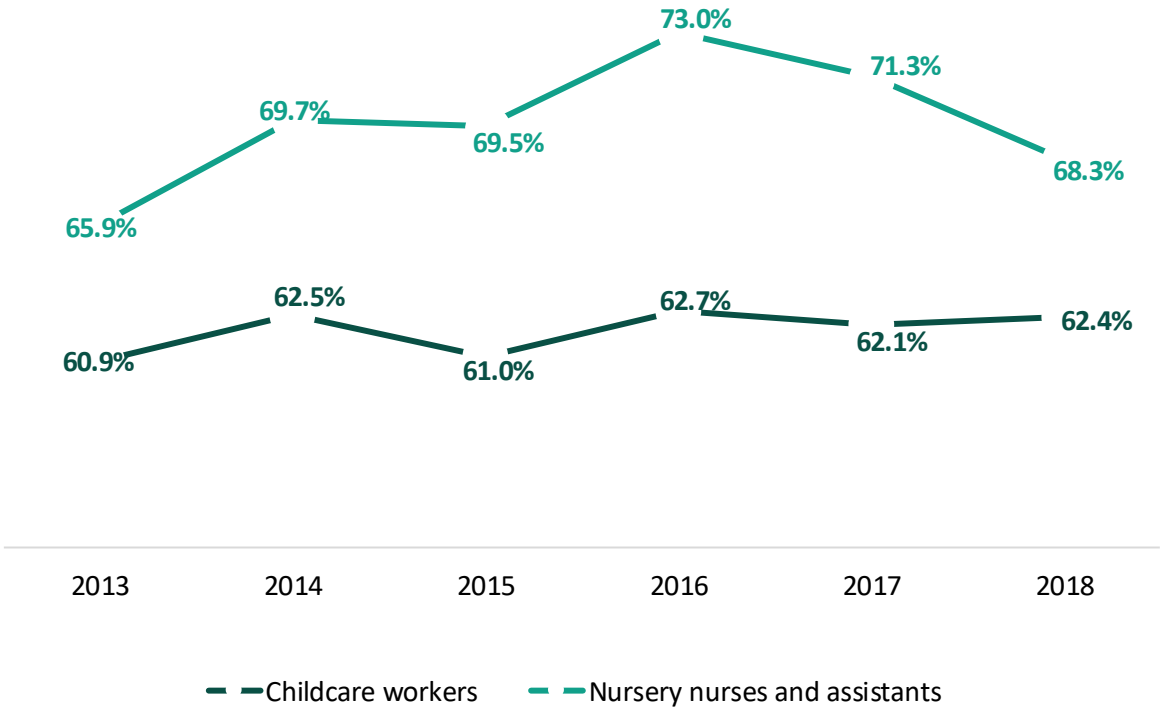
Over 40 per cent of the childcare workforce holds NVQs rather than degrees or higher education qualifications; therefore, we checked for the highest NVQ held. In 2018, 25.7 per cent of the childcare workers holding an NVQ were qualified at Level 1 or 2, 62.4 per cent were qualified at Level 3, and only 5.8 per cent were qualified at Level 4 or above, with some variation across occupations.

Figure 15. Highest NVQ by occupation, 2018

Highest NVQ Level	Nursery nurses and assistants	Childminders and related occupations	Playworkers	Teaching assistants	Educational support assistants
Level 1	0.5%	2.3%	2.1%	1.2%	2.5%
Level 2	20.1%	20.4%	27.3%	27.1%	28.1%
Level 3	68.3%	62.3%	59.7%	58.5%	60.2%
Level 4	3.9%	5.9%	4.6%	6.4%	3.8%
Level 5	1.7%	0.7%	0.0%	0.0%	1.1%
Other	1.7%	1.4%	0.0%	1.1%	1.1%
Don't know	3.9%	7.1%	6.4%	5.7%	3.3%

Trends over the last few years have been for a slight increase in the percentage of childcare workers with a Level 3 and Level 5 qualification and a decrease in the proportion with a Level 2 and Level 4 qualification. The increase in the proportion Level 3 qualified workers seems to have been driven by nursery nurses and assistants, whose percentage increased from 65.9 per cent in 2013 to 68.3 per cent in 2018. However, this five-year trend hides the fact that an initial increase from 65.9 per cent in 2013 to 73 per cent in 2016 was followed by a decrease to 71.3 per cent in 2017 and to 68.3 per cent in 2018. This trend seems to follow the introduction in 2014, and repeal in 2017, of the GCSE requirements for Level 3 practitioners to count in early years ratios, as pointed out in other research.[19]

Figures 16. Proportion of nursery nurses and assistants with a L3 qualification compared with childcare workers as a group, 2013-18



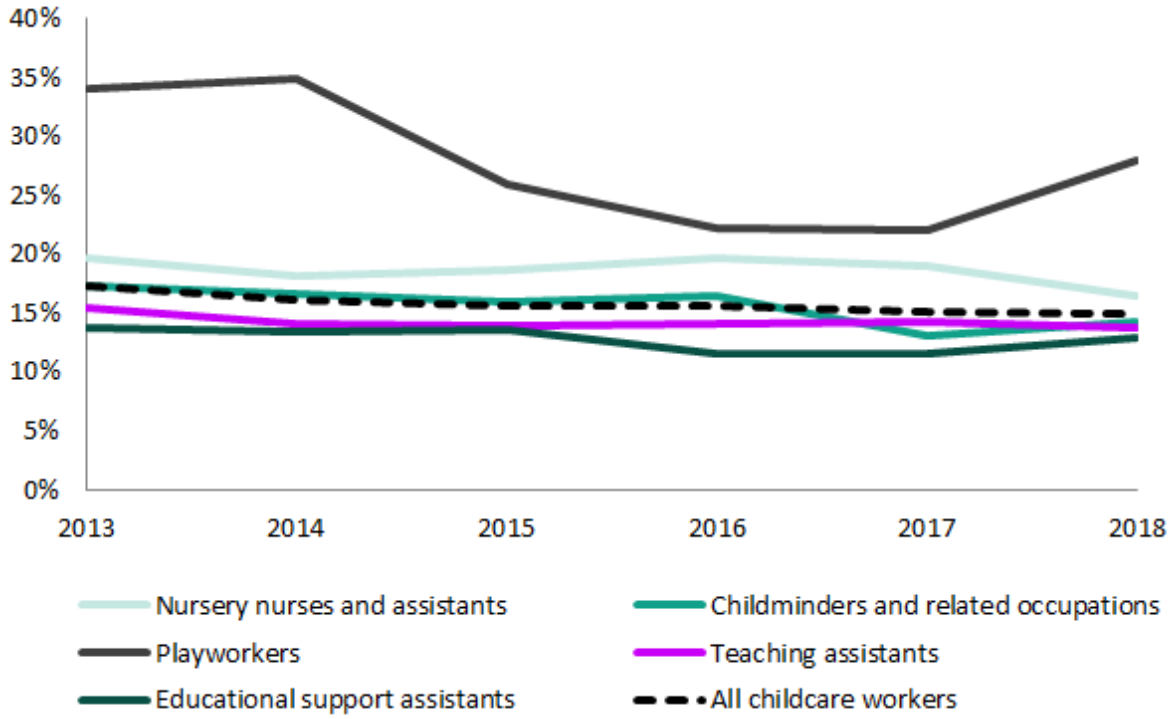
These trends started some years ago. Both the increase in the percentage of the childcare workforce with a degree or equivalent qualification and the decrease in the percentage with GCSE grades A*-C or equivalent, were already set in motion in 2008, when the proportions were 11.8 per cent and 30.5 per cent, respectively (v 25.1 per cent and 18.8 per cent in 2018). Similarly, the percentage of the childcare workforce with a L3 qualification had slightly increased from 55.9 per cent in 2008 to 56.7 per cent in 2010, while L2 and L4 proportions had slightly decreased.

To understand how the childcare workforce fares in terms of opportunities to upskill we looked into a few variables available in the LFS, such as: whether they are working or studying towards a higher qualification, whether they had job related training in the previous three months and if the employer was supporting the training. Below, we focus on the most important results.

The proportion working towards a higher qualification has changed quite significantly over time, starting at 22.7 per cent in 2008-10 and dropping to 17.2 per cent in 2013 and 14.9 per cent in 2018. This could be due to the recoding of people in managerial position, but the 2013-18 trend suggests that there could be more to it.

Playworkers drive the results, with 28 per cent of them working or studying towards a higher qualification versus 34 per cent in 2013, although we need to keep in mind that playworkers are only a relatively small proportion of the whole childcare workers group. On the other hand, the proportion of educational support assistants working or studying towards a higher qualification, while smaller to begin with (13.7 per cent in 2013) has suffered a minor decrease, down 12.9 per cent in 2018.

Figure 17. Percentage of childcare workers studying towards a higher qualification by occupation, 2013-18



Finally, 35.9 per cent of childcare workers attended job-related training in the three months prior to the survey, down from 38.8 per cent in 2013. Once again, this trend started in previous years, when the proportion had already decreased from 42.3 per cent in 2008 to 41.1 in 2010.

Teaching workers

Nine in 10 teachers hold a degree or an equivalent qualification in 2013-18, predictably so given the requirements to work in state schools established by law. We also found a significant decrease in the percentage of teachers with a higher education level, which dropped from seven per cent in 2013 to 3.3 per cent in 2018. Once again, we get a different picture when we disaggregate the data by individual occupation. Special needs education teaching professionals, in particular, appear to be a very different group in terms of qualification levels, with a much bigger percentage educated at higher education (9.8 per cent), GCE (6.3 per cent) and GCSE or equivalent level (3.6 per cent) but fewer people educated at degree level (79.7 per cent) compared to secondary teachers, and primary and nursery teachers. Figure 18 provides the details for each occupation in this group.

Figure 18. Highest level of education by occupation, 2018

Highest level of education	Secondary education teaching professionals	Primary and nursery education teaching professionals	Special needs education teaching professionals	Total
Degree or equivalent	95.6%	92.9%	79.7%	92.9%
Higher education	2.2%	3.1%	9.8%	3.3%
GCE, A-level or equivalent	1.4%	1.6%	6.3%	1.9%
GCSE grades A*-C or equivalent	0.3%	1.2%	3.6%	1.0%
Other qualifications	0.1%	0.4%	0.3%	0.3%
No qualification	0.1%	0.1%	0.0%	0.1%
Did not know	0.4%	0.7%	0.3%	0.5%

Once again, we looked into the 2008-10 data to get a sense of whether the trends were similar across the two time periods of our analysis. The trends in the highest level of qualifications we observed for 2013-18 do seem to have started in previous years. In 2008, 82.3 per cent of the teaching workers had a degree or equivalent qualification versus 86.4 per cent in 2010 (and 92.9 per cent in 2018). Also, while 13.1 per cent had a higher education degree in 2008, only 9.9 per cent did so in 2010 and 3.3 per cent in 2018. This decrease affected all individual occupations that make up this group in similar proportions.

Looking into NVQs is much less relevant for teachers. As many hold a degree, the question applies to only about six to seven per cent of the sample each year. Of those few holding an NVQ in 2018, 28.6 per cent were qualified at Level 1 or 2, 45.4 per cent were qualified at Level 3, and 5.5 per cent were qualified at Level 4 or 5, with only slight variations across the years.

In 2018, only 8.6 per cent of teachers were working or studying towards a higher qualification, with special needs education teachers leading the way with over 15.5 per cent working towards a higher qualification, compared to only 8.8 per cent of secondary teachers and seven per cent of primary and nursery teachers. The proportion for the whole group has decreased by two percentage points since 2013, but it has remained stable for special needs education teachers. Between 2008 and 2010, the trend was in the opposite direction, with proportions slightly increasing.

Finally, 44.7 per cent of teachers attended job-related training courses in the three months before the 2018 survey, a slight decrease from the 45.7 per cent who attended in 2013. This decreasing trend had started early on and had gone from 52.3 per cent in 2008 to 50.5 per cent in 2010.

Workers in competing occupations

People working in competing occupations have, on average, low levels of education (see figure 20 for a comparison across all four occupational groups). In 2018, 50.5 per cent had a GCE, A-level or equivalent qualification, 22.5 per cent had a GCSE grades A*-C or equivalent and only smaller proportions had a degree or equivalent (7.4 per cent) or a higher education qualification (6.2 per cent).

The data for this group shows that some important changes have occurred over the last few years:

- The proportion of workers with a degree or equivalent qualification has increased from 3.8 per cent in 2013 to 7.4 per cent in 2018.
- The proportion with GCE, A-level or equivalent qualification has remained relatively stable.
- The proportion of workers with GCSE grades A*-C or equivalent has decreased from 27.6 per cent in 2013 to 22.5 per cent in 2018.
- The proportion of people without qualification slightly increased from 2.3 per cent in 2013 to 3.7 per cent in 2018.

On the other hand, there were no significant changes in the 2008-2010 period.

Similar to childcare workers, a relatively high percentage of hairdressers and beauticians hold NVQs. Of this group, 33.5 per cent hold a Level 2, 53.3 per cent hold a Level 3 and only very small percentages hold NVQs at other levels in 2018. Since 2013 the proportion of workers with Level 2 qualifications has decreased by almost seven percentage points and that with Level 3 has increased by 10 percentage points. NVQs levels were not much different in 2008-10 and only anticipated later trends.

Finally, we looked into whether people working in competing occupations have the opportunity to upskill. In 2018, only 11 per cent were working or studying towards a higher qualification. This is not very different from the percentages for childcare workers. What is striking is that this proportion has decreased to a half since 2008, when 20.2 per cent were working towards a higher qualification level. In addition, only 16.1 per cent of workers in this group have had job related training in the previous three months, compared to 35.9 per cent of childcare workers and 44.7 per cent of teaching workers. In this case too, the proportion has decreased significantly since 2008, when 27.5 per cent of hairdressers and beauticians had had job related training in the previous three months.

The general picture for workers in competing occupations is not positive. Employment conditions and professional development opportunities for hairdressers and beauticians are not much better, and in some cases worse, than those for childcare workers. However, the consequences of childcare workers not having Continuing Professional Development are arguably far more significant from both an individual (child and family) and societal perspective.

All women workers

We start this section by comparing the age at which workers in different occupational groups have completed full-time education. This can be considered an approximation of the level of education. For example, if a small percentage of workers have completed full-time education at age 21, it is more likely that, on average, the group has higher qualification levels as more people might be working towards getting a degree. This is a very imprecise approximation, of course, but we wanted to check whether the four groups varied significantly. Figure 19 shows that indeed they do. In particular, a much higher percentage of the childcare workers and workers in competing jobs complete full-time education at a very young age, compared to teaching workers and the general female workforce population.

Figure 19. Age when completed full-time education by occupational group, 2018

Age when completed full-time education	Childcare workers	Teaching workers	Competing jobs workers	All women workers
16	33.6%	5.7%	45.1%	29.9%
18	65.8%	18.5%	75.8%	56.0%
21	83.5%	47.3%	92.4%	76.0%

Next, we look into the highest level of qualification held by the female workforce. In 2018, 37.1 per cent hold a degree or equivalent qualification, 9.2 per cent a higher education qualification, 21.1 per cent a GCE, A-level or equivalent, and 20.8 per cent a GCSE grades A*-C or equivalent. Between 2008 and 2018, the most significant changes were:

- The proportion of working women without qualification decreased from 7.9 per cent to 3.6 per cent.
- The proportion holding a degree increased from 23.3 per cent to 37.1 per cent.
- The proportion holding GCSE grades A*-C or equivalent decreased from 27.1 per cent to 20.8 per cent.

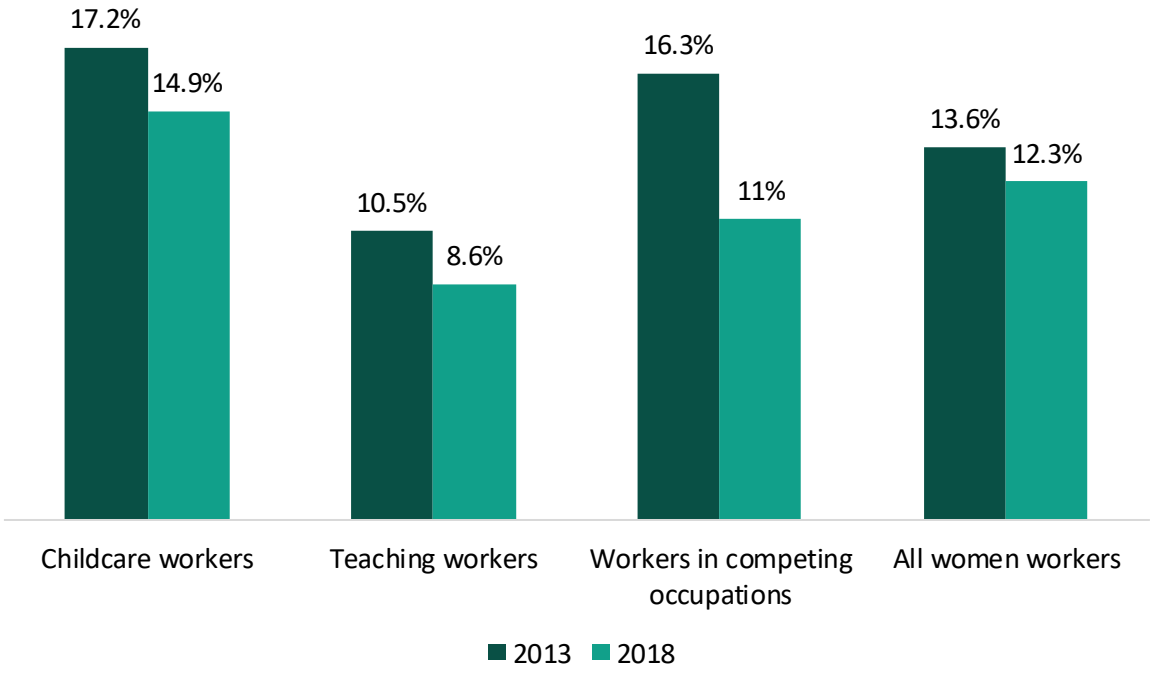
In figure 20 we compare 2018 data across the four occupational groups. Teaching workers stand out as the highest qualified group. On the other hand, while we often associate childcare workers with hairdressers and beauticians, the two groups are not equal in terms of qualification levels, with childcare workers having on average slightly higher qualification levels.

Figure 20. Highest level of qualification by occupational group, 2018

Highest level of qualification	Childcare workers	Teaching workers	Competing jobs workers	All women workers
Degree or equivalent	25.1%	92.8%	7.4%	37.1%
Higher education	13.0%	3.3%	6.2%	9.2%
GCE, A-level or equivalent	36.0%	1.9%	50.5%	21.1%
GCSE grades A*-C or equivalent	18.8%	1.0%	22.5%	20.8%
Other qualifications	4.2%	0.3%	7.4%	6.7%
No qualification	1.5%	0.1%	3.7%	3.6%

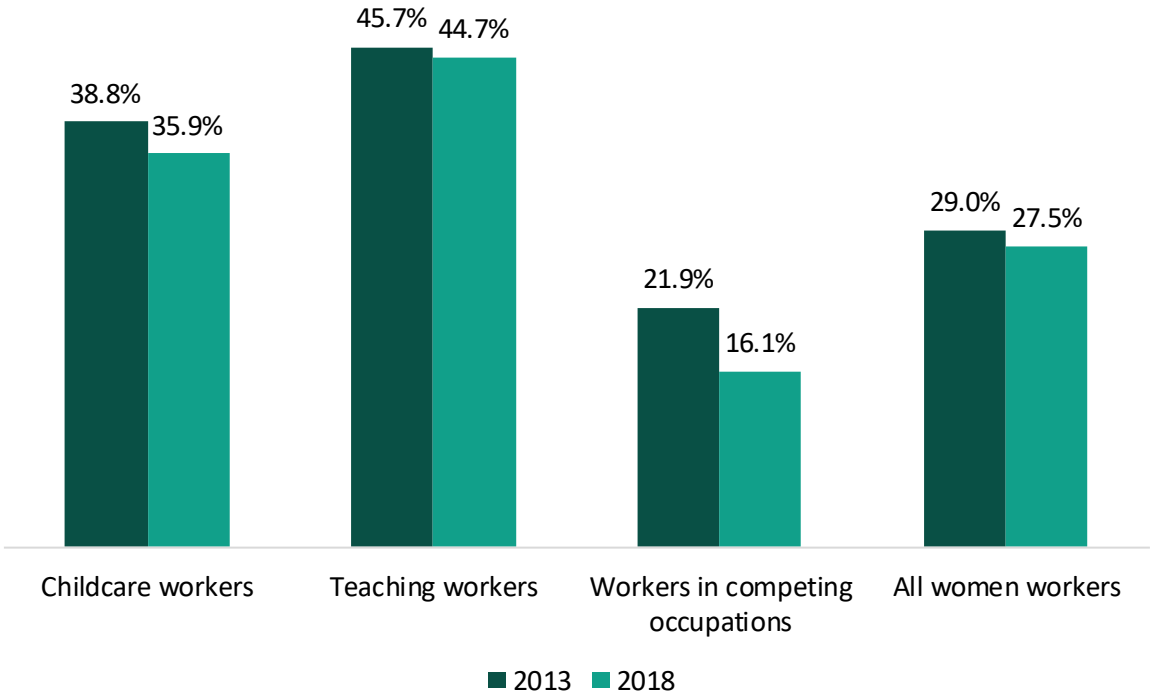
Finally, we looked at upskilling opportunities for working women. In 2018, 12.3 per cent were studying or working towards a higher qualification, only slightly lower than the 13.6 per cent who were upskilling in 2013, but down by about four percentage points from the 2008-10 period.

Figure 21. Percentage of workers working or studying towards a qualification, 2013-18



Also, 27.5 per cent of female workers had job related training in the three months preceding the 2018 survey, a slight decrease from 29 per cent in 2013.

Figures 22. Percentage of workers who had a job-related training or education in the previous three months, 2013-18



Over the 2013-18 period, all four groups have seen a decrease in both the percentage of workers studying or working towards a higher qualification and the percentage of people who had recent

job-related training. However, given the lower education levels of the childcare workforce to begin with, and given the importance of training and CPD for high quality early years provision, these declining trends in the opportunities to upskills are more worrisome for childcare workers than for other segments of the workforce.

Chapter 3. Employment conditions

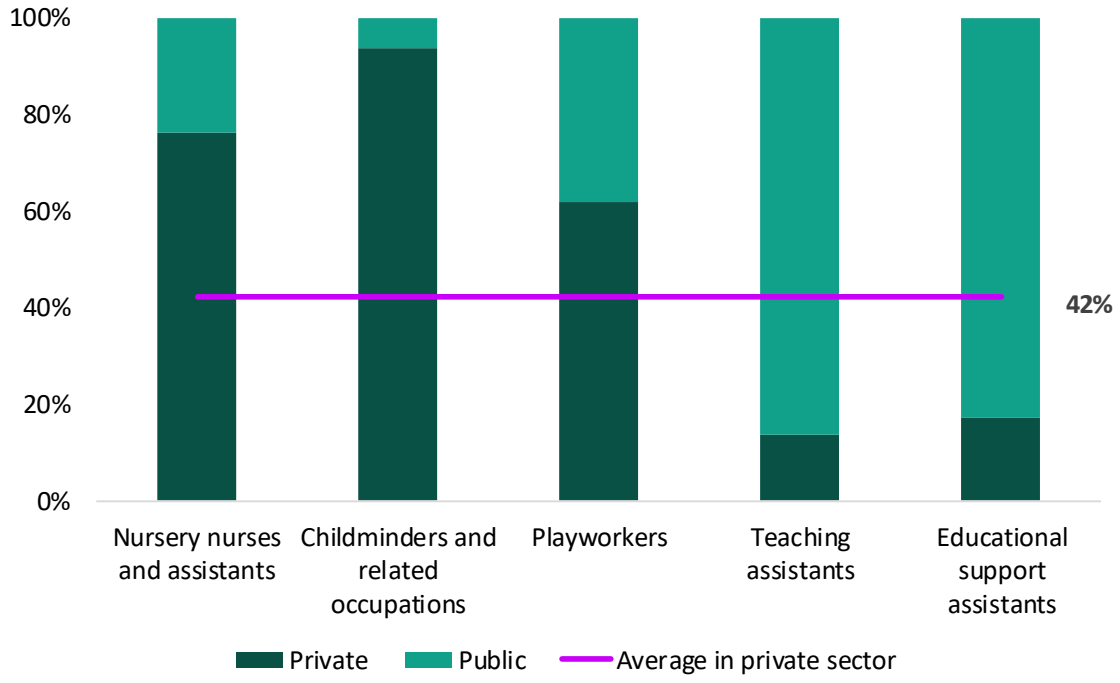
In this chapter, we report on variables related to employment conditions. We explored a wide variety of questions that could help us refine our picture of the four occupational groups. Some of the key variables are: the employment sector (public v private); whether respondents work full-time or part-time; whether the job is permanent; and whether people have a second job. We also investigated pay and other possible indicators of the financial situation of workers, such as whether they are claiming state benefits or tax credits.[vii]

There is a wealth of information about job status and conditions of employment in the LFS. However, by looking at individual occupations we encountered sample size issues. In the sections below, we present results only when questions applied to a big enough proportion of the group under consideration.

Childcare workers

More than half of the childcare workers are employed in the public sector (57.5 per cent in 2018). At first glance, this figure contradicts other early years surveys that find the majority of the workforce employed in private, voluntary and independent providers.[viii] However, once we disaggregate by individual occupation, we can see that teaching assistants and educational support assistants once again are a very different sub-group.

Figure 23. Percentage of childcare workers employed in the private or public sector by occupation, 2018



[vii] See footnote (i)

[viii] See, for example, the 2018 Survey of childcare and early years providers, which found that 59 per cent of full-time staff are employed in group-based settings. The main summer can be access at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752919/Survey_of_Childcare_and_Early_Years_Providers_2018_Main_Summary3.pdf

Changes over the years were small. In 2013, 39 per cent of the childcare workforce was employed in the private sector. The increase to 42 per cent in 2018 was driven almost exclusively by teaching assistants and educational support assistants, whose percentages increased from 8.7 per cent to 13.6 per cent and from 13.8 per cent to 17 per cent, respectively. The other occupations did not see nearly as dramatic a change.

Next, we look at employment conditions. In 2018, 55.4 per cent of the childcare workforce was employed on a full-time basis, an increase of 4.4 percentage points since 2013. Playworkers are the only group that significantly deviates from the group average, with less than one fifth employed full-time.

It is interesting to notice that among those working part-time, 75.1 per cent do so out of choice, while less than 13 per cent do so because they cannot find a full-time job, 8.1 per cent because they are students and three per cent because they are ill or disabled.

Despite what we hear about the precariousness of the childcare profession, the LFS indicates that:

- Four out of five childcare workers have a permanent job.
- Only one per cent are agency workers.
- 6.3 per cent are looking for a different or additional paid job or business (with some variations across individual occupations).
- 6.4 per cent have a second job, down from 7.7 per cent in 2013.

In 2018, 44 per cent had been with the same employer for at least five years and 5.9 per cent for 20 years or more. These proportions are lower than those for the teaching workers (49 per cent and 8.6 per cent respectively), hairdressers (46.4 per cent and 11.7 per cent respectively) and all women workers (46.7 per cent and 9.4 per cent respectively). We did not observe any major changes over time. However, we did notice that, on average, the proportion of nursery nurses and assistants, childminders and playworkers that had been with the same employer for at least five years is lower than the proportion of teaching assistants and educational support assistants.

Finally, we look into the financial well-being of the group by analysing gross hourly pay, the difference in pay between employment sectors (private v public) and the proportion of the workers who claim state benefits or tax credits.

The childcare workforce is generally poorly paid. The mean gross hourly pay in 2018 was £8.20. Most importantly, pay has decreased by 4.7 per cent in real terms since 2013, when childcare workers were paid on average £8.60 per hour. This contrasts with the small positive change that occurred in the 2008-10 period, when gross hourly pay in real terms had increased by 2.1 per cent. Because of the differences across individual occupations, for example in terms of education levels, we checked the hourly pay by job. We find some significant variations, with average pay per hour being:

- £7.70 for nursery nurses and assistants.
- £8.10 for childminders and people in related occupations.
- £7.00 for playworkers.
- £8.20 for teaching assistants.
- £9.00 for educational support assistants.

The decrease in real pay has been of different magnitude for each occupation. The per cent falls have been the following:

- 0.5 per cent for nursery nurses and assistants.
- 7.9 per cent for childminders and people in related occupations.
- 10.7 per cent for playworkers.
- 7.2 per cent for teaching assistants.
- 4.3 per cent for educational support assistants.

In 2018, childcare workers employed in the public sector were paid more than those employed in the private sector, with an average gross hourly pay of £8.50 v £7.70 in the private sector. However, while the gross hourly pay for private employees has increased by 4.9 per cent since 2013, it has decreased by 7.2 per cent for public employees. This is in contrast with the trend in 2008-10, when both pay rates had seen a slight increase.

The low hourly pay is in line with our finding that, in 2018, 44.5 per cent of childcare workers were claiming state benefits or tax credits. This represents a nine percentage points decrease since 2013 and continues a declining trend started in 2008, when 57.5 per cent of the childcare workforce claimed state benefits or tax credits. Nevertheless, these figures are much higher than those for the other groups we analysed in this study (see below) and raise serious concerns about the financial well-being of childcare workers.

Teaching workers

A much bigger proportion of teaching workers is employed in the public sector compared to childcare workers (81.7 per cent v 57.5 per cent in 2018, respectively), with relatively low variation across the three individual occupations, as figure 24 shows.

Figure 24. Percentage of teaching workers employed in the private or public sector by occupation, 2018

These proportions have changed since 2013, when only 14.1 per cent of teaching workers were employed in the private sector. From 2013 to 2018 we observe:

- An increase in the percentage of secondary teachers working in private sector from 15.2 per cent to 20.7 per cent.
- An increase in the percentage of primary and nursery teachers working in private sector from 12.1 per cent to 14.4 per cent.
- An increase in the percentage of special needs education teachers working in the private sector from 19.7 per cent to 25.2 per cent.

In 2018, three quarters were employed on a full-time basis, a proportion that has remained relatively stable across the years. The proportion is slightly smaller in the case of special needs education teachers, with 66.6 per cent of the latter employed full-time versus 79.2 per cent of secondary teachers and 72.6 of primary and nursery teachers. These proportions are much higher than we have seen for the childcare workforce; therefore, only a small sample was asked for the reason for working part-time, making population estimates unreliable. However, we wanted to get a sense of whether the reasons were similar to the case of childcare workers. The data confirmed that the majority of teaching workers employed part-time did so because they chose to. This also seems to support the suggestion of giving more opportunities to teachers for part-time work as part of a solution to the current retention crisis and high workload faced by schools in England.

Other questions included in the LFS point to the fact that:

- Nine out of 10 teaching workers have a permanent job.
- Only 1.5 per cent are agency workers.
- 6.4 per cent are looking for a different or additional paid job or business, a one percentage point increase since 2013, and
- 5.5 per cent have a second job, up from 4.9 per cent in 2013.

In terms of length of time spent with the current employer, the LFS did not show a very different pattern for teaching workers. In 2018, 48 per cent of the teaching workers have been with the same employer for at least five years, with almost nine per cent having been with the same employer for 20 years or more.

In 2018, the average gross hourly pay was £17.90, a decrease of 7.1 per cent in real terms since 2013, when hourly pay was £19.30, and in contrast with the increase in 2008-10. We need to keep in mind though that in 2011 people working in managerial positions were routed into a different code and that might have had an impact on the change in trends. Also, despite the sharp decrease of the last five years, the hourly pay is still more than double that of childcare workers.

There is some variation across individual occupations, with the most notable being that secondary education teaching professional are paid about £3.00 per hour more than primary and nursery education teaching professionals, and special needs education teaching professionals. In addition, while the latter have seen their gross hourly pay decrease by 11 per cent from 2013 to 2018, secondary education teaching professionals only experienced a 1.6 per cent pay cut in real terms. Finally, the decrease in the gross hourly pay for primary and nursery education teaching professionals and special needs education teaching professionals had already started in 2008-10, when secondary teachers had seen a moderate raise (1.4 per cent).

We also found that in 2018 teachers working in the private or the public sector did not earn a significantly different gross hourly pay (£17.80 v £18.00). This gap used to be much bigger. In 2008-10, hourly pay has slightly increased in real terms for both groups. However, between 2013 and 2018 the two have followed a divergent path, with pay in the private sector increasing by 2.6 per cent and pay in the public sector decreasing by 8.2 per cent.

Finally, in line with a higher hourly pay, a much smaller percentage of teaching workers claims benefits or tax credits, compared to childcare workers. In 2018, this amounted to 29.7 per cent, down from 34.3 per cent in 2013, a trend that started in previous years. While these percentages are not small in an absolute sense, they are about 15 percentage points lower than for the case of childcare workers.

Workers in competing occupations

Almost all the people in competing occupations are employed in the private sector. In 2018, 52.4 per cent worked full-time, compared to 56.3 in 2013 and 53.8 per cent in 2008. These percentages are similar to the ones we found for childcare workers. To continue the parallel, the vast majority (80.4 per cent) of those working part-time do so because they do not want a full-time job.

Other sections of the LFS reveal that in 2018:

- Four per cent of hairdressers and beauticians were looking for a different or additional paid job or business, a percentage that has remained stable across the years.
- 3.6 per cent have a second job, a slight decrease across the years.
- 46.4 per cent have been with the same employer for at least five years, and 11.7 per cent for 20 years or more.

At the beginning of this report, we mentioned that we wanted to use the case of workers in competing occupations as a point of comparison with childcare workers because they are often presented as alternative careers for women. We continue this comparison by looking at how the two groups fare from a financial point of view. In 2018, the gross hourly pay for hairdressers and beauticians was £7.80, 3.8 per cent higher in real terms than the 2013 pay. On average, this group had a very low salary to begin with. In 2008, their gross hourly pay was £7.00 versus £9.00 for childcare workers. However, pay rates for the two groups have been converging over time, with a differential of less than 20p per hour in 2018. In other words, while we have seen that on average childcare workers have higher levels of qualifications compared to hairdressers and beauticians, the wage differential is almost zero, providing very little incentive to childcare workers to upskill or to stay in the sector after reaching higher levels of qualification.

To complete the comparison, 40.5 per cent of workers in competing occupations claimed benefits in 2018, a proportion that has been increasing over time. This still represents a smaller proportion compared to the 44.5 per cent of childcare workers receiving benefits.

All women workers

Almost 70 per cent of the female working population worked in the private sector in 2018, compared to 18 per cent of teaching workers and 42.2 per cent of childcare workers. This proportion has slightly decreased in the past decade, from 66.7 per cent in 2008. Also, 59.5 per cent worked

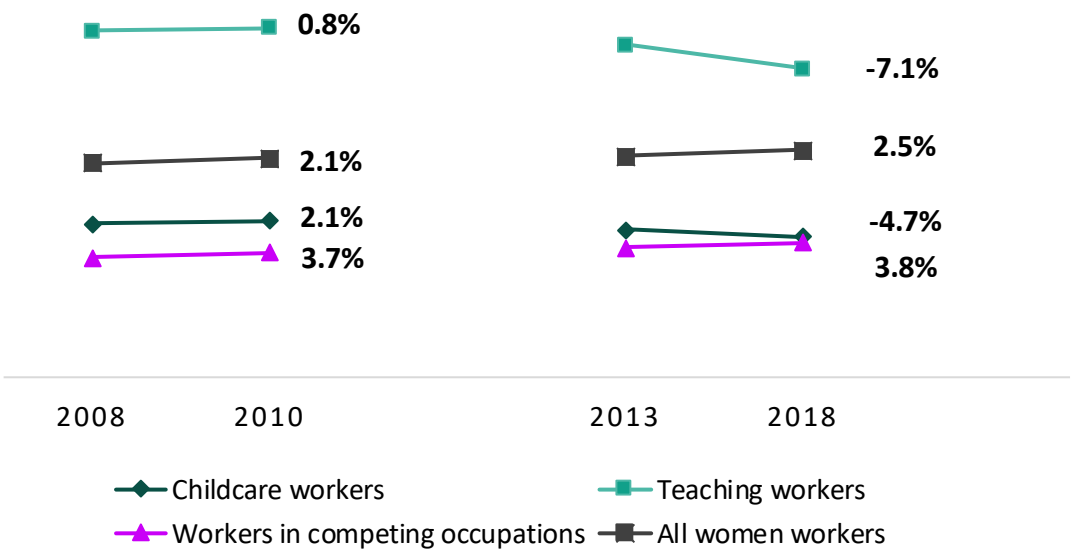
full-time, a two-percentage point increase since 2013, and the majority of those working part-time did so out of preference for a part-time job.

Other questions revealed that:

- The percentage of working women with a permanent job has slightly decreased in the past few years, from 86 per cent in 2008 to 83.6 per cent in 2018.
- The percentage looking for a different or additional paid job or business is 6.5 per cent in 2018, a decrease of 1.2 percentage point from 2013 but a slight increase from 2008, when the proportion was 6.3 per cent.
- Similar proportions to what we observed for childcare and teaching workers have been with the same employers for at least 5 years.
- 46.7 per cent have been with the same employers for at least five years, and 9.4 per cent for 20 years or more.

Once again, we looked at gross hourly pay and its change over time. In 2018, the gross hourly pay for the entire female working population was £13.20, 2.5 per cent higher than in 2013 and 5.9 per cent higher than in 2008. Figure 24 illustrates the different trends across the four occupational groups considered in this analysis.

Figure 24. Change in gross hourly pay by occupation group, 2008-10 (includes managers) and 2013-18 (excludes managers)



Several points are worth remarking:

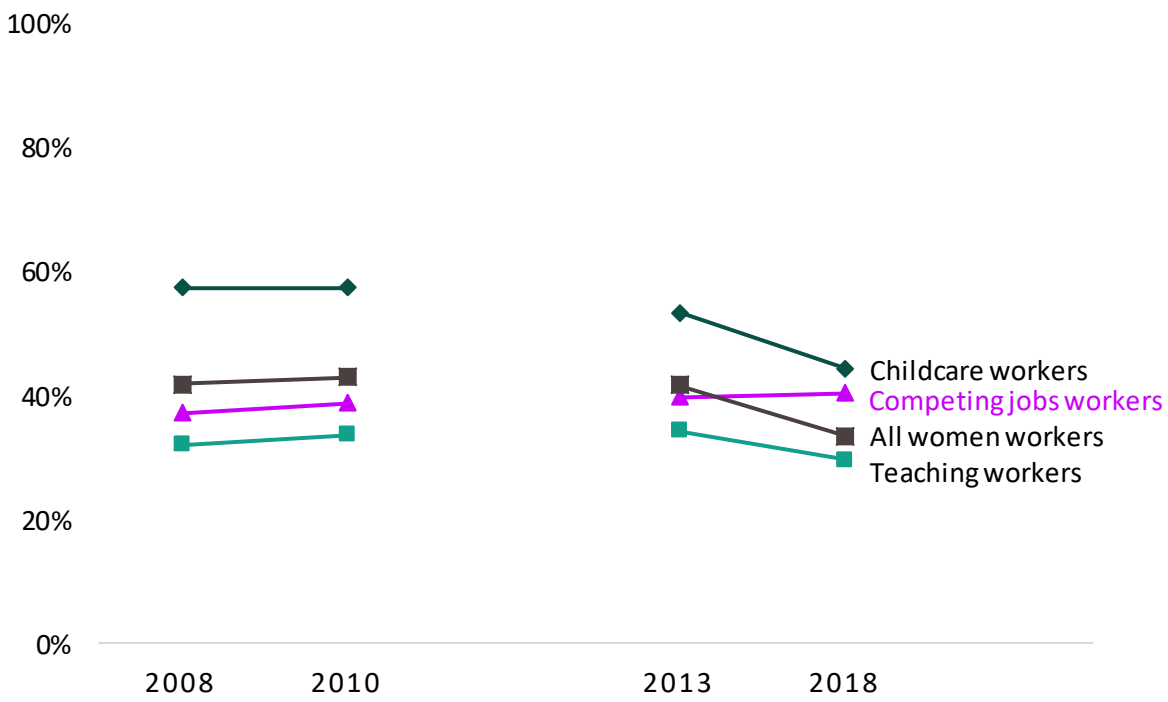
- While teaching workers earn on average a higher pay than the general female working population, childcare workers and hairdressers and beauticians earn about £5.00 less per hour.

- While both the general female workforce and workers in competing occupations have seen an increase in their hourly pay over time, teaching workers and childcare workers have experienced a severe pay cut in real terms since 2013.
- As noted above, the childcare workforce's pay is converging towards the hourly rate of workers in competing occupations.

We also found that in 2018 women working in the public sector earned on average £2.00 more than women working in the private sector (£14.50 v £12.50). However, in line with the trend we found for teaching workers, pay in the private sector has been increasing by 6.1 per cent since 2013 but pay in the public sector has seen a 1.5 per cent decrease. In the 2008-10 period, pay had slightly increased in both sectors.

Finally, we compared the proportion of workers claiming state benefits or tax credits, and its change over time. It is encouraging to see that for the general female population the percentage of workers claiming state benefits or tax credits has been decreasing since 2013, after a slight increase in the previous time frame. This trend is followed by both childcare workers and teaching workers but not by workers in competing occupations. Nevertheless, the proportion of childcare workers claiming state benefits and tax credits is the highest among all groups and remains alarmingly high.

Figure 25. Percentage of workers claiming state benefits or tax credits by occupation, 2008-10 (includes managers) and 2013-18 (excludes managers)



This section presented a gloomy picture for childcare workers from the point of view of financial remuneration and stability. Particularly worrisome is the fact that, while hourly pay is low to begin with, trends over the last few years have been in the wrong direction. This is even more serious given that many other groups of workers have experienced an improvement in pay in real terms. While we are asking early years practitioners to support children's development and to help close the disadvantage gap, pay and some employment conditions are keeping the very same workers in a position of socio-economic disadvantage.

In the following section we will highlight a few themes that emerged from our analysis before drawing some conclusions and providing policy recommendations.

Discussion and conclusions

This report aims to provide a detailed description of the childcare workforce, while also drawing comparisons with three other occupational groups: teaching workers, which include nursery and primary school teachers, secondary school teachers and special needs education teachers; people employed as hairdressers and beauticians, i.e. in occupations that are often considered career alternatives to childcare; and all women in the workforce. We used the Labour Force Survey for the years 2006-18 to identify key trends in demographic characteristics, education and training, and employment conditions.

In this final section we highlight some themes that have emerged from our analysis and that we consider important for policy-makers and the early years sector to reflect and act upon.

Theme 1: Potentially increasing recruitment problems

Early years providers often report difficulties in hiring qualified staff, particularly Level 3 qualified staff. Ceeda data shows that in the summer 2017 there were 10,630 staff vacancies at Level 3, with the situation only recently improving.[20] Our analysis showed a similar trend. For example, the proportion of nursery nurses and assistants qualified to Level 3 went from 65.9 per cent in 2013 to 68.3 per cent in 2018. However, this five-year trend hides the fact that an initial increase from 65.9 per cent in 2013 to 73 per cent in 2016 was followed by a decrease to 71.3 per cent in 2017 and then again to 68.3 per cent in 2018.

Looking at recruitment more broadly, our analysis found other trends that, if sustained, may bring increasing problems to recruitment and retention, such as a very slow rate of increase in the number of childcare workers. While there are differences across individual occupations, the general trend is not encouraging when put in the wider context. For example, the age profile has been changing, with the proportion of 55-64-year olds increasing over time. In 2018, around 90,000 childcare workers were 55 years old or above, meaning a significant number will be exiting the workforce in the next 10 years, if not sooner. While the percentage of very young workers has slightly increased, the proportion of workers in the 35-54 age groups has been decreasing and it will be important to evaluate whether incoming cohorts are big enough to compensate for the exiting workforce.

Theme 2: Predominantly female workforce and lack of diversity

We also looked at recruitment from the point of view of diversity. The proportion of men working in the childcare sector has slightly increased over time (to 7.4 per cent in 2018) but is still low even compared with hairdressers and beauticians (13.7 per cent) and with nursery and primary teachers (15.8 per cent). Significantly low is the proportion of men working as nursery nurses and assistants (1.8 per cent), and childminders (4 per cent).

We have also noticed a lack of diversity from a social, ethnical and linguistic point of view. There has been a slight increase in diversity over the past few years. However, in 2018, 6.2 per cent of the childcare workforce (almost 45,000 workers) was not born in the UK, meaning Brexit could soon pose additional strain on the ability of the sector to recruit as inward and outward migration may be affected.

Theme 3: Low qualifications, and limited and decreasing upskilling opportunities

In 2018, 38.1 per cent of the childcare workers had a higher education level or above, 36 per cent a GCE, A-level or equivalent, and 24.4 per cent a qualification level at GCSE grades or below. When we looked at nursery nurses and assistants only, though, we found that 46.9 per cent hold no more than a GCE, A-level or equivalent qualification. Qualification levels have been increasing very slowly and erratically in the last few years and the childcare workforce remains much less qualified than the teaching workforce and the general female working population. Qualification levels are only slightly better than those of hairdresser and beauticians, but the opportunities to upskill have been continually decreasing. While this is a trend common to all four groups considered in our analysis, it is particularly worrying for the childcare workers, given the importance of training and Continuing Professional Development to improve and sustain workforce quality.

Theme 4: High financial insecurity

Several variables available through the LFS hint at childcare workers having relatively stable employment conditions. The majority have a permanent job and those working part-time do so because they chose to. In addition, only one per cent are agency workers and 6.3 per cent are looking for a different or additional paid job or business (with some variations across individual occupations). On the other hand, their employment conditions are less favourable than those of other groups of workers. The hourly pay is about £5.00 less than for the overall female working population and has seen a severe drop in real terms since 2013, to the point that childcare workers' and hairdressers and beauticians' pay is converging. One of the consequences of low pay is that childcare workers are kept in a situation of high financial insecurity, compared to other group of workers, with 44.5 per cent of them claiming state benefits or tax credits in 2018.

Conclusions

One of the goals of this report was to look into how the childcare workforce fares in comparison with other groups of workers. The LFS data shows that childcare workers are in a far more disadvantaged position than teaching workers and the general female working population: they are less qualified, lower paid and less financially secure. On the other hand, jobs such as hairdressers and beauticians appear to be an easy switch from childcare. The level of qualification required to enter these professions is lower while pay levels are converging. What is worrisome is that, for those workers who are highly motivated to enter and stay in the childcare sector, the financial incentives to do that are practically non-existent.

In line with other sources of information about the childcare workforce, the LFS shows that trends are also going in the wrong direction. A long-term strategy to put the early years sector in a position to offer high quality provision through a qualified and skilled workforce cannot exist without the following elements:

- Government and providers' support to increase qualification levels and to facilitate access to continuous professional development.
- A pay increase that provides higher incentives to stay in the sector even after upskilling.
- Other forms of support that could allow the workforce to be more financially stable.

If the government is serious about realising the full potential of the early years workforce in providing high quality early years education and having the greatest impact on children's outcomes, it must be serious about providing workers with dignity, status and the right opportunities.

Annex 1. Choosing the right data and other methodological issues

Key in deciding which LFS datasets to use for our analysis was the goal of meeting two competing needs: we wanted the datasets to contain information at the most detailed level to capture patterns and trends within specific occupations; but we also wanted to have a good sample size in order to obtain reliable population estimates. After reviewing the LFS guidelines, we considered and tested three options, and consulted with ONS in order to reach a sensible decision.[21] These options were:

1. One-quarter analysis, which uses the full April/June quarter.
2. Pooled 1st waves analysis, which uses only the first wave respondents and pools data across four quarters to get an annual average.
3. Four-quarter average, which uses full quarter data and averages across four quarters to get an annual average (as in Machin et al., 2010).

We tested these options using the quarterly LFS data for 2016 and 2017, comparing sample sizes and the results for some descriptive statistics, such as: age distribution (in five-year age bands), sex, age group by sex, age group by occupational code (those specific to childcare), highest qualification level, highest qualification level by occupation, NVQ level, and NVQ level by occupation.

In figure A1.1, we compare sample sizes for options 1 and 2 for 2017 (figures for 2016 are similar), to give an example of the range of sample sizes. Sample size would not be a real concern with option 3.

Figure A1.1 Sample sizes for options 1 and 2, 2017

	January-March	April-June	July-September	October-December
Variables	775	807	729	784
N	88,528	88,801	87,899	88,726
FULL QUARTER				
All people employed	34,090	43,316	34,131	34,837
Employed in childcare	965	976	978	989
1ST WAVE RESPONDENTS ONLY				
All people employed	7,087	7,393	7,654	7,713
Employed in childcare	198	210	212	215

Generally speaking, many results were similar, no matter what approach we took. This led us to exclude option 3 from the outset. ONS guidelines discourage the use of four-quarter averages because they double, triple and quadruple count participants, leading to distortions in the results. In addition, including the summer quarter would lead to over count responses that have a strong seasonal bias, and skew results. This would be a significant distortion in our case as we aimed to compare the childcare workforce with people working in the teaching profession, for whom the summer quarter presents atypical working patters. Given that the general results were not significantly different despite smaller samples in options 1 and 2, we decided that the risks of option 3 were not worth it.

We then compared results for options 1 and 2. Results across quarters are fairly consistent, so we chose the April-June quarter. We think it is reasonable to assume that the April-June quarter is the most stable quarter and that it would not pick up any irregular patterns or peaks, such as those due to summer holidays or to lower demand in the autumn caused by the age structure of the

entitlement. Some of the results were fairly consistent between the two approaches. Below are a few examples.

Figure A1.2 Age group – 5 years intervals

Age group	Pooled 1st waves		Full quarter	
	Frequency	Per cent	Frequency	Per cent
16-19yrs	20,247	3.3%	27,485	3.9%
20-24yrs	82,385	13.5%	95,870	13.5%
25-29yrs	63,248	10.4%	75,942	10.7%
30-34yrs	79,044	12.9%	70,035	9.8%
35-39yrs	62,856	10.3%	81,042	11.4%
40-44yrs	77,448	12.7%	94,636	13.3%
45-49yrs	75,331	12.3%	92,244	12.9%
50-54yrs	72,243	11.8%	87,081	12.2%
55-59yrs	46,152	7.6%	57,808	8.1%
60-64yrs	31,514	5.2%	30,213	4.2%
Total	610,468	100%	712,356	100%

Figure A1.3 Sex

Sex	Pooled 1st waves		Full quarter	
	Frequency	Per cent	Frequency	Per cent
Male	41,696	6.8%	48,470	6.8%
Female	568,772	93.2%	663,886	93.2%
Total	610,468	100%	712,356	100%

Figure A1.4 Highest qualification level

Highest qualification level	Pooled 1st waves		Full quarter	
	Average	Per cent	Average	Per cent
Degree or equivalent	141,779	23.3%	173,361	24.4%
Higher education	77,961	12.8%	96,059	13.5%
GCE A level or equivalent	214,688	35.2%	254,788	35.8%
GCSE grades A*-C or equivalent	113,931	18.7%	133,117	18.7%
Other qualification	35,533	5.8%	29,696	4.2%
No qualification	11,191	1.8%	13,286	1.9%
Don't know	13,977	2.3%	10,641	1.5%
Total	609,060	100%	712,356	100%

However, results were different in the case of gender by age cross tabulations and some tricky patterns arose, as the example below shows.

Figure A1.5 Age group by sex

Pooled 1st waves						
Age group	**Male**	**Female**	**Total**	**Per cent male**	**Per cent female**	**Per cent total**
16-19yrs	792	19,455	20,247	1.9%	3.4%	3.3%
20-24yrs	6,717	75,668	82,385	16.1%	13.3%	13.5%
25-29yrs	4,190	59,058	63,248	10.0%	10.4%	10.4%
30-34yrs	7,294	71,750	79,044	17.5%	12.6%	12.9%
35-39yrs	3,791	59,065	62,856	9.1%	10.4%	10.3%
40-44yrs	3,580	73,868	77,448	8.6%	13.0%	12.7%
45-49yrs	1,523	73,808	75,331	3.7%	13.0%	12.3%
50-54yrs	7,557	64,686	72,243	18.1%	11.4%	11.8%
55-59yrs	3,416	42,736	46,152	8.2%	7.5%	7.6%
60-64yrs	2,836	28,678	31,514	6.8%	5.0%	5.2%
Total	41,696	568,772	610,468	100%	100%	100%

Full quarter						
Age group	**Male**	**Female**	**Total**	**Per cent male**	**Per cent female**	**Per cent total**
16-19yrs	2,160	25,325	27,485	4.5%	3.8%	3.9%
20-24yrs	10,284	85,586	95,870	21.2%	12.9%	13.5%
25-29yrs	9,750	66,192	75,942	20.1%	10.0%	10.7%
30-34yrs	4,090	65,945	70,035	8.4%	9.9%	9.8%
35-39yrs	3,474	77,568	81,042	7.2%	11.7%	11.4%
40-44yrs	2,980	91,656	94,636	6.1%	13.8%	13.3%
45-49yrs	3,229	89,015	92,244	6.7%	13.4%	12.9%
50-54yrs	7,649	79,432	87,081	15.8%	12.0%	12.2%
55-59yrs	1,615	56,193	57,808	3.3%	8.5%	8.1%
60-64yrs	3,239	26,974	30,213	6.7%	4.1%	4.2%
Total	48,470	663,886	712,356	100%	100%	100%

The results for male workers group are very different when disaggregated by age groups. When we looked at the results of the unweighted analysis, we observed that in several cases we had empty cells for males. That suggested that the results in table A1.4 were driven by some very small sample sizes. We also re-run the same analyses for 2016 to check whether there was a pattern in the location of the empty cells, but they were clearly randomly placed. Finally, our conversation with ONS confirmed that these results highlight the problem with using the pooled 1st waves approach. ONS commented that one wave of the LFS is not be representative of the UK as it is only one fifth of the sample and the weighting does not adequately account for this. ONS advice was that the whole quarter approach should be used.

Therefore, we came to the following conclusions:

- In line with ONS advice, we decided not to use the four-quarter average because it is not a good representation of the annual average due to the double, triple and quadruple counting of some respondents.

- The (albeit small) loss in sample size we would incur in using the pooled 1st wave option is not worth it because of the skewed and inaccurate results that we would obtain.
- We decided to move forward with the full one-quarter analysis, comparing the same quarter (April-June) for each year.

Using the full quarter data does not necessarily free us from sample size issues when our analysis gets very granular. To tackle this problem, and in line with our interest in trends rather than static averages or exact estimates, we decided to use moving averages on a three-year basis.

A final methodological issue relates to the time frame of our analysis. In 2006, the LFS moved from a seasonal to a calendar quarters system.[22] To have data comparable across years, we took 2006 as the beginning point of our analysis, but because of changes in the occupations classification system we split the time series into two parts: the 2006-10 years, which calculating moving average on a three-year basis will be reported as the 2008-10 time frame, and the 2011-18 years, which will be reported as the 2013-18 time frame. These two time frames are not always directly comparable. We point out in our findings sections when we consider such comparisons appropriate.

Annex 2. ONS Standard Occupational Classification (SOC) Hierarchy

Figure A2.1 ONS Standard Occupational Classification (SOC) Hierarchy

Code	Job description
2314 Secondary education teaching professionals	Secondary (and middle school deemed secondary) education teaching professionals plan, organise and provide instruction in one or more subjects, including physical education and diversionary activities, within a prescribed curriculum in a secondary or secondary/ middle school.
2315 Primary and nursery education teaching professionals	Primary (and middle school deemed primary) and nursery education teaching professionals plan, organise and provide instruction to children at all levels up to the age of entry into secondary education.
2316 Special needs education teaching professionals	Special needs education teaching professionals organise and provide instruction at a variety of different levels to children who have emotional, behavioural or learning difficulties or physical disabilities. These professionals may also work with exceptionally gifted pupils.
6121 Nursery nurses and assistants	Nursery nurses and assistants care for children from birth up to seven years of age in day or residential nurseries, children's homes, maternity units and similar establishments.
6122 Childminders and related occupations	Childminders and related occupations provide day-to-day care of children within a domestic setting, and supervise and participate in their play, educational and other activities.
6123 Playworkers	Playworkers deliver and facilitate play opportunities for children in a range of formal and informal settings including play groups, play schemes, free play locations, and in pre- and after-school activities.
6125 Teaching assistants	Teaching assistants assist teachers with their day-to-day classroom work and with routine administrative tasks.
6126 Educational support assistants	Educational support assistants work with teachers to provide one-to-one support for children with particular learning needs.
6221 Hairdressers and barbers	Hairdressers and barbers shampoo, cut, colour, style and treat hair.
6222 Beauticians and related occupations	Beauticians and related workers give facial and body beauty treatments, apply cosmetics and dress wigs.

Source: Office for National Statistics. ONS Standard Occupational Classification (SOC) Hierarchy

Annex 3. Childminders' analysis

There are limitations to using the LFS to analyse the childcare workforce. One of the issues results from the way some occupations are grouped into the Standard Occupational Classification (SOC). For example, code 6122 groups childminders together with au pairs and nannies. In the main report, we provided results for all respondents coded as 6122. We wanted our analysis to be in line with the way the LFS classifies workers and we wanted to make sure we had a good sample size. However, we also know that keeping them in the sample is likely to skew some of the results for this occupational group.

To partially correct for this, we re-run the whole analysis after subsetting the data in a way that could help us identify respondents that were likely to be au pairs and nannies and select them out of the sample. We used four criteria to subset the sample. Respondents had to be:

- Self-employed (INECAC05 = 2).
- Working from own home, on the same grounds or in the same building, or in different places but with home as a base for their job (HOME ≠ 4).
- At least 20 years old (AGE ≥ 20).
- Working at least 10 hours per week (BACTHR ≥ 10).

In this annex, we compare the results we obtained for this subset of the sample – we will call it the 'trimmed group'- with those presented in the main text for the whole group coded as 6211 – we will call it the 'entire group' - or to childcare workers. The sample size was significantly impacted by our subsetting process and ranged from a low of 53 observations in 2016 to a high 94 in 2008. While population estimates are not reliable, we provide the results of the most significant variables considered in this report to show for illustrative purposes.

From a first look at the data, we see that the trimmed group is more in line with the description of childminders' we get from other organisations' reports, for example in terms of total number of workers.[23]

Figure A3.1 Number of workers, 2008-10 and 2013-18

	2008	2009	2010	2013	2014	2015	2016	2017	2018
Entire group	106,000	110,000	114,000	99,000	100,000	105,000	100,000	93,000	91,000
Trimmed group	44,000	48,000	50,000	46,000	45,000	49,000	42,000	40,000	39,000

The percentage of people working full time is higher for the trimmed group (74.2 per cent) than for the entire group (58.7 per cent). This again, is in line with what we know about childminders from other studies.

The age profile shows a higher proportion of childminders in the older age groups, suggesting that the group of people we subset out of the sample was likely made up of au pairs and nannies, who are usually younger.

Figure A3.2 Age profile, 2008-10 and 2013-18

Entire group									
Age	**2008**	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
15-19	4.9%	4.7%	4.7%	4.9%	6.7%	6.5%	6.7%	5.2%	4.3%
20-24	11.2%	11.7%	13.6%	10.6%	9.1%	10.1%	11.3%	11.8%	12.2%
25-29	16.8%	17.0%	15.5%	14.4%	13.3%	11.9%	14.7%	15.8%	15.7%
30-34	13.5%	14.7%	13.2%	10.3%	11.7%	11.9%	12.9%	12.3%	12.6%
35-39	13.6%	14.9%	14.7%	13.0%	12.5%	12.1%	12.2%	13.1%	11.6%
40-44	13.0%	12.1%	13.4%	15.2%	14.5%	14.5%	12.6%	13.2%	13.7%
45-49	8.8%	9.3%	9.4%	13.7%	11.9%	11.0%	8.9%	6.9%	8.6%
50-54	7.7%	7.3%	6.6%	9.6%	10.5%	11.6%	10.4%	11.2%	10.8%
55-59	7.5%	5.9%	6.3%	6.4%	6.6%	5.7%	5.2%	5.3%	6.6%
60-64	2.9%	2.5%	2.6%	1.8%	3.3%	4.7%	5.2%	5.0%	3.8%
Trimmed group									
	2008	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
15-19	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
20-24	3.7%	3.8%	4.6%	1.7%	1.7%	3.6%	6.4%	5.7%	5.0%
25-29	8.1%	8.9%	11.0%	7.9%	7.0%	5.6%	7.3%	7.1%	7.1%
30-34	15.1%	16.0%	13.2%	10.4%	12.1%	14.0%	13.2%	12.9%	11.6%
35-39	18.8%	19.9%	18.3%	15.7%	14.5%	16.0%	17.1%	19.6%	15.8%
40-44	19.4%	16.9%	19.0%	20.6%	18.8%	18.4%	19.3%	20.9%	22.1%
45-49	10.5%	12.7%	13.9%	23.1%	19.4%	15.9%	12.7%	8.0%	8.8%
50-54	10.6%	9.6%	8.2%	12.7%	14.4%	13.3%	12.2%	11.4%	15.1%
55-59	10.5%	9.2%	9.2%	7.0%	8.9%	8.6%	8.0%	8.1%	9.5%
60-64	3.3%	3.0%	2.7%	2.0%	4.3%	5.7%	8.1%	8.3%	6.6%

Despite the change in the age profile, the LFS shows an average age for the trimmed group of 41 in the period 2008-10 and 43 in the period 2013-18, while other surveys place the average age of childminders at around 50. This suggests that while subsetting helped up to obtain a more representative group, results might still be skewed by the inclusion of au pairs and nannies that we were not able to identify and exclude from the sample.

Other demographic characteristics, such as ethnicity and country of origin, are in line with the picture provided by other sources, although we could only compare with data for the whole group of childcare workers.

Figure A3.3 Percentage of White workers

	2008	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Entire group	91.1%	91.0%	91.1%	91.3%	89.4%	88.4%	87.7%	87.2%	86.9%
Trimmed group	93.6%	91.6%	92.7%	93.9%	91.6%	91.0%	89.6%	91.3%	88.8%

Figure A3.4 Percentage born in UK

	2008	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Entire group	89.5%	88.9%	88.8%	88.9%	87.7%	86.4%	86.3%	86.6%	86.6%
Trimmed group	87.4%	87.4%	88.4%	88.1%	86.2%	84.0%	83.9%	82.5%	78.6%

Key variables of interest to us are those related to qualifications levels and upskilling opportunities. In the case of the highest level of qualification, results do not appear very different after trimming the group.

Figure A3.5 Highest level of education

Entire group									
	2008	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Degree or equivalent	7.8%	7.0%	8.0%	14.0%	14.0%	14.5%	17.4%	16.8%	20.6%
Higher education	11.1%	12.7%	11.3%	13.0%	13.5%	14.7%	12.8%	12.5%	9.0%
GCE A Level or equivalent	25.3%	31.2%	34.6%	33.5%	35.0%	33.0%	35.1%	36.6%	37.3%
GCSE grades A-C or equivalent	29.0%	27.4%	23.8%	22.1%	22.0%	21.7%	20.9%	19.8%	18.2%
Other qualifications	19.7%	16.9%	17.6%	13.6%	12.5%	11.4%	8.9%	8.4%	10.2%
No qualification	6.3%	4.0%	3.8%	3.4%	2.5%	3.5%	3.3%	4.4%	3.4%
Don't know	0.8%	0.7%	0.8%	0.5%	0.6%	1.2%	1.7%	1.5%	1.3%
Trimmed group									
	2008	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Degree or equivalent	6.6%	6.8%	7.5%	11.1%	12.5%	14.4%	17.6%	16.2%	19.4%
Higher education	11.2%	14.2%	12.8%	18.3%	20.0%	18.5%	16.5%	15.7%	10.6%
GCE A Level or equivalent	30.2%	30.9%	36.1%	38.1%	38.2%	35.6%	36.2%	37.2%	35.8%
GCSE grades A-C or equivalent	28.9%	28.9%	26.4%	22.4%	20.7%	22.5%	22.5%	22.2%	19.1%
Other qualifications	16.9%	15.1%	14.8%	8.3%	7.2%	7.8%	7.2%	7.9%	11.8%
No qualification	5.8%	3.2%	3.0%	n/a	n/a	n/a	n/a	n/a	n/a
Don't know	1.6%	1.3%	1.1%	n/a	n/a	n/a	n/a	n/a	n/a

Figure A3.6 Highest NVQ level

Entire group									
	2008	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Level 1	3.2%	5.1%	3.6%	2.5%	2.5%	2.5%	5.2%	5.2%	8.1%
Level 2	22.9%	20.9%	15.9%	14.7%	13.6%	15.3%	14.1%	14.1%	18.6%
Level 3	68.7%	68.6%	73.7%	71.7%	69.7%	61.2%	61.8%	60.6%	66.2%
Level 4	4.2%	3.5%	2.9%	7.9%	10.0%	13.8%	14.1%	13.9%	7.2%
Level 5	4.6%	n/a	n/a	5.5%	3.0%	2.4%	3.2%	2.6%	n/a
Other NVQ/SVQ	n/a	n/a	n/a	n/a	n/a	n/a	n/a	3.2%	3.6%
Don't know	4.9%	5.3%	4.0%	9.3%	7.2%	6.4%	6.8%	9.1%	12.3%
Trimmed group									
	2008	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Level 1	3.5%	4.1%	5.2%	3.2%	3.3%	5.5%	5.4%	4.2%	2.3%
Level 2	28.3%	26.4%	21.5%	20.7%	19.1%	16.1%	16.2%	16.7%	20.4%

Level 3	60.3%	62.7%	66.4%	63.6%	61.3%	57.3%	57.5%	59.4%	62.3%
Level 4	1.8%	1.6%	2.2%	5.9%	6.7%	9.7%	9.5%	9.4%	5.9%
Level 5	1.0%	0.0%	0.0%	1.0%	0.5%	1.4%	1.7%	1.1%	0.7%
Other NVQ/SVQ	n/a	n/a	n/a	0.0%	1.2%	2.2%	3.2%	2.6%	1.4%
Don't know	5.4%	5.2%	4.6%	5.5%	7.8%	7.9%	6.5%	6.6%	7.1%

In the perspective of our analysis, it is worrisome that the trimmed group shows an even lower percentage of workers working or studying towards higher qualification and a downward trend in these percentages. However, this is more in line with the data available from other studies.

Percentage studying towards higher qualifications

Entire group								
2008	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
22.7%	23.8%	23.9%	17.2%	16.7%	16.0%	16.5%	13.1%	14.2%
Trimmed group								
2008	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
19.9%	21.2%	20.7%	12.8%	9.9%	8.9%	6.1%	6.0%	5.3%

Finally, we looked into the proportion of childminders receiving state benefits or tax credits. Our trimmed sample shows that a higher percentage of childminders claims state benefits or tax credits compared to the childcare workers as a whole.

Receiving benefits or tax credit

Childcare workers								
2008	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
57.5%	58.2%	57.4%	53.5%	50.6%	47.6%	45.5%	44.8%	44.5%
Trimmed group								
2008	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
73.8%	75.2%	76.5%	61.6%	60.6%	62.5%	59.9%	60.3%	58.7%

With this separate analysis, we tried to subset the group coded as 6122 ('childminders and related occupations') in a way that could help us identify people that are more likely to be au pairs and nannies and to select them out of the sample. Some of the results point to the fact that we were able to screen out some of the people who are likely not childminders. However, our success was only partial. In addition, we end up with very small sample size that limits our ability to obtain quality population estimates. Therefore, in the main text of the report we included only results for the whole group and we conclude that the Labour Force Survey, at the moment, is not the best data source to understand childminding as a profession.

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