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Technical Report

The Early Years Workforce in England 2025

Methodology appendix

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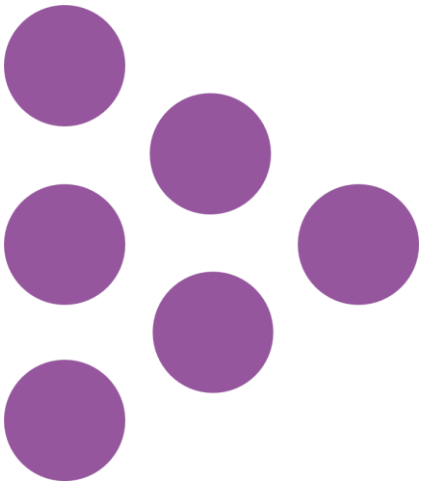

The Early Years Workforce in England 2025 – Methodology appendix

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Contents

1. Introduction

This methodology appendix explains the data we used and the analysis we undertook to produce our findings in the Early Years Workforce in England 2025 Report. Section 2 lists the secondary data sources we used in the analysis. The remaining sections then each cover methodological detail relevant to the analysis in each section of the main report.

Section 3 explains how we used data from the Survey of Childcare and Early Years Providers (SCEYP) and published DfE analysis to report on the size of the early years workforce.

Section 4 discusses how we used data from the Annual Survey of Hours and Earnings (ASHE) to measure the relative competitiveness of early years pay.

Finally, Section 5 shows how we used data from the Annual Population Survey (APS) to measure working conditions for early years workers. This section explains key variable definitions, provides sample sizes and outlines our methodology for identifying early years workers and similar workers in the APS data.

2. Data sources

The following data sources were used to inform this research report:

- Survey of Childcare and Early Years Providers. Available: https://explore-education-statistics.service.gov.uk/find-statistics/childcare-and-early-years-provider-survey/2024
- Early Years places and workforce need. Available: Early years places and workforce need - GOV.UK
- APS. Available from the Office for National Statistics (ONS). More information: https://ons.metadata.works/browser/dataset?id=316
- ASHE. Available from the ONS. More information: https://www.ons.gov.uk/surveys/informationforbusinesses/businesssurveys/annualsurveyofhoursandearningsashe
- Pulse surveys of childcare and early years providers. Available: https://www.gov.uk/government/publications/pulse-surveys-of-childcare-and-early-years-providers

3. Early years staff numbers analysis

Our analysis of early years staff numbers combines information from two data sources. First, we take data on actual staff numbers, as measured by analysis of data from the SCEYP. SCEYP survey responses are collected across a survey window that spans several months and is usually in the spring and/or summer of a particular year. For example, the survey window for the 2024 collection was 8th May to 19th July. To anchor the estimated staff numbers to a point in time, we assume that the data relates to the staff position as at 1st June. Other reasonable dates could be assumed here, but we chose this date on the basis that the pattern of responses was likely to be front-loaded more towards the beginning of the survey window.

The second source of information is the Department for Education's estimated workforce needs due to the expanded childcare entitlement, published in a separate analysis (DfE, 2024). This analysis concluded that:

- the summer 2024 term could be met by the existing workforce
- around 6,000 additional staff (headcount) are needed above the 31 December 2023 baseline for autumn 2024
- around 35,000 additional staff (headcount) are needed above the 31 December 2023 baseline for autumn 2025.

The '31 December 2023 baseline' is not defined within DfE's analysis in terms of a precise baseline number of staff. To determine one, we used linear interpolation to estimate the approximate number of staff as at 31 December 2023. Linear interpolation involves taking an average of the estimated staff numbers at 1 June 2023 and at 1 June 2024 (from SCEYP), weighted according to how many days apart the interpolation date is from the two data points. Our estimated staff number for 1 June 2023 was 347,800, while our estimated staff number for 1 June 2024 was 368,100. The linear interpolation therefore yielded an estimated baseline of 359,600 staff. We applied the estimated additional staff requirements to this baseline, assuming that 'summer' corresponded to 1 April and 'autumn' corresponded to 1 September.

4. Analysis of the competitiveness of teacher pay over time

To analyse early years workers' position in the income distribution in England and how it has changed over time, we used data from the Annual Survey of Hours and Earnings (ASHE) for 2021 to 2024 (the last year of available data at time of publication). Since the ASHE is collected in April of each year, we re-aligned the data so that the 2021 ASHE represented the 2020/21 academic year while 2024 represented the 2023/24 academic year.

Our sample consisted of individuals in the ASHE working in one 'main job'. For those working in a 'main job' and an 'additional job', we discarded the 'additional job'. For those working in multiple part-time jobs or multiple full-time jobs, we discarded their records altogether. We also discarded anyone not on a permanent employment contract, anyone with missing earnings records or occupation / industry codes, anyone working a junior pay rate or who were on an apprenticeship and anyone whose earnings were affected by leave.

The ASHE has some known limitations, such as non-coverage of those in self-employment, relatively high non-response rates and non-sampling bias (since the ASHE only samples jobs registered on a pay as you earn (PAYE) scheme). To minimise the impact of these limitations, we applied the ASHE calibration weight to our analysis. This helped to ensure that our estimates were weighted to be representative of the entire labour force in England, as per the Labour Force Survey (LFS). The total sample size of individuals in our main analysis sample each year is provided in Table 1. However, a key limitation it introduces is the exclusion of most childminders from the sample, since a large proportion of childminders are self-employed and therefore not covered by ASHE.

We defined the early years workers group and sub-groups according to occupation and industry codes in the data (see section 5.1 below for full information on these definitions).

Using our full sample of early years workers and non-early years workers, for each year from 2020/21 to 2023/24, we estimated each percentile of the income distribution (i.e. we estimated 100 percentiles so that each represented one per cent of the income distribution). Using data on median and inter-quartile pay in the early years workforce, we then determined in which percentile each value sat in each year. For instance, the median hourly pay of an early years worker in 2020/21 was £9.73. This was in the 13th percentile as the 13th percentile was just lower than this amount, while the 14th percentile was just higher. We did not adjust the estimated percentiles for inflation as each calculation involved nominal-terms comparisons of income and percentiles of the income distribution within the same year.

Table 1: Sample sizes for ASHE analysis

Year	Total in-sample workers in England
2021	93,024
2022	105,649
2023	117,099
2024	123,740

Source: NFER analysis of ASHE data for 2021 to 2024

5. Analysis of early years workers' working conditions compared to similar workers

Our analysis of early years' working conditions primarily used data from the APS. The advantage of using the APS data was two-fold. First, the APS data enabled us to measure how working conditions have changed over time on a consistent basis. Secondly, it enabled us to compare how working conditions compare to those in other occupations (and how this difference has changed over time).

The analysis involved several key steps, including identifying the early years workforce and a suitable comparison group in the data, ensuring comparability in the two groups, and defining the key indicators for reporting.

5.1. Identifying early years workers and a suitable comparison group

In the APS data, we defined our sample of early years workers as those with certain occupation and/or industry codes and who worked in England. We used standard occupational codes (SOC) and standard industrial classifications (SIC) to identify early years workers in our primary sample. Substantial changes to the occupation coding system in 2020 had a significant impact on how early years workers are categorised and therefore identified. These made identification of the formal early education and care workforce easier to distinguish from more informal arrangements such as nannies and au pairs. This change meant that we were unable to create a consistent time series of data covering before 2020/21, and therefore our analysis covers the period from 2020/21 onwards.

Specifically, we defined our sample as:

- Occupation (SOC) =
    - 'Early education and childcare assistants' OR
    - 'Early education and childcare practitioners' OR
    - 'Early education and childcare services managers' OR
    - 'Nursery education teaching professionals' OR
    - 'Childminders'

OR WHERE:

- Industry (SIC) =
    - 'Child day-care activities' OR
    - 'Pre-primary education'

AND

- Occupation (SOC) =
    - 'Playworkers' OR
    - 'Teaching assistants' OR
    - 'Other registered nursing professionals' OR
    - 'Primary education teaching professionals' OR
    - 'Special and additional needs education teaching professionals' OR
    - 'Educational support assistants' OR
    - 'Nursing auxiliaries and assistants' OR

- ‘Residential, day and domiciliary care managers and proprietors’ OR
- ‘Youth and community workers’ OR
- ‘Teaching professionals n.e.c.’ OR
- ‘Registered nurse practitioners’ OR
- ‘Other health professionals n.e.c.’ OR
- ‘Social services managers and directors’ OR
- ‘Generalist medical practitioners’ OR
- ‘Specialist medical practitioners’ OR
- ‘Head teachers and principals’ OR
- ‘Education managers’ OR
- ‘Education advisers and school inspectors’ OR
- ‘Welfare professionals n.e.c.’ OR
- ‘Librarians’ OR
- ‘Higher level teaching assistants’ OR

We specifically excluded from our definition the following occupations:

- ‘Child and early years officers’
- ‘Nannies and au pairs’
- ‘Secondary education teaching professionals
- ‘Higher education teaching professionals’
- ‘Further education teaching professionals’.

For our comparison group, we included all those in the APS who were working in any private or public sector occupation outside of early years (as defined above).

Comparing teachers to all employees in other sectors in a meaningful way is challenging because the two groups are likely to differ in a number of important ways. For example, they may be different because people with different characteristics or motivations select to go into different occupations. No comparison of different occupations should therefore be interpreted as the effect of entering that profession, although working conditions, and employees’ perceptions of them, can be influenced by entering that occupation rather than another.

We aimed to improve the comparability of our analysis as much as we could. Instead of comparing all early years workers to all other workers, we analysed a group of workers with similar characteristics to early years staff. We did so by re-weighting the other workers group to improve comparability in the underlying personal characteristics between the early years and other workers groups. This ensured that the distribution of gender, age, region highest qualification and working pattern was the same among the early years workers and the group of other workers.

We used a technique called entropy balancing to re-weight the other workers group within each survey wave and derive a ‘similar workers’ group (Hainmueller, 2012). This re-weighting approach did not remove all the underlying differences in characteristics and motivations between early years workers and other workers. However, it minimised the risk that any observed differences in working conditions were driven by differences in the distribution of gender, age, qualification level, region and working pattern between the two groups.

5.2. Identifying sub-groups of early years workers

We sub-divided our group of early years workers into sub-groups, to explore variations by different groups within the workforce.

We first split early years workers into three groups based on type of provision. We identified workers in ‘school-based providers’ according to their industry code being ‘primary education’. We identified childminders according to their occupation code being ‘Childminders’. The residual category we assumed was ‘group-based providers’. The latter category may not exactly map on to wider definitions of group-based provision because it is defined as a residual category, so some caution should be exercised in interpreting findings about this group.

Second, we split early years workers into groups depending on the level of their highest qualification. We combined levels 4 and 5 into a single category because of low sample sizes.

For both forms of sub-group analysis, we derived bespoke comparator groups of ‘similar workers’ using the same method as outlined above for the early years worker group as a whole, reflecting the particular characteristics of each sub-group in the weighting.

5.3. Sample sizes and analytical approach

We conducted the analysis using an academic year, combining data from the combined APS datasets from the beginning of September to the end of the following August. For the analysis, we used the cross-sectional analysis weights provided in the data set, ensuring the analysis was representative of UK households, and therefore, of English years workers as a whole. A comparison of the grossed size of the workforce with data on workforce size from SCEYP indicated that the groups were of similar size. This gave us some degree of confidence that the group we had derived matched the early years workforce as defined in other data sources, such as SCEYP.

The sample sizes in the APS analysis are shown in Table 2. Sample sizes for each individual measure differed, depending on the extent of missing data for each measure. The sample sizes of both early years workers and other workers have generally been falling slightly over time, which is due to falling response rates to the LFS across the whole population (Office for National Statistics, 2024).

In the main report we generally presented the results from a simple average of each measure for early years workers and similar workers, split by year. We used a weighted average, with the weight reflecting the cross-sectional survey weight of the respondent and the entropy balancing weight. Where we compared our key measures over time and between early years workers and similar workers, we tested whether any differences were statistically significant by conducting a t-test that the difference was statistically significantly different from zero.

Table 2: Sample sizes for APS analysis

Year	Number of early years workers	Number of similar workers
2020/21	440	43,196
2021/22	718	67,966
2022/23	533	54,956

Source: NFER analysis of Annual Population Survey data for 2020/21 to 2022/23.

The sample sizes for the sub-group analysis were inevitably smaller and were interpreted with an appropriate level of caution given these smaller sample sizes. Table 3 shows the sample sizes in the 2022/23 data for each of the sub-groups.

Table 3: Sample sizes for APS sub-group analysis

Year	Number of workers in 2022/23 APS sample
Provider type	
Childminders	102
School-based providers	45
Group-based providers	386
Level of highest qualification	
Level 1 or below	167
Level 2	50
Level 3	189
Level 4 or 5	101
Level 6 or above	23

5.4. Variables used in the analysis

The questions in the APS survey which we reported on are as follows:

Working hours in the reference week

Source: APS. Average (mean) response to 'Thinking now about the seven days ending Sunday the [last week], how many hours did you actually work in your (main) job/business – please exclude meal breaks?' Only includes respondents who reported being scheduled to work during the reference week and did not have any days off in the reference week due to being sick/injured. Excludes respondents where working hours during the week are zero.

Proportion wanting to work fewer hours

Source: APS. The measure is derived from a combination of responses and routed questions - see Labour Force Survey user guide for details. Proportion of respondents: 'Would you rather work shorter hours than in your present job?'

Proportion who mainly work from home

Source: APS. The proportion who responded with either 'In your own home', 'In the same grounds or buildings as your home' or 'In different places using home as a base' to the question 'In your main job do you work mainly:'

- In your own home
- In the same grounds or buildings as your home
- In different places using home as a base
- Or somewhere quite separate from home?

Proportion who work flexibly

Source: APS. The proportion who responded that in their main job, their agreed working pattern includes:

- flexitime (flexible working hours)
- an annualised hours contract,
- term-time working,
- job sharing,
- Condensed/compressed hours,
- zero hours contract,
- on-call working
- none of these.

Proportion who work in temporary employment

Source: APS. The proportion who responded that there was some way that their job was not permanent.

Proportion whose working hours tend to vary

Source: APS. The proportion who responded 'Yes' that the total number of hours they work tend to vary from week to week.

Proportion who agree that they have opportunities for career progression

Source: APS. The proportion who responded either 4 or 5 to the question: On a scale of 1 to 5, with 1 being 'strongly disagree' and 5 being 'strongly agree', to what extent do you disagree or agree with the following statement: 'My job offers good opportunities for career progression'?

Proportion doing job-related training or education in the last 3 months

Source: APS. The proportion who responded 'Yes' that in the last 3 months since they have taken part in any education or any training connected with your job or a job that you might be able to do in the future.

Proportion rating managers as 'good' or 'very good' at involving employees and their representatives in workplace decision making

Source: APS. The proportion who responded either 4 or 5 to the question: On a scale of 1 to 5, with 1 being 'very poor' and 5 being 'very good', how poor or good would you say managers at your workplace are at involving employees and their representatives in decision making?

Anxiety

Source: APS. Average (mean) response to ‘Overall, how anxious did you feel yesterday?’ on a scale of 0 “not at all” to 10 “completely”.

Life satisfaction

Source: APS. Average (mean) response to ‘Overall, how satisfied are you with your life nowadays?’ on a scale of 0 “not at all” to 10 “completely”.

Happiness

Source: APS. Average (mean) response to ‘Overall, how satisfied are you with your life nowadays?’ on a scale of 0 “not at all” to 10 “completely”.

Feeling that the things you do in your life are worthwhile

Source: APS. Average (mean) response to ‘Overall, to what extent do you feel the things you do in your life are worthwhile?’ on a scale of 0 “not at all” to 10 “completely”.

References

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