

FURTHER EDUCATION WORKFORCE DATA FOR ENGLAND

Analysis of the 2017-2018 Staff Individualised Record (SIR) data

FRONTIER ECONOMICS – APRIL 2019



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EXECUTIVE SUMMARY

This report presents the findings from an analysis of workforce data from the Staff Individualised Record (SIR) dataset for Further Education (FE) providers in England in 2017-18. In the main body of the report, we present our analysis of the characteristics of the FE workforce in detail; this section summarises the findings of that analysis.

This report is intended to be descriptive only – describing the raw data received from FE providers – and as such does not aim to draw detailed conclusions about the implications of the data received.

We have seen the quantity and quality of the SIR dataset improve over time. This year's dataset (SIR 26) includes 90,792 individual contract records from 193 providers,¹ in comparison to the 66,061 submitted by 175 providers in response to SIR 24.

Earlier years have fewer records as the data covered colleges only,² whereas since SIR 24 the dataset has included a range of provider types. Figures relating to trends over time therefore need to be interpreted in this context.

Providers (Section 2)

- **Numbers over time.** The number of FE providers submitting responses to the SIR dataset has increased from 122 in SIR 21 (2012-13 data) to 193 in SIR 26.³ The total number of records received has increased from 72,104 in SIR 25 to 90,792 in SIR 26.
- **Types.** We classify FE providers as one of four types: colleges, independents, local authorities, and other.
- **Prevalence of college providers.** College providers make up over half of the provider sample (118 of 193), and the 97 General Further Education Colleges (GFECs) that submitted data constitute over half of all GFECs (174) in England.⁴ Independent providers and local authority providers make up most of the rest of the provider sample (with 35 and 25 providers respectively).
- **Staff headcount.** We use the SIR, combined with college accounts data and individualised learner record data, to estimate the total

¹ This is the number of contracts and providers after data cleaning has been undertaken on the original dataset. See the annex for more details.

² Prior to SIR 24, National Specialist Colleges were included in the SIR dataset, which we now classify in the provider type 'Other', despite being colleges, due to the unique offering that NSCs provide. See the main body of this report for further detail.

³ We report the number of providers in the SIR 26 dataset after data cleaning has taken place. Unless otherwise specified, all figures quoted in this report are calculated after data cleaning. Also note that SIR 21 only included college providers.

⁴ <https://www.aoc.co.uk/about-colleges/research-and-stats/key-further-education-statistics>

headcount of staff at each provider type. We estimate that there are around 163,000 staff at colleges, 32,000 at independent providers, 19,000 at local authority providers, and 17,000 at other providers. This implies an estimated total of around 231,000 staff in the FE sector.⁵

Entire workforce (Section 3)

- **Occupation.** Considering staff at all providers, 42% are teaching staff, 16% are learner-facing technical staff (e.g. learning support staff), and 15% are admin staff, the three largest occupations. The same three occupations were the largest in SIR 25.
- **Apprentices.** The total number of apprentices recorded in SIR 26 is substantially higher than that recorded in SIR 25, largely due to an increase in the number of administration apprentices.
- **Zero hours contracts.** The proportion of zero hours contracts has fallen slightly since SIR 25, from 5.2% to 4.5%. However, due to the fact that the SIR 26 dataset contained more records in total, the number of zero hours contracts reported increased from 3,323 in SIR 25 to 3,501 in SIR 26. Zero hours contracts only began being recorded in SIR 24, when they made up 3.2% of the dataset.
- **Casual staff.** Local authority providers have substantially more contracts recorded as being 'casual': 40.7% of all contracts, compared to 8.3% at college providers.
- **In-year employment change.** Most occupations have seen small changes in employment during 2017/18 (i.e. between the beginning and end of the period that SIR 26 covers, the 2017/18 academic year). The biggest changes were in apprentices (+9.2%), learner-facing technical staff (+4.7%), and middle managers (-2.7%). The number of teaching staff contracts increased by 2.1%.
- **Part-time work.** As in SIR 25, local authorities employ significantly more part-time workers than other provider types – 77% of local authority staff work part-time, compared to 46% at colleges, 40% at other providers, and 35% at independent providers.
- **Gender balance.** Men remain heavily over-represented amongst trades support staff roles. Women remain over-represented amongst admin staff and caring support staff.
- **Age.** Staff at local authorities are substantially older than those at other provider types – as in SIR 25, the median age at local authorities is 52, compared to 47 across all provider types.
- **Ethnicity.** As in previous years, the vast majority of staff identify as

⁵ We are aware that we may not be able to capture all (particularly small) providers as part of this estimate. We also note the challenges presented by combining information from different data sources.

white British, at all provider types.

- **Annual pay – provider types.** Staff at college providers have a higher median pay than those at other provider types.
- **Annual pay – change over time.** Median pay across all staff and providers has increased in nominal terms from £27,500 in SIR 21 to £28,200 in SIR 26.
- **Annual pay – provider type and occupation.** The college pay premium can be observed across a number of occupations, most starkly for senior managers, for whom median annual pay is £59,400 at colleges, compared to £57,300 across all provider types and £32,800 at independent providers.
- **Annual pay – regional change over time.** Since SIR 21, the South has seen the largest increase (11.1%) in median pay (across all occupations), while the Midlands and East has seen median pay rise by just 1.8% over the same period.
- **Gender pay gap.** The gender pay gap across all staff and providers is 9.3% (in favour of men), down from 9.7% in SIR 25. As this is an aggregate gap, it does not take into account the jobs and qualifications of individual members of staff. For example, the SIR 23 report in 2014-15 found that most of the difference in pay between genders – particularly for teaching staff – was related to differences in job roles held by men and women.

Teaching staff (Section 4)

- **Subject taught.** The three largest subject areas taught across the FE sector are: Arts, Media and Publishing; Health, Public Services and Care; and Engineering and Manufacturing Technologies.
- **Annual pay – provider types.** Median pay for teaching staff is higher in colleges (£31,800) than in independent providers (£26,000) or local authorities (£25,500).
- **Annual pay – change over time.** Median teacher pay across all providers has declined from £32,500 in SIR 21 to £31,600 in SIR 26. For colleges the story is similar, the main difference being just that pay in colleges tends to be slightly higher than in other provider types.
- **Annual pay – variation by region.** Median teacher pay is substantially higher in Greater London (£36,600) than in the North (£31,200), Midlands and East (£32,300), and the South (£31,400). Since SIR 21, median teacher pay has risen in Greater London and the South, but fallen in the Midlands & East and the North.
- **Gender pay gap.** The gender pay gap is 2.5% (in favour of men) for teaching staff, down from 2.9% in SIR 25. As mentioned above,

previous analysis in SIR 23 suggests that this gap may be driven to a significant extent by the different subjects taught by men and women.

- **Continuous professional development (CPD).** The median number of hours recorded as being spent on CPD was 29.5 in SIR 26, similar to previous years. The mean number of CPD hours in SIR 26 was 35.
- **Qualifications.** As in SIR 25, the most common subject-specific qualification is Level 6 (Bachelor's Degree or equivalent), and the most common general teaching qualification is Level 7 (PGCE or equivalent). More vocational subjects such as 'Engineering and Manufacturing Technologies' and 'Retail and Commercial Enterprise' have a larger proportion of staff with Level 4 and 5 qualifications, compared to subjects such as Humanities and English.

Changes in typical college characteristics since SIR 21 (Section 5)⁶

- **Number of providers.** The number of colleges submitting data has remained similar over time – 120 in SIR 21 and 118 in SIR 26. The number of records submitted by colleges has increased from 76,718 to 82,208.
- **Number of employees.** All college types have increased in size over time. For example, in SIR 21 GFECs had a median headcount of 571; in SIR 26, this was 642.
- **Subjects offered.** Looking across seven subject areas consistent between SIR 21 and SIR 26, all seven have seen a decline in the proportion of providers submitting at least one contract in that area since SIR 21. For example, whereas 91% of providers submitting data in SIR 21 had at least one contract with the subject specified as ICT, in SIR 26 this was 82%.
- **Occupation.** Teaching staff now make up 40% of the records submitted by college providers, compared to 49% in SIR 21. This drop is mirrored by an increase in the proportion of administrative staff and, in particular, learner-facing technical staff between SIR 21 and SIR 26.
- **Demographics.** The demographics of the FE college workforce have not changed substantially since SIR 21. The workforce remains predominantly female (61%) and white British (84%). While the median age has only increased from 46 to 47, the proportion of the workforce that are aged 60 and over has increased from 9% in SIR

⁶ In calculating results for each of SIR 21 and SIR 26, we use the entire dataset available in that year. We do not restrict our dataset to those providers present in the data in both SIR 21 and SIR 26, due to the loss of sample size that would result and the fact that we are aiming to provide the fullest possible picture of college characteristics in each year.

21 to 13% in SIR 26.

- **Part-time work.** The proportion of staff working part-time has declined from 49% in SIR 21 to 46% in SIR 26. This decline is concentrated amongst male staff.
- **Annual pay – change over time.** Median annual pay has increased by 2.8% since SIR 21, from £27,500 to £28,300. For teaching staff, median annual pay has fallen slightly, from £32,500 to £31,800.
- **Gender pay gap.** The gender pay gap has increased for colleges since SIR 21, from 7.0% to 9.3%. Median pay for male staff increased by 3.9%, while for female staff median pay increased by 1.3%.

1. INTRODUCTION

This report presents the findings from an analysis of workforce data from the Staff Individualised Record (SIR) dataset for Further Education (FE) providers in England in 2017-18 (SIR 26). The SIR has been collected from colleges in the FE sector since 1993, and from all types of provider since 2015. This is the latest publication in the series of annual SIR reports on the English FE workforce, and the sixth to be produced by the Education and Training Foundation (ETF).

The data analysed in this report covers a wide range of information on staff in a range of different FE providers, including age, gender, ethnicity, sexual orientation, occupation, and annual pay. For teaching staff, the data specifies subject taught and qualifications. Provider details – for example, name, location, and type (sixth form, general FE, national specialist college etc.) – are also included in the SIR dataset.

This report summarises the SIR data. As in previous years, separate sections of this report look in detail at (a) the workforce as a whole, and (b) the teaching workforce. For this year's report, we also take a more detailed look at how the typical characteristics of FE colleges have changed since SIR 21.⁷

This report is structured as follows:

- Section 2 describes the different FE provider types that submitted data in response to SIR 26.
- Section 3 contains our analysis of the characteristics of the FE workforce in England in 2017-18. We also look at how the workforce has changed over time.
- Section 4 looks specifically at the characteristics of teaching staff and how these characteristics have changed over time, including an analysis of the different subjects taught and the distribution of qualifications held by teachers.
- Section 5 looks specifically at college providers and the ways in which the typical characteristics of colleges have changed over time.
- The annex describes the data processing and edits we have made to the original SIR 26 dataset in order to remove errors and inconsistencies, and prepare the dataset for analysis.

⁷ We focus on college providers because SIR 21 only contained colleges.

2. PROFILE OF FE PROVIDERS

In this section, we provide an overview of the providers that responded to the SIR 26 data collection exercise.

As Figure 1 below shows, General Further Education Colleges (GFECs) are by far the most common provider type in the SIR 26 dataset. GFECs represent 50% of all providers in the sample, and 82% of all college providers.

As in previous years, we have a large number of independent providers in the sample; these providers form a ‘high-level’ category of their own. As in SIR 25, we also categorise local authorities separately due to the large number of such providers in SIR 26 as in SIR 25.

Figure 1. Number of providers by provider type

Provider type	High-level provider type	Number of providers
General Further Education College	College	97
Independent training provider	Independent	35
Local Authority training provider	Local Authority	25
Agriculture and Horticulture College	College	7
Sixth Form College	College	7
National Specialist College	Other	6
Third sector / charity training provider	Other	6
Specialist Designated College	College	5
Adult (19+) education provider	Other	3
Art, Design and Performing Arts College	College	2
Total		193

Source: Frontier Economics analysis of SIR 26 data

The total number of providers responding to the SIR data collection exercise has increased significantly since SIR 21 in 2012-13, when 122 providers submitted data (though SIR 21 only covered college providers). This year’s provider total of 193 is slightly lower than SIR 25, when 198 providers submitted data, but still significantly higher than the 173 providers which submitted data in SIR 24.

Figure 2 below shows the total number of records submitted by each provider type. Again, GFECs are by far the largest category. Despite having the second-largest number of providers in the data, independent providers submitted only the sixth-largest number of records, indicating that independents may be smaller on average than other provider types.⁸ Overall, the number of records has increased from 72,104 in SIR

⁸ We cannot conclude from this that the average size of all independent providers is lower than other provider types, however, given that our analysis is based on a sample of providers.

25 to the 90,792 submitted in SIR 26.

Figure 2. Number of records by provider type

Provider type	High-level provider type	Number of records
General Further Education College	College	75,315
Local Authority training provider	Local Authority	5,841
Agriculture and Horticulture College	College	4,210
Sixth Form College	College	1,751
National Specialist College	Other	1,108
Independent training provider	Independent	1,087
Specialist Designated College	College	665
Third sector / charity training provider	Other	344
Art, Design and Performing Arts College	College	267
Adult (19+) education provider	Other	204
Total		90,792

Source: Frontier Economics analysis of SIR 26 data

College providers

There are 118 college providers in total in our sample, comprising:

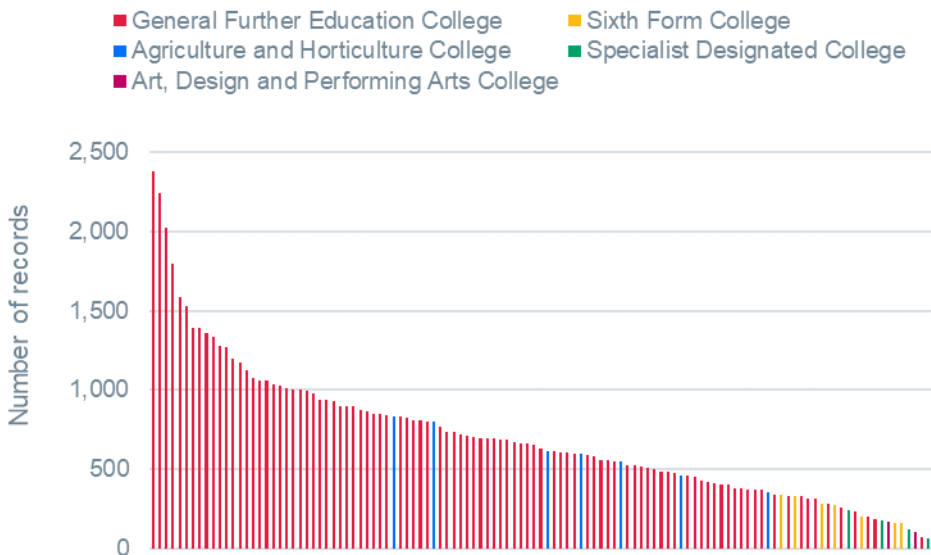
- 97 General Further Education Colleges;⁹
- 7 Sixth Form Colleges;
- 7 Agriculture and Horticulture Colleges;
- 5 Specialist Designated Colleges; and
- 2 Art, Design and Performing Arts Colleges.

Figure 3 below shows the distribution of college providers in SIR 26, in terms of the number of records (i.e. contracts) submitted as part of SIR 26. The largest providers are GFECs, with a number of providers submitting over 1,000 records. At the other end, there are several providers – mostly Sixth Form Colleges (SFCs) and Specialist Designated Colleges (SDCs) – with fewer than 300 records.

Our sample of colleges has increased since SIR 25, when we received submissions from 111 college providers. The number of GFECs in the sample has continued to rise, from 89 in SIR 21 and 91 in SIR 25, to 97 in SIR 26. At the same time, the number of Sixth Form Colleges in the sample has fallen, from 21 in SIR 21 and 10 in SIR 25, to 7 in SIR 26.

Using college accounts data combined with the SIR, we estimate that there are around 163,000 individuals (headcount) working in FE colleges in England.¹⁰ Note that this figure is estimated for all colleges in England, of which we only have a sample in the SIR dataset.

Figure 3. College providers in SIR 26



Source: Frontier Economics analysis of SIR 26 data

⁹ This is over half of all GFECs in England (<https://www.aoc.co.uk/about-colleges/research-and-stats/key-further-education-statistics>).

¹⁰ The 2017/18 college accounts data can be found at <https://www.gov.uk/guidance/esfa-financial-management-college-accounts>.

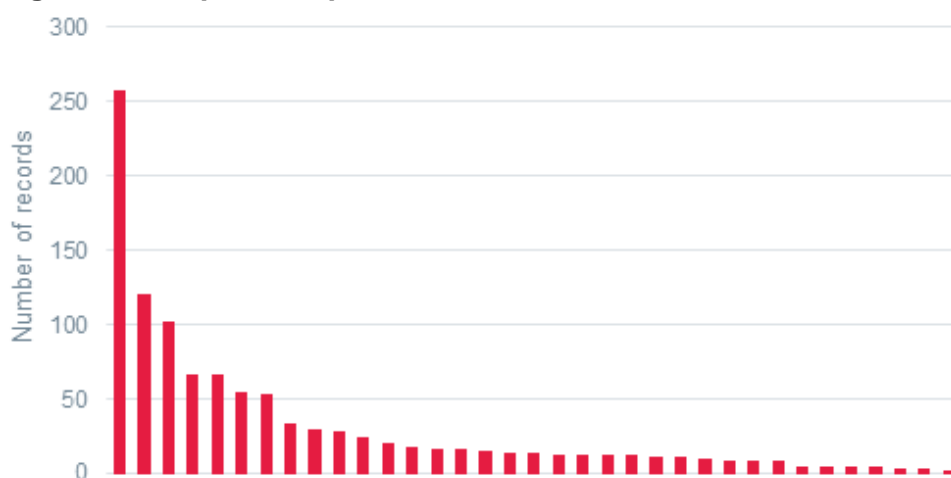
Independent providers

There are 35 independent providers in our sample, down from 47 in SIR 25. Figure 4 below shows the distribution of these providers, in terms of the number of records submitted.

As in SIR 25, there are a small number of providers with a relatively large number of records (the largest four providers make up over half of the records for independent providers), and a long tail of smaller providers making up the rest of the distribution.

Using individualised learner record data combined with the SIR,¹¹ we estimate that there are around 32,000 individuals (headcount) working in independent FE providers in England. Note that this figure is estimated for all independent providers in England, of which we only have a sample in the SIR dataset.

Figure 4. Independent providers in SIR 26



Source: Frontier Economics analysis of SIR 26 data

¹¹ [https://www.gov.uk/government/collections/individualised-learner-record-ilr#2017-to-2018-individualised-learner-record-\(ilr\)-data](https://www.gov.uk/government/collections/individualised-learner-record-ilr#2017-to-2018-individualised-learner-record-(ilr)-data)

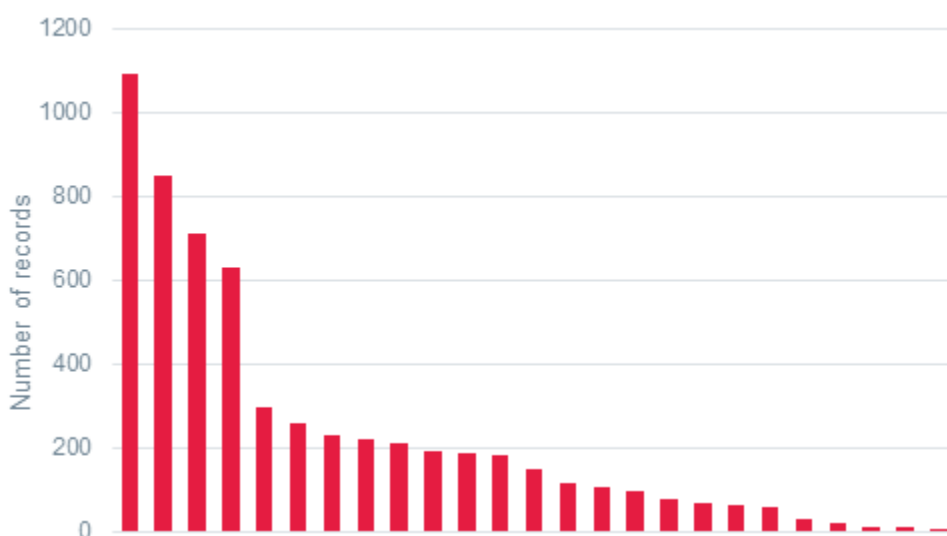
Local authority providers

There are 25 local authority providers in our sample, the same number as in SIR 25. Figure 5 below shows the distribution of these providers, in terms of the number of records submitted.

As with independent providers, there are a small number of providers with a relatively large number of records (the largest four providers make up over half of the records for local authority providers), and a long tail of smaller providers making up the rest of the distribution.

Using individualised learner record data combined with the SIR,¹² we estimate that there are around 19,000 individuals (headcount) working in local authority FE providers in England. Note that this figure is estimated for all local authority providers in England, of which we only have a sample in the SIR dataset.

Figure 5. Local authority providers in SIR 26



Source: Frontier Economics analysis of SIR 26 data

¹² [https://www.gov.uk/government/collections/individualised-learner-record-ilr#2017-to-2018-individualised-learner-record-\(ilr\)-data](https://www.gov.uk/government/collections/individualised-learner-record-ilr#2017-to-2018-individualised-learner-record-(ilr)-data)

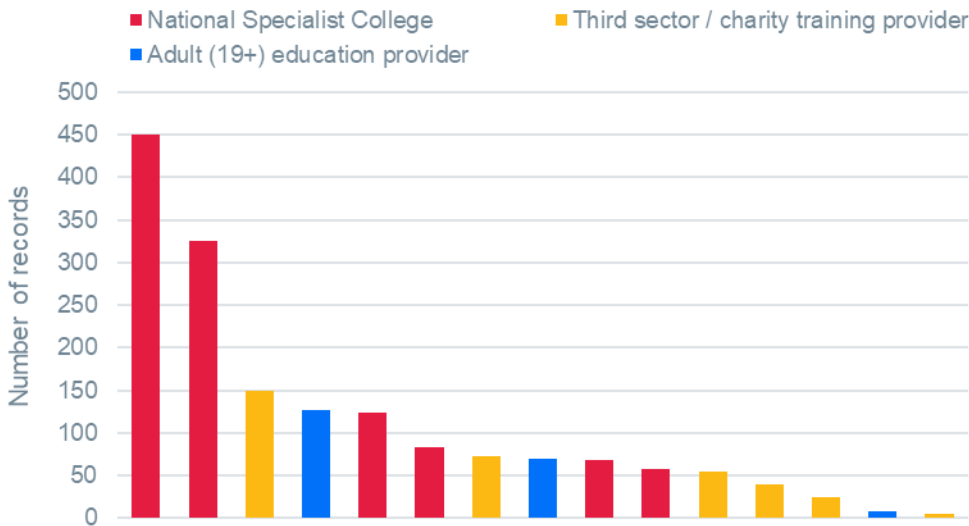
Other providers

There are 15 'other' providers in our sample, the same number as in SIR 25. 'Other' providers are all those not classified in the main categories of colleges, independents, and local authorities. Figure 6 below shows the distribution of these providers, in terms of the number of records submitted.

As with independent and local authority providers, a few large providers dominate the distribution, with the largest three providers making up over half of the records for other providers.

Using individualised learner record data combined with the SIR,¹³ we estimate that there are around 17,000 individuals (headcount) working in other FE providers in England. Note that this figure is estimated for all providers in England that are not colleges, independent providers, or local authorities, of which we only have a sample in the SIR dataset.

Figure 6. Other providers in SIR 26



Source: Frontier Economics analysis of SIR 26 data

¹³ [https://www.gov.uk/government/collections/individualised-learner-record-ilr#2017-to-2018-individualised-learner-record-\(ilr\)-data](https://www.gov.uk/government/collections/individualised-learner-record-ilr#2017-to-2018-individualised-learner-record-(ilr)-data)

3. PROFILE OF THE FE WORKFORCE

In this section we provide an overview of the FE workforce in England based on the sample of providers responding to the 2017-18 Staff Individualised Record (SIR 26) data collection exercise. We describe the characteristics of the workforce, including analysis of occupation, staff turnover, gender, share of part-time/full-time workers, age, ethnicity, sexual orientation, disability status, and annual pay.

Occupation

The SIR 26 dataset included 74,457 records for occupations, with each record representing a single contract.¹⁴ As in SIR 25, teaching staff represent 42% of contracts, the largest occupational group. Learner-facing technical staff (e.g. careers adviser, learning support staff) and admin staff (e.g. admissions officer, HR officer/assistant) are the next-largest occupational groups, comprising 16% and 15% of contracts respectively.

The occupation groups used in SIR 26 replicate those used in SIR 25, and differ slightly to those used in previous years. For example, since SIR 25, the categories 'learner-facing technical staff' and 'non-teaching professional' have been used, and a few new job roles were added in SIR 24 (e.g. Business Development Manager). The new occupation groupings used since SIR 25 more closely resemble the reality of the types of staff that FE colleges employ, and also allow us to distinguish between learner-facing and non-learner-facing professional staff.

¹⁴ Despite receiving 90,792 records (after cleaning and removal of invalid records) in total in SIR 26, 16,335 (18.0%) records left the occupation category missing or stated that occupation was unknown, leaving 74,457 records specifying occupation. This is similar to SIR 25, when 18.2% of records left the occupation category missing or stated that occupation was unknown.

Figure 7. Staff breakdown by occupational group

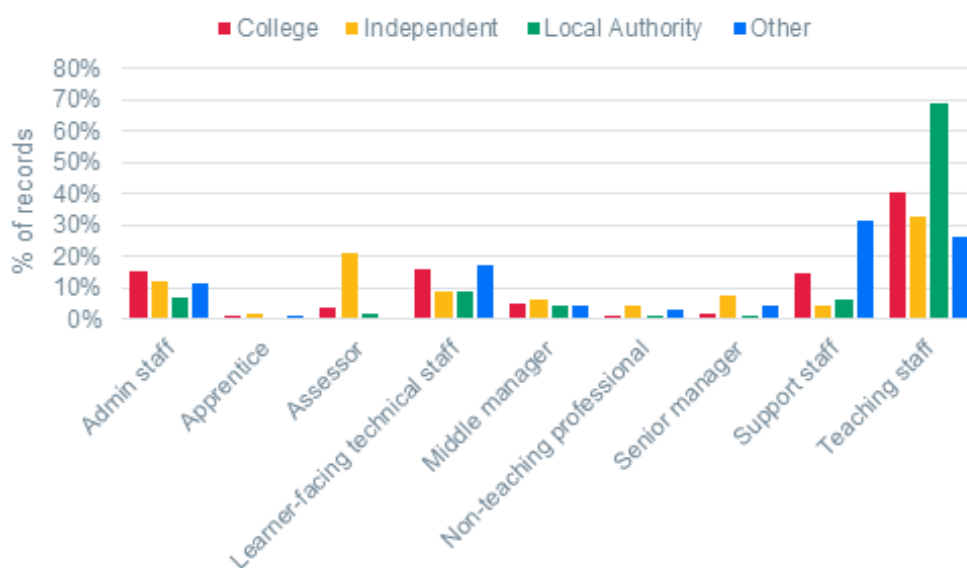
Occupation	Number of records	% of total
Admin staff	10,819	15%
Apprentice	1,019	1%
Assessor	2,851	4%
Learner-facing technical staff	11,782	16%
Middle manager	3,651	5%
Non-teaching professional	1,152	2%
Senior manager	1,231	2%
Support staff - caring	1,178	2%
Support staff - other	5,224	7%
Support staff - technical	3,753	5%
Support staff - trades	784	1%
Teaching staff	31,013	42%
Total	74,457	100%

Source: Frontier Economics analysis of SIR 26 data

Note: records are not reported on an FTE basis – each record simply represents one contract in the SIR 26 data, not necessarily one full-time equivalent worker.

Figure 8 shows how the staff breakdown by occupational group differs across FE provider types. As in SIR 25, ‘other’ providers and independent providers have significantly lower proportions of teaching staff than colleges and local authority providers (26% and 33% at other providers and independents, compared to 40% and 69% at colleges and local authorities). Other providers make up this shortfall with a higher proportion of support staff and learner-facing technical staff, while independent providers have a notably higher share of their workforce classified as assessors.

Figure 8. Staff breakdown by occupation and provider type

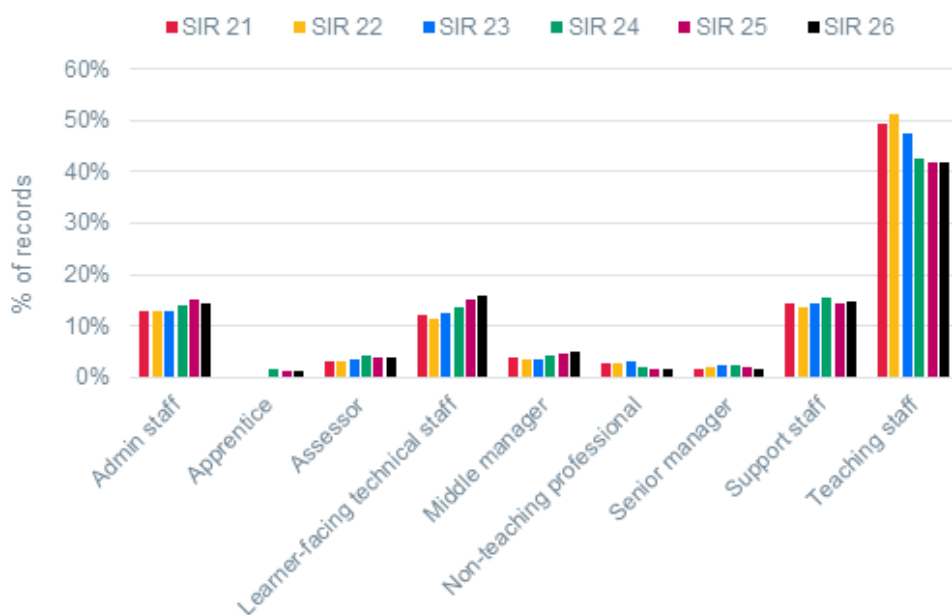


Source: Frontier Economics analysis of SIR 26 data

Figure 9 below shows the distribution of occupations (across all provider types) over time. The proportion of teaching staff has continued to decline in SIR 26, while the proportion of learner-facing technical staff has continued to rise.

Overall, the changes in occupational distribution that have taken place since SIR 21 are relatively small, but it is important to note that the sample of providers has changed significantly since SIR 21, making comparisons over the entire period more difficult.

Figure 9. Staff breakdown by occupation, change over time



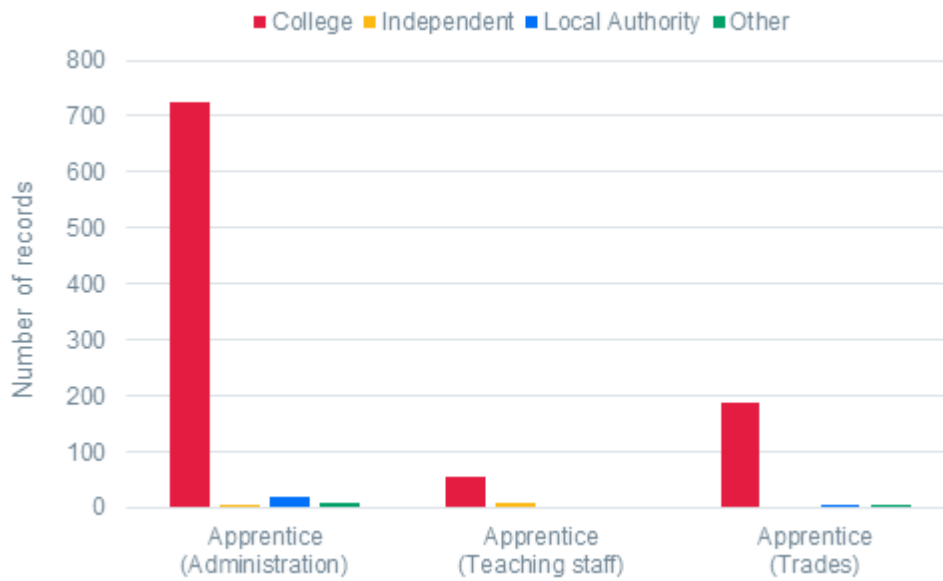
Source: Frontier Economics analysis of SIR 21-26 data

Figure 10 below provides a breakdown of the apprentice occupational category, showing the number of different types of apprentices at different provider types. Apprentices are categorised into those working in (a) administration, (b) teaching, or (c) trades.

As in SIR 25, the vast majority of apprentices are in college providers. Across all provider types, 75% of apprentices are working in administration, 19% in trades, and 6% in teaching. The proportion of apprentices working in administration has increased from 63% in SIR 25, while the proportion working in trades has dropped from 32%.

The number of records submitted by non-college providers is very small, making any comparisons across provider types difficult. For example, both local authority providers and 'other' providers did not submit any records for teaching apprentices, while independent providers did not submit any records for trades apprentices.

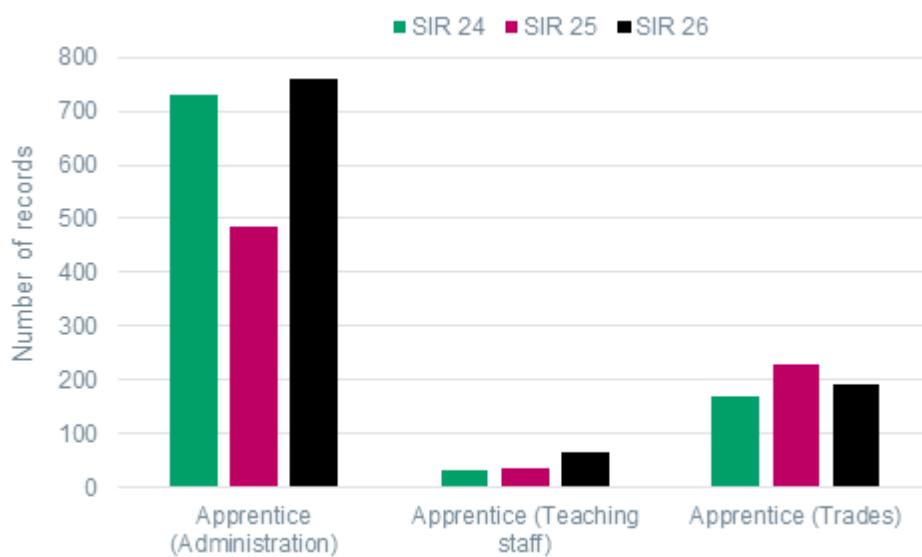
Figure 10. Types of apprentice by provider type



Source: Frontier Economics analysis of SIR 26 data

Figure 11 below shows the change in apprentice numbers between SIR 24 and SIR 26. The drop in administration apprentices between SIR 24 and SIR 25 has been reversed in SIR 26, while the (low) number of teaching apprentices has continued to rise.

Figure 11. Types of apprentice, change over time



Source: Frontier Economics analysis of SIR 24-26 data

Terms of employment

Figure 12 below shows the distribution of employment types in the sample. Over three-quarters of staff are on permanent contracts. Casual, fixed term, and zero hours contracts are the other key categories.

Since SIR 25, the proportion of permanent staff has fallen from 78.0% to 75.7%, while the proportion of casual staff has risen from 7.4% to 9.9%. The prevalence of zero hours contracts has remained roughly constant between SIR 25 and SIR 26. The proportion of zero hours contracts has fallen slightly since SIR 25 (from 5.2%) but this is due to the increase in the total number of records received in SIR 26: the number of records with zero hours contracts has risen slightly (from 3,323).

Figure 12. Number of records by employment type

Terms of employment	Number of records	% of total
Casual staff	7,616	9.9%
Employed through an agency	159	0.2%
Fixed term staff	7,288	9.5%
Permanent staff	58,311	75.7%
Self-employed	70	0.1%
Voluntary staff	84	0.1%
Zero hours contract	3,501	4.5%
Total	77,029	100%

Source: Frontier Economics analysis of SIR 26 data

Note: records are not reported on an FTE basis – each record simply represents one contract in the SIR 26 data, not necessarily one full-time equivalent worker. In SIR 21-23 data was submitted directly by agencies in response to the SIR data collection exercise. In SIR 24-26, however, this data has not been available; records of staff classified as ‘Employed through an agency’ have been submitted by FE providers themselves, meaning a large drop in the number of staff classified as ‘Employed through an agency’.

Figure 13 shows how the distribution of employment type varies across provider types. Independent providers have over 80% permanent staff, compared to less than 50% at local authorities. The use of zero hours contracts shows the opposite pattern – 8.9% of contracts at local authority providers are on zero hours; at independent providers this is just 0.5%.

Independent providers and local authority providers have both seen large declines in the proportion of permanent staff and large increases in the proportion of casual staff. In SIR 25, independent providers had 0.7% of staff on casual contracts and 91.4% on permanent contracts. In SIR 26, 6.1% are on casual contracts and 80.2% are on permanent contracts.

Similarly, for local authority providers, SIR 25 saw 15.7% of staff on casual contracts and 68.8% on permanent contracts. In SIR 26, 40.7%

are on casual contracts and 45.7% are on permanent contracts.¹⁵

Figure 13. Percentage of records by employment type and provider type

Terms of employment	% of all records			
	College	Independent	Local Authority	Other
Casual staff	8.3%	6.1%	40.7%	2.7%
Employed through an agency	0.2%	0.0%	1.2%	0.0%
Fixed term staff	9.8%	7.3%	3.6%	11.3%
Permanent staff	77.2%	80.2%	45.7%	83.7%
Self-employed	0.0%	5.9%	0.0%	0.9%
Voluntary staff	0.1%	0.0%	0.0%	0.0%
Zero hours contract	4.4%	0.5%	8.9%	1.4%

Source: Frontier Economics analysis of SIR 26 data

¹⁵ As noted above, these changes could be due to a sample effect rather than changes in the distribution of employment types across the entire population of independent providers and local authority providers.

Turnover and in-year employment change

In this section, we look at two measures of changes in employment:

- 1) **Turnover rate.** The number of contracts ending within 2017-18 as a proportion of all contracts at the beginning of the year.
- 2) **In-year employment change.** The change in the total number of contracts between the beginning and end of 2017-18, as a proportion of all contracts at the beginning of the year. This is the same measure as has been reported in previous versions of this report, but we have renamed the variable to “in-year” employment change to clarify that this measure **does not** look at the change from one year to the next, but rather the change in employment between the beginning and end of a single year (in the case of this report, the 2017-18 academic year).

Figure 14. Turnover and in-year employment change, by occupation

Occupation	Turnover	In-year employment change
Admin staff	15%	1.5%
Apprentice	39%	9.2%
Assessor	14%	1.1%
Learner-facing technical staff	13%	4.7%
Middle manager	13%	-2.7%
Non-teaching professional	12%	-1.1%
Senior manager	14%	-0.5%
Support staff - caring	20%	2.3%
Support staff - other	16%	-0.5%
Support staff - technical	13%	-0.2%
Support staff - trades	11%	-0.3%
Teaching staff	12%	2.1%

Source: Frontier Economics analysis of SIR 26 data

Most occupations' turnover rates are similar to those observed in SIR 25. The key differences are:

- Those working as 'caring' support staff had a turnover rate of 11% in SIR 25; this has now risen to 20%.
- Those working as 'other' support staff had a turnover rate of 12% in SIR 25; this has now risen to 16%.

Most occupations saw negligible changes in employment during SIR 26. Despite their high turnover rates, both apprentices and 'caring' support staff saw increases in the level of employment between the beginning and end of SIR 26.

Figure 15 below shows that there is significant variation in employment changes in different occupations across provider types. For example, while the number of teaching staff employed in colleges, local authorities, and 'other' providers stayed constant or rose only slightly,

independent providers saw a 33% increase in employment of teaching staff.

The small sample sizes that often need to be relied upon for this disaggregated analysis help explain why the figures for independent, local authority, and other providers are often more extreme than those for college providers. These small sample sizes also mean that Figure 15 should be interpreted with caution when trying to make any inferences about the state of the sector as a whole.

Figure 15. Turnover and in-year employment change, by occupation and provider type

Occupation	College		Independent		Local Authority		Other	
	Turnover	Change	Turnover	Change	Turnover	Change	Turnover	Change
Admin staff	16%	1%	6%	28%	4%	13%	14%	21%
Apprentice	40%	9%	8%	15%	27%	27%	25%	-13%
Assessor	15%	1%	13%	2%	8%	-2%	0%	0%
Learner-facing technical staff	13%	4%	15%	29%	4%	9%	12%	11%
Middle manager	14%	-3%	7%	7%	7%	4%	13%	5%
Non-teaching professional	13%	-1%	6%	-3%	0%	5%	15%	-8%
Senior manager	15%	-2%	0%	5%	7%	13%	11%	5%
Support staff – caring	20%	4%	n/a	n/a	0%	0%	20%	-6%
Support staff - other	16%	0%	13%	-13%	4%	12%	31%	-15%
Support staff - technical	13%	-1%	5%	23%	1%	4%	8%	12%
Support staff - trades	11%	0%	n/a	n/a	0%	0%	13%	-13%
Teaching staff	12%	2%	2%	33%	7%	5%	10%	0%

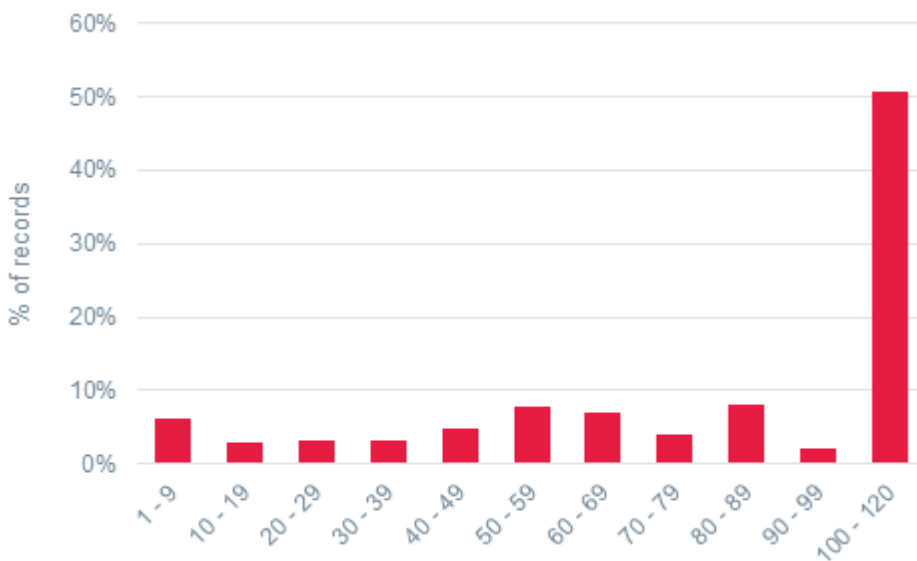
Source: Frontier Economics analysis of SIR 26 data

Part-time work

Figure 16 below shows the distribution of fraction of full-time worked across all providers in SIR 26. Note that this measures the number of hours **actually worked**, as opposed to the number of **contracted hours**.¹⁶

Looking across all provider types, 47% of staff work part-time (we define part-time as working less than 90% of the full-time hours for the job role in question). As shown in Figure 16, this 47% of staff working part-time are spread across a range of the distribution, from those working just 1-9% of full-time to those working 80-89% of full-time.

Figure 16. Shares of staff by fraction of full-time and provider type



Source: Frontier Economics analysis of SIR 26 data

Figure 17 below shows the distribution of fraction of full-time worked across each provider type.

The proportion working part-time varies across provider types: from relatively low at independent providers (35%), higher at other providers (40%) and colleges (46%), up to much higher at local authorities (77%).

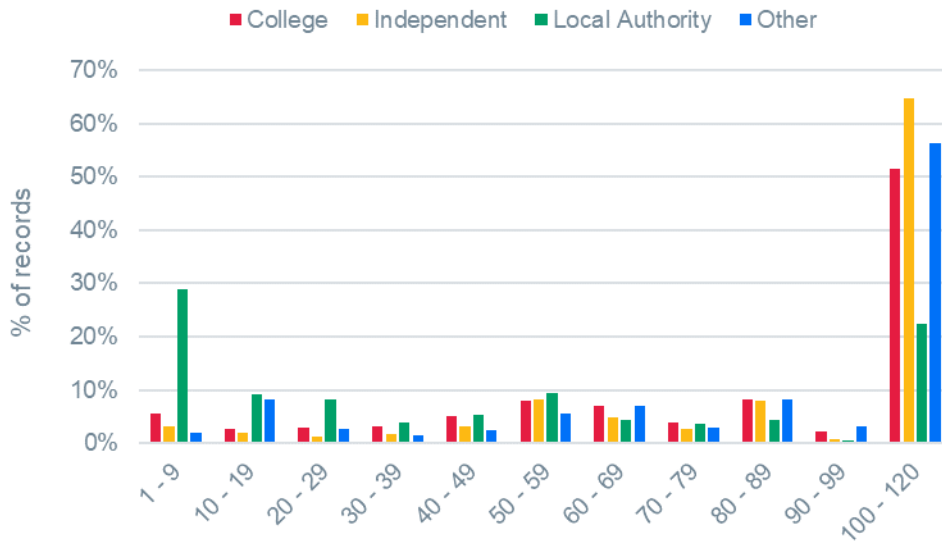
Nearly 30% of staff at local authority providers work less than 10% of full-time. This means that more staff at local authority providers work less than 10% of full-time than work 100-120% of full-time.

At the other end of the distribution, we observe a majority of workers in the 100-120% of full-time category, for all provider types except local authorities. The upper limit of 120% captures the fact that staff may sometimes work slightly more than their full-time hours, but in practice a very small proportion of staff work over 100% full-time.¹⁷

¹⁶ This means that, for example, those on zero hours contracts can have a positive value for hours worked.

¹⁷ Over 97% of staff in the 100-120% full-time category are simply working 100% full-time (across all provider types).

Figure 17. Shares of staff by fraction of full-time and provider type



Source: Frontier Economics analysis of SIR 26 data

The distribution of fraction of full-time worked has not changed significantly over time when looking across all provider types.

Gender

This section looks at two metrics of gender balance in the FE workforce:

- 1) Gender balance by occupation – for all provider types, and for each provider type separately.
- 2) The proportion of men and women working part-time in each provider type.¹⁸

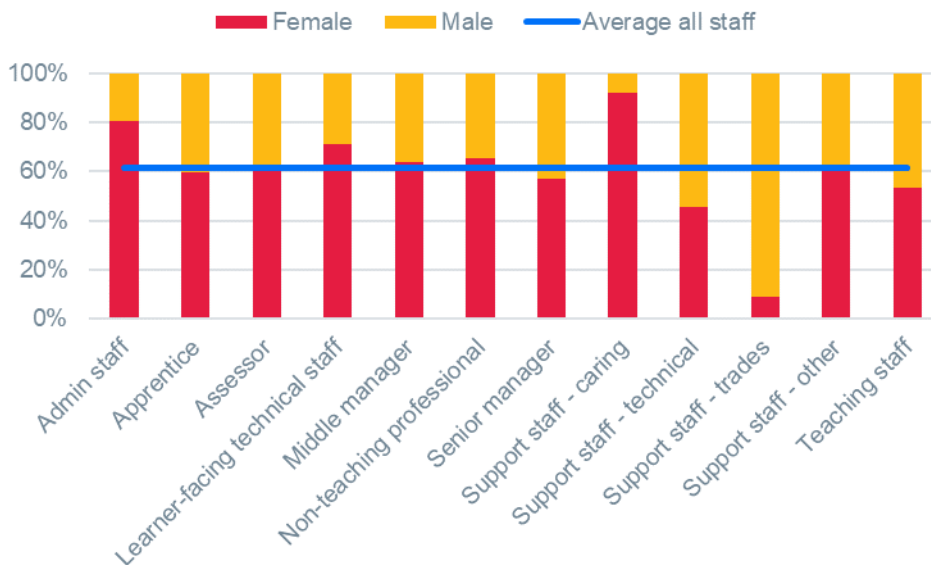
Gender balance – all providers

Figure 18 below shows the gender balance by occupation, across all provider types. The flat blue line indicates the proportion of female staff across all occupations – 61% of the FE workforce is female.

Certain roles show over-representation of men compared to the average – in particular, technical support staff (e.g. finance officer) and trades support staff (e.g. electrician). Teaching staff and senior managers also include a slightly higher proportion of men than average.

The proportion of women in each occupation has not changed substantially since SIR 25. The biggest change was for the smallest occupation, apprentices, which saw the proportion of females increase from 53% in SIR 25 to 59% in SIR 26. This was partly due to the increase in the number of administrative apprentices, which are mostly female, but also due to the proportion of female apprentices increasing in the other two apprentice categories: teaching and trades.

Figure 18. Gender balance by occupation



Source: Frontier Economics analysis of SIR 26 data

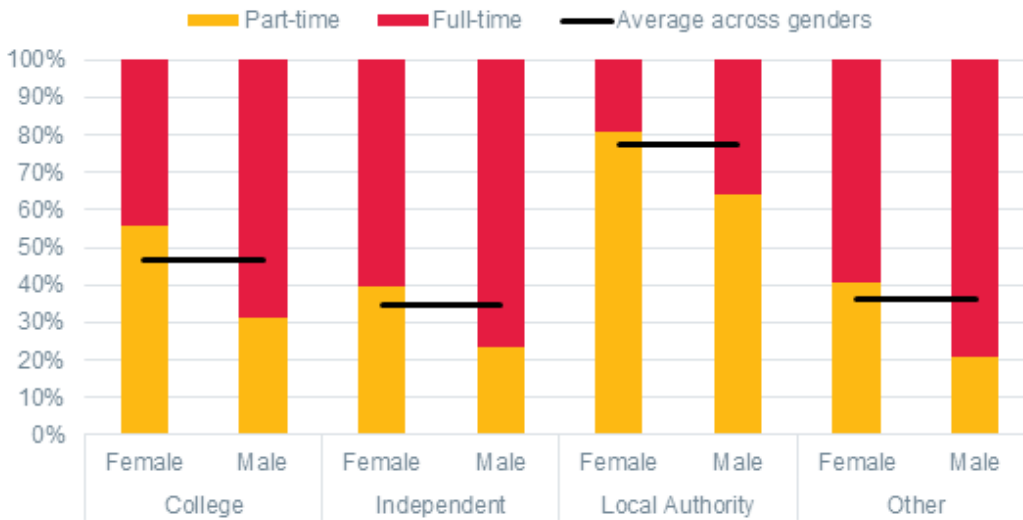
¹⁸ Full-time is defined as working 90% or more of the full-time hours for the job role in question.

Proportion working part-time – male and female

Another important facet of gender comparisons is the proportion of men and women working full-time or part-time. Figure 19 below represents this for the FE workforce in SIR 26, for each provider type.

For all provider types, the proportion of women working part-time is higher than for men. This difference is most noticeable in colleges, where 56% of women work part-time compared to 31% of men.

Figure 19. Proportion of men and women working part-time, by provider type



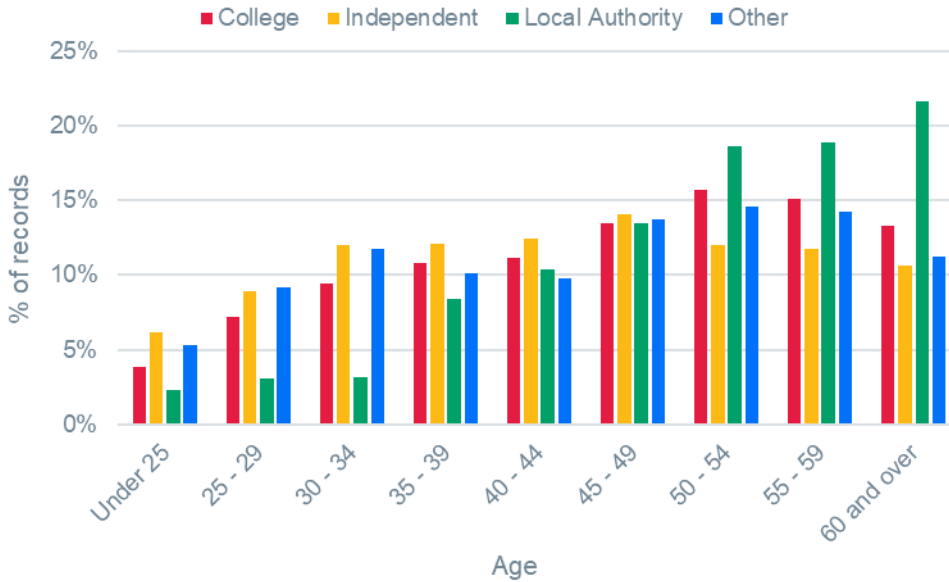
Source: Frontier Economics analysis of SIR 26 data

Note: part-time is defined as working less than 90% of the full-time hours specified for the job in question. Averages across providers are calculated looking only at those records which specified the gender of the individual, and therefore differ slightly to the figures reported above for the percentage of part-time at each provider type.

Age

Figure 20 shows the age distribution of FE staff across provider types. Local authority provider staff are notably older than those of other provider types. Just 17% of staff at local authority providers are 39 or younger (compared to 31% across all providers), and 41% of staff are 55 or over (compared to 28% across all providers).

Figure 20. Age distribution by provider type



Source: Frontier Economics analysis of SIR 26 data

These differences in age distribution are summarised in Figure 21 below, which shows the mean and median age of staff at each provider type. Local authorities have a mean age of 50 compared to 46 across all providers, while independent providers have the youngest staff with a mean of just 44.

Figure 21. Average age by provider type

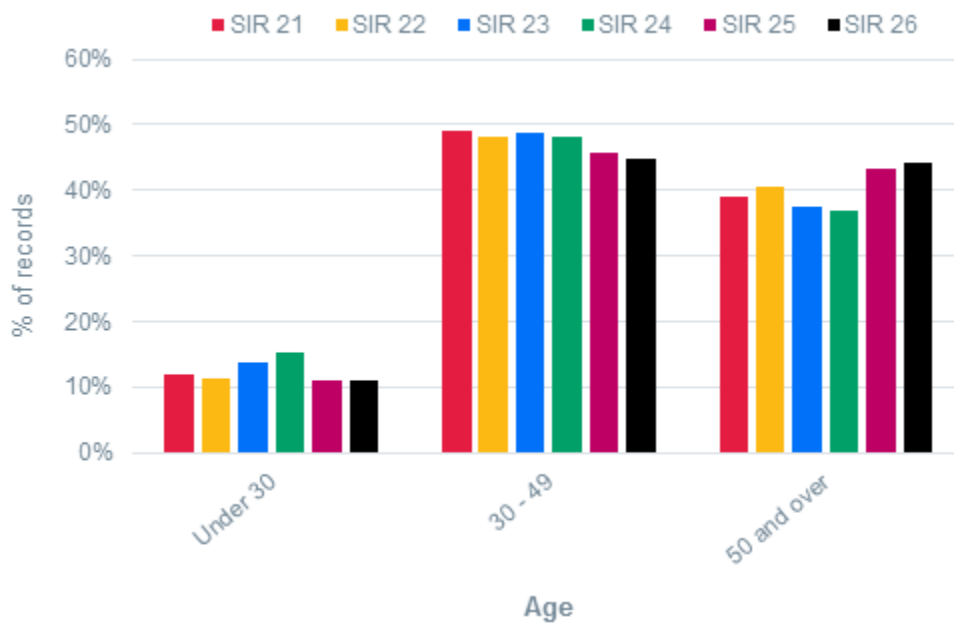
Provider type	Mean age	Median age	Mode age band
All providers	46	47	50 - 54
Colleges	46	47	50 - 54
Independents	44	43	45 - 49
Local authorities	50	52	60 and over
Other providers	45	45	50 - 54

Source: Frontier Economics analysis of SIR 26 data

Figure 22 below shows how the age distribution of the FE workforce has changed over time (for simplicity, we have grouped together different age bands). Since SIR 21, and particularly since SIR 24, the proportion of staff under 49 has fallen while the proportion 50 and over has risen.¹⁹

¹⁹ This pattern remains the same when we look solely at college providers. The increase in the proportion of the workforce that is 50 and over is therefore not due to the introduction of non-college providers such as local authorities in SIR 24.

Figure 22. Age distribution, change over time



Source: Frontier Economics analysis of SIR 21-26 data

Figure 23 below shows that these changes in the age distribution have had relatively small impacts on the average age of the FE workforce over time. Mean and median age have both increased by 2 years since SIR 24, but the age band within which the highest proportion of workers fall has remained 50-54 since SIR 21.

Figure 23. Average age, change over time

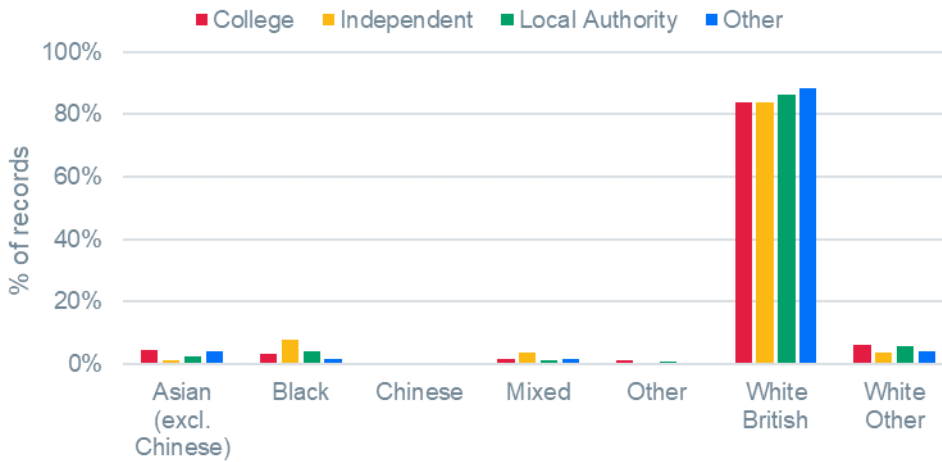
Year	Mean age	Median age	Mode age band
SIR 21	45	46	50 – 54
SIR 22	45	46	50 – 54
SIR 23	44	45	50 – 54
SIR 24	44	45	50 – 54
SIR 25	46	47	50 – 54
SIR 26	46	47	50 – 54

Source: Frontier Economics analysis of SIR 21-26 data

Ethnicity

As in SIR 25, the FE workforce is 80-90% white British across all provider types, as shown in Figure 24. “White Other”, “Asian (excl. Chinese)”, and “Black” are the next largest categories.

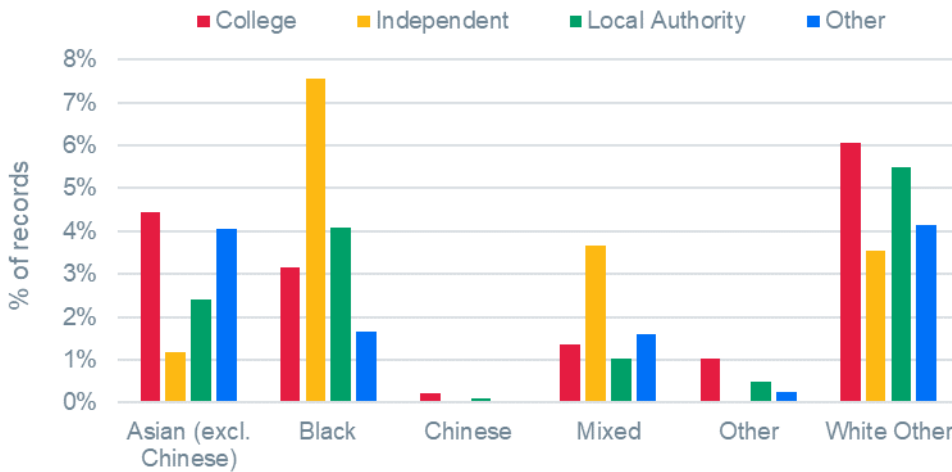
Figure 24. Ethnicity of staff by provider type



Source: Frontier Economics analysis of SIR 26 data

Figure 25 looks further into the ethnicity split in the FE workforce by excluding white British staff. This shows that – of the relatively small number of non-white British staff – “White Other” is the largest ethnicity in colleges, local authorities, and other providers. Independent providers, in contrast, have “Black” and “Mixed” as their second- and third-largest ethnicities after white British.

Figure 25. Ethnicity of staff by provider type, excl. white British



Source: Frontier Economics analysis of SIR 26 data

The ethnicity distribution of the FE workforce has not changed substantially over time.

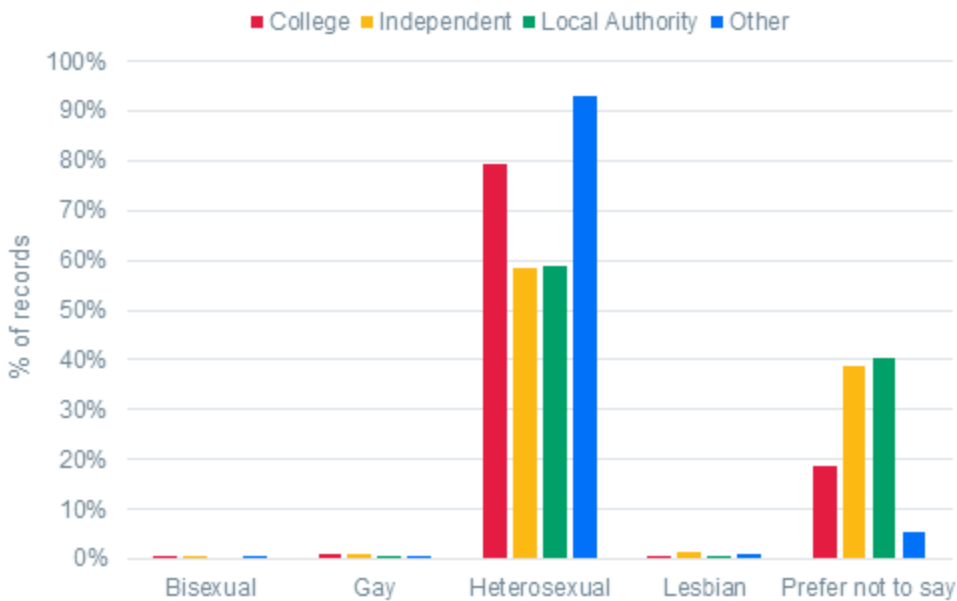
Sexual orientation

Figure 26 shows the sexual orientation of the FE workforce by provider type. The proportion of the FE workforce identifying as bisexual, gay or lesbian is similar across provider types – between 0% and 1.5% – but the proportion identifying as heterosexual varies in direct (negative) correlation with the proportion responding “Prefer not to say”.

Across all provider types, 79% of the workforce self-report as heterosexual, and 19% state that they prefer not to answer the question.

After falling from around 23% in SIR 21-23 to 16% in SIR 25, the proportion of respondents answering “Prefer not to say” has risen to 19% in SIR 26.

Figure 26. Sexual orientation of staff by provider type



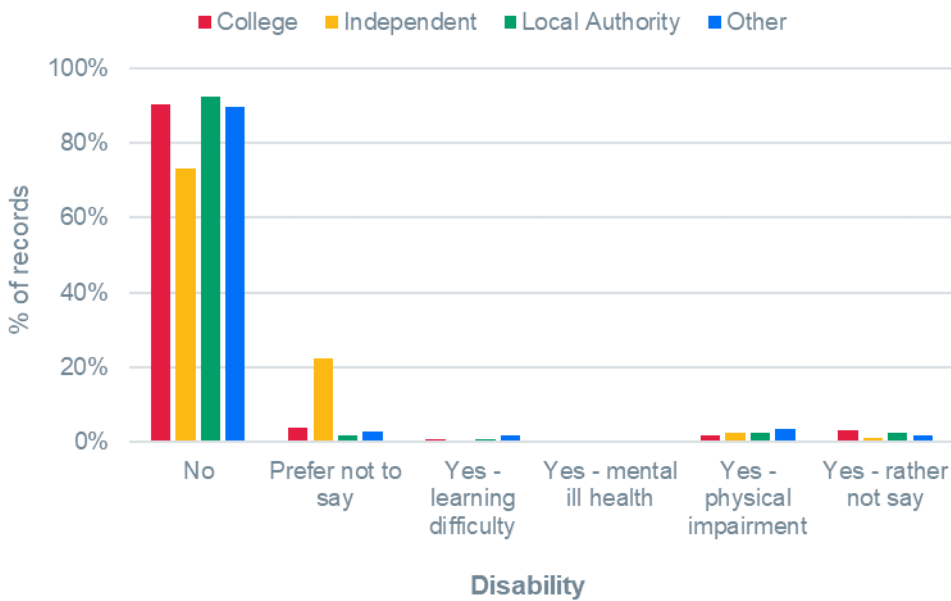
Source: Frontier Economics analysis of SIR 26 data

Disability

Figure 27 shows the disability status of the FE workforce. As in SIR 25, the vast majority of staff at each provider type do not have a disability.

Independent providers have seen a large jump in the proportion of respondents answering “Prefer not to say”. In SIR 25, this was just 6%; in SIR 26, this is 22%. Correspondingly, independent providers have seen the proportion of respondents answering “No disability” fall from 89% to 73%.

Figure 27. Disability status of staff by provider type

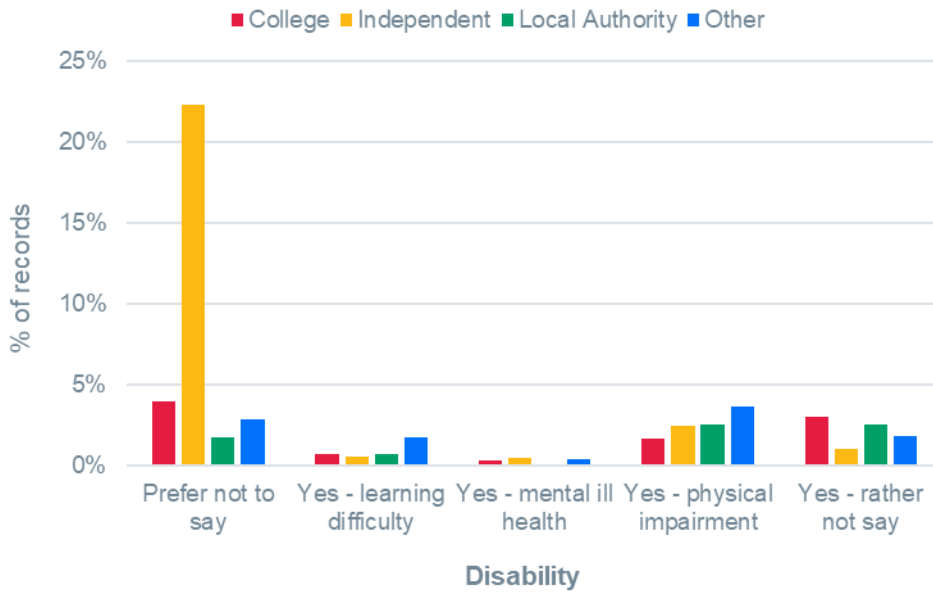


Source: Frontier Economics analysis of SIR 26 data

We look further into the disability status of FE staff by looking only at responses other than “No disability”.

Of those respondents that specify their condition, physical impairment is the largest category of disability.

Figure 28. Disability status of staff by provider type, excl. "No disability" responses



Source: Frontier Economics analysis of SIR 26 data

Annual pay

Figure 29 below shows the distribution of annual pay for staff in FE colleges. For comparability purposes, this analysis has been limited to full-time staff, and those who were in their job for the whole of the 2017-18 academic year.

As a result of these restrictions, the sample sizes in various pay bands for non-college providers are very low; we therefore restrict Figure 29 to college providers only.

Figure 29. Annual gross pay distribution, FE colleges



Source: Frontier Economics analysis of SIR 26 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of 2017-18.

The college pay distribution is clustered in the range £15,000 - £40,000, with a relatively even spread across this range. 85% of staff were in this pay range. A further 4% were on pay below £15,000 and 11% had annual pay above £40,000.

As shown in Figure 30 below, mean pay across all provider types was £29,500 and median pay was £28,200. This compares to mean pay of £37,300 and median pay of £29,900 across all full-time workers in England in 2017.²⁰

In contrast to SIR 25, when 'other' providers had the lowest mean pay of all provider types, mean pay in SIR 26 was highest at other providers. This is due to the fact that there are more staff (though sample sizes are still small) at the high end of the pay distribution at other providers, pulling up *mean* pay in particular. This is in turn largely due to the influence of one provider with a small number of highly paid staff.

Given the influence of outliers on mean pay, median pay may be a more

²⁰ Data from the Annual Survey of Hours and Earnings (ASHE), available at <https://www.nomisweb.co.uk/>.

reliable way to compare across provider types. Looking at median pay, college providers still pay the most on average, as in SIR 25.

Figure 30. Average pay by provider type

Provider type	Mean pay	Median pay
All providers	£29,500	£28,200
Colleges	£29,500	£28,300
Independents	£25,900	£25,500
Local authorities	£29,100	£26,600
Other providers	£31,800	£27,300

Source: Frontier Economics analysis of SIR 26 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of 2017-18.

The distribution of annual pay has not changed significantly over time, as reflected by the small changes in mean and median pay shown in Figure 31. Mean and median pay has remained similar between SIR 25 and SIR 26.²¹

Figure 31. Average pay, change over time

Year	Mean pay	Median pay
SIR 21	£27,900	£27,500
SIR 22	£27,400	£27,500
SIR 23	£29,000	£27,500
SIR 24	£28,800	£27,300
SIR 25	£29,800	£28,500
SIR 26	£29,500	£28,200

Source: Frontier Economics analysis of SIR 21-26 data

Figure 32 below breaks down differences in pay across providers by illustrating the median annual pay by provider type for different occupations. Due to low sample sizes available for certain occupations at non-college providers, we restrict our analysis to admin staff, middle managers, senior managers, and teaching staff. We exclude 'other' providers entirely due to the low sample sizes available for most occupations at other providers.²²

The college pay premium is most stark for senior managers, for whom median annual pay is £59,400 at colleges, compared to £57,300 across all provider types and £32,800 at independent providers.

Teaching staff also earn higher median pay at colleges than non-college providers - £31,800 compared to £25-26,000 at independents and local authorities.

²¹ This does not account for price inflation, i.e. we are looking at nominal pay rather than real pay.

²² We restrict our analysis to those provider-occupation combinations with a sample size of at least 10.

Figure 32. Median annual pay by provider type and occupation



Source: Frontier Economics analysis of SIR 26 data

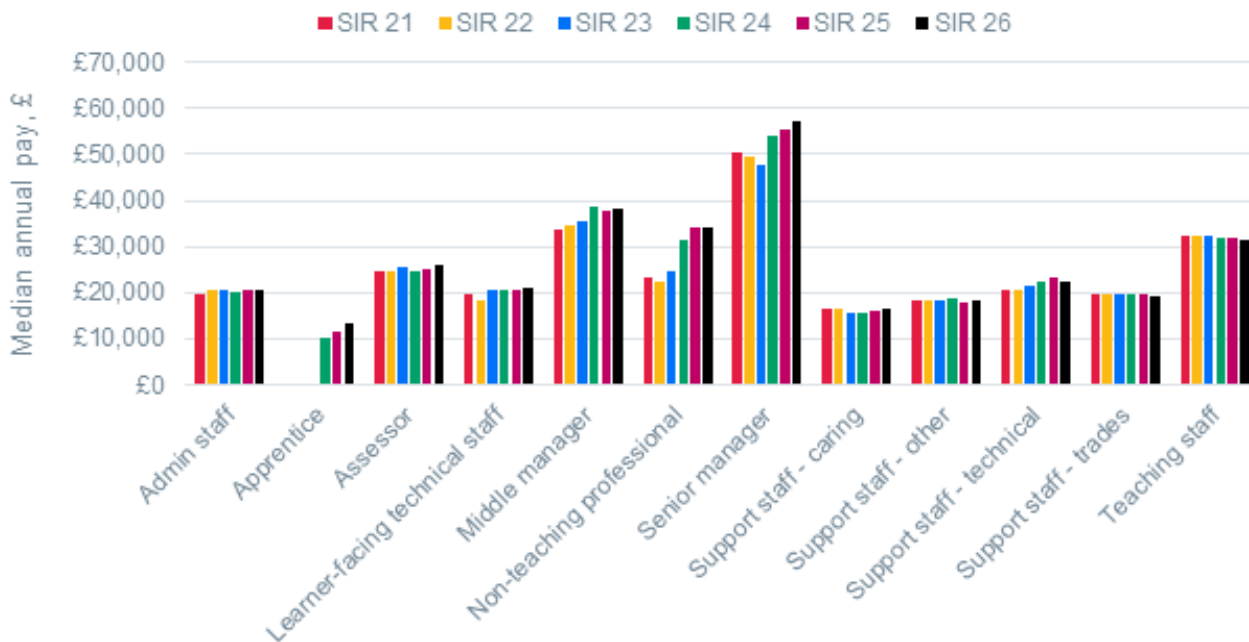
Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of 2017-18.

Figure 33 shows how median annual pay for each occupation has changed over time.

Three occupations saw declines in their median annual pay between SIR 25 and SIR 26: technical support staff (-2.7%), trades support staff (-3.8%), and teaching staff (-0.4%). Of the rest, most saw relatively small changes in median pay, although median pay for apprentices rose by 12.5%, the highest of all occupations.²³ After falling between SIR 21 and SIR 23, median pay for senior managers continued to rise in SIR 26 (+3.5%).

²³ All apprentice types (administration, teaching, and trades) saw an increase in median pay between SIR 25 and SIR 26.

Figure 33. Median annual pay by occupation, change over time



Source: Frontier Economics analysis of SIR 21-26 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of the academic year.

Figure 34 below also breaks down annual pay differences, this time across regions. We only include college providers for this analysis, given the small sample sizes available for non-college provider types when looking at a regional level.

As expected, Greater London pay is generally higher than in other regions. For example, teachers’ median annual pay is £36,600 in London compared to £31-33,000 in the South, Midlands and East, and the North.

Figure 34. Median annual pay by region and occupation (colleges only)



Source: Frontier Economics analysis of SIR 26 data

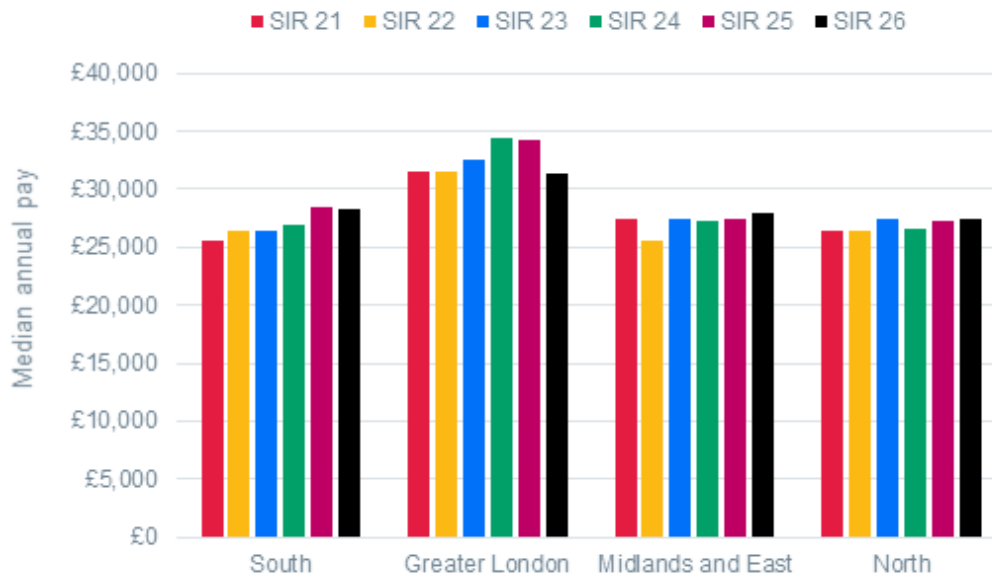
Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of 2017-18.

Figure 35 below shows how regional pay discrepancies have changed over time, across all occupations. As above, we only include college providers for this analysis.

Figure 35 shows that the South has seen the largest increase (11.1%) in median pay since SIR 21, while the Midlands and East has seen median pay rise by just 1.8% over the same period. Although median pay remains highest in Greater London, the region saw a drop of 8.0% in median pay between SIR 25 and SIR 26.

This analysis does not account for inflation across the period from SIR 21 to SIR 25, which would reduce *real* (i.e. inflation-adjusted) pay increases.

Figure 35. Regional pay discrepancies, change over time (colleges only)



Source: Frontier Economics analysis of SIR 21-26 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of the academic year.

Below we look in detail at differences in median annual pay between genders.

Figure 36 shows that the gender pay gap is 9.3% across all provider types when looking at median pay (as above, this is only for full-time staff who were employed for the entire 2017-18 academic year). While colleges – the overwhelming majority of the sample – have a 9.3% gender pay gap, this is reversed in local authorities and independent providers, where median pay for female staff is higher than for male staff.

Other providers have a large pay gap between male and female staff when looking at median pay. This contrasts to SIR 25, when median pay of male staff was 10% below that of female staff in other providers. However, due to the fact that we are only looking at full-time staff and contracts that were in existence throughout the whole of the academic year (to ensure comparability), when we also split by gender the sample sizes on which we rely become small. Therefore, median pay figures and the gender pay gap for other providers is influenced heavily from year to year by the providers that submit data (as is, to a slightly lesser extent, the gender pay gap for independents and local authorities).

Figure 36. Gender pay gap by provider type

Provider type	Median pay - male staff	Median pay - female staff	Male-female % pay gap
All providers	£29,500	£26,800	9.3%
Colleges	£29,600	£26,800	9.3%
Independents	£25,000	£25,700	-2.9%
Local authorities	£26,000	£26,600	-2.3%
Other providers	£29,600	£24,700	16.5%

Source: Frontier Economics analysis of SIR 26 data

The gender pay gap has fallen since SIR 25, when the gap across all provider types was 9.7%.

4. PROFILE OF FE TEACHING STAFF

In this section we look specifically at the characteristics of teaching staff within FE, the largest occupational category accounting for 42% of staff.

Age

Figure 37 below compares the proportion of teaching staff in different age bands compared to all staff, across all provider types. Other than a notably lower proportion of teaching staff who are under 25, there are only minor differences between the age distribution of teaching staff and all staff.

The age distribution of teaching staff is similar to that observed in SIR 25, although mean age has risen from 46 in SIR 25 to 47 in SIR 26.

Figure 37. Age of teaching staff compared to all staff

Age	Proportion – all staff	Proportion – teaching staff
Under 25	4%	1%
25 – 29	7%	6%
30 – 34	9%	11%
35 – 39	11%	12%
40 – 44	11%	12%
45 – 49	14%	15%
50 – 54	16%	17%
55 – 59	15%	15%
60 and over	13%	12%
Mean age	46	47
Median age	47	47
Mode age band	50 – 54	50 – 54

Source: Frontier Economics analysis of SIR 26 data

Ethnicity

As shown by Figure 38 below, the ethnicity of teaching staff does not differ significantly from the ethnicity of all staff, when looking across all provider types.

The ethnicity distribution of teaching staff is very similar to that observed in SIR 25.

Figure 38. Ethnicity of teaching staff compared to all staff

Ethnicity	Proportion – all staff	Proportion – teaching staff
Asian (excl. Chinese)	4%	4%
Black	3%	3%
Chinese	0.2%	0.2%
Mixed	1%	1%
Other	1%	1%
White British	84%	84%
White Other	6%	6%

Source: Frontier Economics analysis of SIR 26 data

Subject taught

Figure 39 below shows the number of teaching staff (in FTE terms) in the SIR 26 dataset for each subject. The three largest subjects by number of staff are Arts, media and publishing; Health, public services and care; and Engineering and manufacturing technologies.

Figure 39. Number of staff by subject taught (teaching staff only)

Subject	% of total
Arts, media and publishing	11.2%
Health, public services and care	10.3%
Engineering and manufacturing technologies	9.7%
Preparation for life and work	8.3%
Construction, planning and the built environment	7.3%
English (including literacy)	7.1%
Leisure, travel and tourism	7.1%
Business, administration and law	6.4%
Mathematics	6.1%
Retail and commercial enterprise	4.7%
Agriculture, horticulture and animal care	4.2%
ICT	4.0%
Science	3.9%
Humanities	2.7%
Education and Training	2.0%
Social Sciences	1.7%
Languages, literature and culture	1.5%
Community development	1.3%
Family learning	0.6%

Source: Frontier Economics analysis of SIR 26 data

Note: this measures the number of staff for each subject, as opposed to the number of contracts. We calculate figures on an FTE basis, meaning that if a single teacher spends 50% of their time teaching ICT and 50% of their time teaching Science, they will contribute 0.5 towards the totals of both ICT and Science.

Annual pay

Median annual pay for different occupations is shown in Figure 40 below. Median pay for all teaching staff is £31,600. College teachers (£31,800) are paid more than teachers at independents (£26,000), local authorities (£25,500), and other providers (£22,400).

Mean pay for all teaching staff is slightly below median pay, at £31,400. In comparison, mean annual pay for secondary schoolteachers is £34,700.²⁴

Teaching staff have the 4th-highest median pay of all occupations, when looking across all provider types.

Figure 40. Median annual pay by provider type and occupation



Source: Frontier Economics analysis of SIR 26 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of 2017-18.

Figure 30 below shows mean and median pay for different provider types. We have excluded other providers from this analysis due to the low number of observations available.

Teacher pay is higher at colleges than independent and local authority providers, as is the case when looking across all occupations.

The pay of teachers relative to other occupations varies across provider types:

- In colleges, teachers (£31,800) are paid more than the median across all occupations (£28,300).
- At independent providers, teacher pay (£26,000) is slightly above average pay across all occupations (£25,500).
- At local authority providers, median teacher pay (£25,500) is below the general average (£26,600).

²⁴ Based on provisional 2018 gross annual pay figures for 'Secondary education teaching professionals' in the Annual Survey of Hours and Earnings (ASHE).

Figure 41. Average pay by provider type (teaching staff only)

Provider type	Mean pay	Median pay
All providers	£31,400	£31,600
Colleges	£31,500	£31,800
Independents	£25,300	£26,000
Local authorities	£25,800	£25,500

Source: Frontier Economics analysis of SIR 26 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of 2017-18.

Figure 42 shows that average pay for teaching staff has not changed substantially over time. The pattern of average pay over time is very similar when looking only at colleges, the main difference being that pay in colleges tends to be slightly higher than in other provider types.

Figure 42. Average pay, change over time (teaching staff only)

Year	Mean pay	Median pay
SIR 21	£32,000	£32,500
SIR 22	£31,900	£32,500
SIR 23	£32,000	£32,500
SIR 24	£31,400	£32,000
SIR 25	£31,400	£31,800
SIR 26	£31,400	£31,600

Source: Frontier Economics analysis of SIR 21-26 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of the academic year.

Figure 43 replicates the analysis of regional pay discrepancies presented in Section 3, specifically for teaching staff. This shows that teacher pay has grown in Greater London and the South since SIR 21, while teacher pay in the Midlands & East and the North has fallen.

Figure 43. Regional pay discrepancies for teaching staff, change over time (colleges only)



Source: Frontier Economics analysis of SIR 21-26 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of the academic year.

Figure 44 below shows median pay for teachers in different subject areas. The distribution of pay across subjects is similar to that presented in previous versions of the SIR report.²⁵

The results for multiple subject areas rely on small samples, however (in particular, Family learning and Community development).

²⁵ We are aware that the lack of agency staff in our dataset may affect our results for median pay, given that some subjects (such as 'Engineering and manufacturing technologies') have many teachers recruited and paid via agencies. Also note that our results differ when looking across the entire SIR 26 dataset, instead of only including those who worked full-time throughout the entire academic year. For example, when using the entire dataset, the median pay of Engineering and Manufacturing Technologies teachers is 2nd-highest of all subjects.

Figure 44. Median pay by subject (teaching staff only)

Subject	Median pay
Agriculture, horticulture and animal care	£28,200
Arts, media and publishing	£32,100
Business, administration and law	£31,800
Community development	£30,600
Construction, planning and the built environment	£32,800
Education and Training	£33,900
Engineering and manufacturing technologies	£31,900
English (including literacy)	£30,800
Family learning	£27,200
Health, public services and care	£31,600
Humanities	£33,800
ICT	£33,000
Languages, literature and culture	£32,800
Leisure, travel and tourism	£31,300
Mathematics	£31,100
Preparation for life and work	£30,800
Retail and commercial enterprise	£32,300
Science	£32,900
Social Sciences	£33,000

Source: Frontier Economics analysis of SIR 26 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of 2017-18.

Below we look in detail at differences in median annual pay between genders, specifically for teaching staff.

Figure 45 shows that the gender pay gap is 2.5% across all provider types when looking at median teacher pay (as above, this is only for full-time staff who were employed for the entire 2017-18 academic year). This is down slightly on the 2.9% gap observed in SIR 25. Colleges and local authorities show a similar gender pay gap in favour of men, whereas median teacher pay at independents is the same for male and female staff. We have excluded other providers from this table due to the low number of observations available.

Figure 45. Gender pay gap by provider type (teaching staff only)

Provider type	Median pay - male staff	Median pay - female staff	Male-female % pay gap
All providers	£32,200	£31,400	2.5%
Colleges	£32,400	£31,500	2.7%
Local Authorities	£25,700	£25,100	2.4%
Independents	£26,000	£26,000	0.0%

Source: Frontier Economics analysis of SIR 26 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of 2017-18.

Figure 46 below breaks down median pay by gender as well as by subject. Median pay is higher for male staff than female staff in 11 out of 18 subjects.²⁶

It is important to note that the figures presented in Figure 46 do not account for any differences in age, provider type, region, experience, or other characteristics that may affect an individual's pay. In other words, a gap between the median pay of all males teaching a given subject and the median pay of all females teaching that subject should not be interpreted as necessarily suggesting differential pay for 'equivalent' individuals doing equivalent roles. To determine the gender pay gap on this basis would require a more in-depth study controlling for the multitude of factors (other than gender) that could influence an individual's pay.

Figure 46. Median pay by subject and gender (teaching staff only)

Subject taught	Median pay - male staff	Median pay - female staff	Male-female % pay gap
Agriculture, horticulture and animal care	£29,100	£27,100	7%
Arts, media and publishing	£31,900	£32,300	-1%
Business, administration and law	£32,800	£31,500	4%
Community development	£33,200	£30,200	9%
Construction, planning and the built environment	£32,900	£30,400	8%
Education and Training (including initial teacher education)	£35,100	£33,900	3%
Engineering and manufacturing technologies	£31,800	£32,900	-4%
English (including literacy)	£31,300	£30,700	2%
Health, public services and care	£31,700	£31,400	1%
Humanities	£35,100	£33,500	5%
Information and communication technology (ICT)	£33,200	£32,700	2%
Languages, literature and culture	£33,300	£31,400	6%
Leisure, travel and tourism	£31,300	£31,300	0%
Mathematics	£31,100	£31,100	0%
Preparation for life and work	£30,300	£30,900	-2%
Retail and commercial enterprise	£31,400	£33,200	-6%
Science	£34,100	£31,000	9%
Social Sciences	£32,900	£33,900	-3%

Source: Frontier Economics analysis of SIR 26 data

Note: we have removed 'Community development' and 'Family learning' from this table as the sample sizes in these subjects were very small and the results therefore unreliable. To ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of 2017-18.

²⁶ We have excluded the subject Family Learning from this analysis due to the low number of observations available.

Continuous professional development

Figure 47 shows the distribution of hours spent by teaching staff on continuous professional development (CPD), in SIR 24-26.

Over half of teachers spent 26-30 hours per year on CPD in 2017-18, of which 99% spent exactly 30 hours.

Despite previous expectations of at least 30 hours per year spent by each teacher on CPD, 25% of teachers appear to have spent fewer than 30 hours on CPD in 2017-18. However, this proportion is down from 28% in SIR 25 and 43% in SIR 24.²⁷

We saw a spike in the number of teachers spending over 100 hours on CPD in SIR 25, mainly due to the large number of teachers responding that they spent 156 hours (an average of 3 hours per week) on CPD. In SIR 26, this has reverted back to the level seen in SIR 24 (3%).

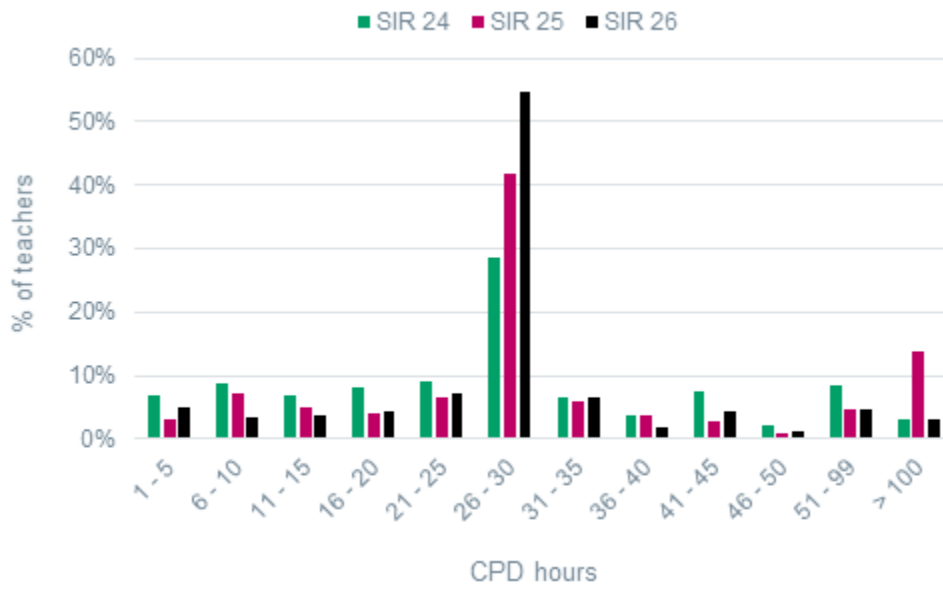
The median number of hours spent on CPD has not changed substantially over time and remains at 29.5 in SIR 26. After increasing from 34 in SIR 24 to 46 in SIR 25 (due to the small number of staff reporting a high number of CPD hours in SIR 25), mean CPD hours have dropped back to 35 in SIR 26.

The ETF's recent report on training needs in the FE sector also reports the mean number of hours of training in the last year, for a variety of different job roles. For the 'lecturer, teacher or tutor' category, the mean is reported as 41, slightly higher than the 35 observed for teaching staff in the SIR 26 data.²⁸

²⁷ We have excluded responses of zero hours per year on CPD due to the fact that many providers do not currently have systems in place for recording CPD hours, meaning that entries of zero may simply reflect this lack of a recording mechanism rather than because an individual is actually spending no time on CPD. As CPD hours is still a new variable – having been introduced in SIR 24 – we expect that the number of providers who do not measure CPD hours will fall over time.

²⁸ <https://www.et-foundation.co.uk/research/training-needs-analysis/>

Figure 47. Hours spent by teaching staff on continuous professional development, SIR 24-26



Source: Frontier Economics analysis of SIR 24-26 data

Qualifications

In this section, we look at two key qualifications held by teachers:

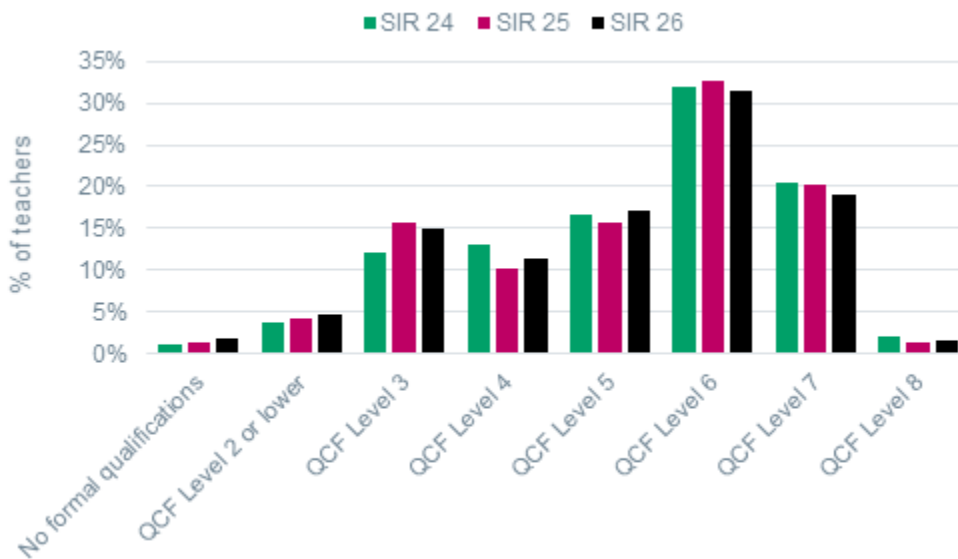
- 1) Highest subject-specific qualification; for example, a Bachelor's Degree in Mathematics (which would be classed as a Level 6 qualification).
- 2) Highest general teaching qualification; for example, a PGCE (which would be classed as a Level 7 qualification).

Subject-specific qualifications

Figure 48 looks at the highest qualification held by teachers in their main subject area of teaching. As in SIR 24 and SIR 25, the most common category is QCF Level 6 (corresponding to a Bachelor's Degree or equivalent).

The distribution of teaching qualification levels in SIR 26 is similar to that observed in previous years. However, the proportion of teachers with QCF Level 3 or below (including 'no formal qualifications') has risen from 16.8% in SIR 24 to 21.4% in SIR 26.

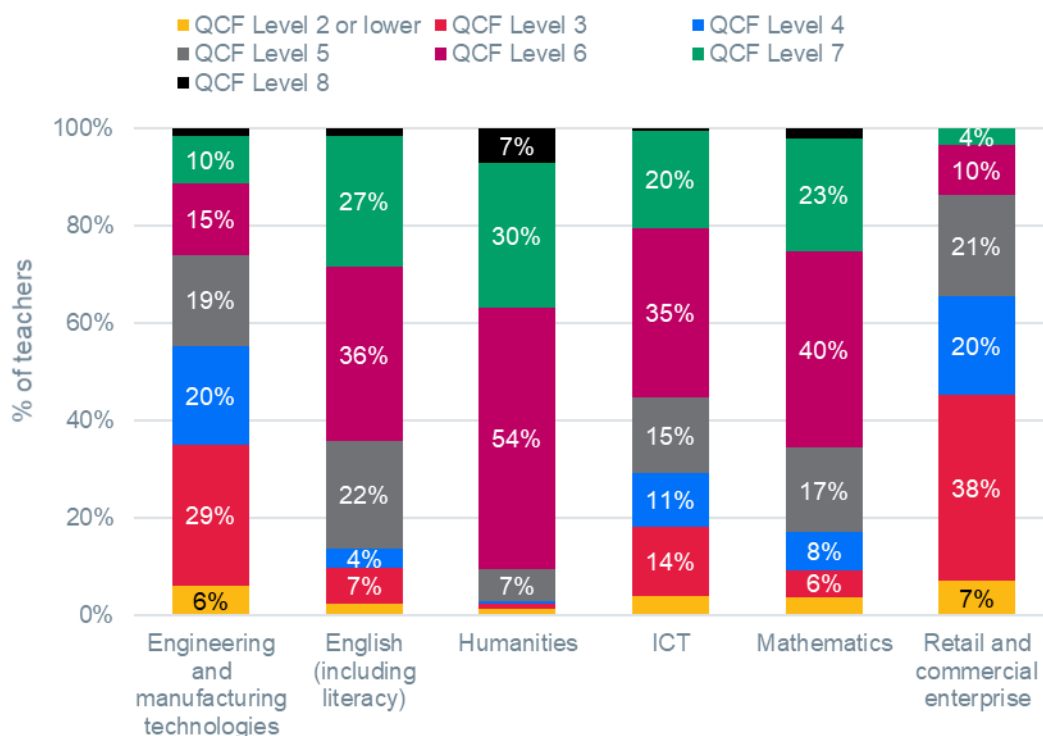
Figure 48. Teaching staff – highest qualification held in main subject area, SIR 24-26



Source: Frontier Economics analysis of SIR 24-26 data

Figure 49 shows how the qualifications held by teachers in their main subject area varies depending on the subject taught. Whereas over 90% of humanities teachers have qualifications at Level 6 or above, only one-quarter of engineering and manufacturing technologies teachers have qualifications at this level. This may be linked to the greater prevalence of apprenticeships and intermediate-level vocational qualifications such as Higher National Diplomas (HNDs) and Higher National Certificates (HNCs) in areas such as engineering and manufacturing. A similar pattern is observed in retail and commercial enterprise, which is also a more vocational subject – the vast majority of teachers have qualifications at Level 5 or below.

Figure 49. Teaching staff – highest qualification held in main subject area, selected subjects



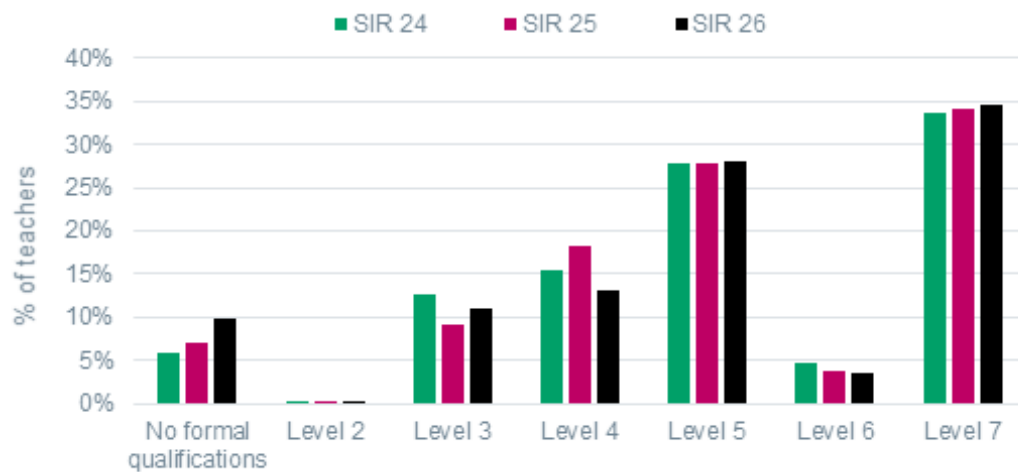
Source: Frontier Economics analysis of SIR 26 data

General teaching qualifications

Figure 50 below shows the proportion of teachers with different levels of general teaching qualifications. As in SIR 24 and SIR 25, the most common category is Level 7, which includes PGCEs.

The distribution of general teaching qualifications is similar to that observed in previous years. However, the proportion of teachers with no formal qualifications has risen from 6% in SIR 24 to 10% in SIR 26, while the proportion of teachers with Level 3 or Level 4 teaching qualifications has fallen.

Figure 50. Teaching staff – highest general teaching qualification held, SIR 24-26



Source: Frontier Economics analysis of SIR 24-26 data

Offender / SEND / community learning

In this section, we look at three specific areas of learning covered by some FE teachers:

- Offender learning: teaching offenders as part of the Offenders’ Learning and Skills Service (OLASS).
- SEND learning: teaching those with special educational needs and disabilities.
- Community learning: providing teaching to the community, for example through public classes.

The majority of contracts which specify that the individual is involved in offender, SEND, or community learning are classified as teaching staff. Figure 51 below shows the occupational distribution for each category.

Of those involved in SEND learning, a substantial minority are learner-facing technical staff, of which the majority are learning support staff. Over 20% of learning support staff contracts state that the individual is engaged in SEND learning.²⁹

Figure 51. Staff breakdown by occupational group, staff engaged in offender/SEND/community learning

Occupation	% of records – offender learning	% of records – SEND learning	% of records – community learning
Admin staff	0.0%	0.8%	1.2%
Apprentice	0.0%	0.2%	0.1%
Assessor	0.4%	1.9%	0.4%
Learner-facing technical staff	9.5%	32.3%	2.8%
Middle manager	12.3%	3.8%	1.5%
Non-teaching professional	0.2%	0.3%	0.3%
Senior manager	0.2%	0.4%	0.6%
Support staff - caring	0.0%	0.3%	0.0%
Support staff - other	0.0%	0.5%	1.4%
Support staff - technical	0.0%	0.6%	1.2%
Support staff - trades	0.0%	0.0%	0.0%
Teaching staff	77.4%	59.0%	90.6%

Source: Frontier Economics analysis of SIR 26 data

²⁹ This is over 20% of those learning support staff contracts which reply “Yes” or “No” to the question of whether the individual is engaged in SEND learning. There are a further 6,000+ contracts in our dataset which do not reply to the question, reply “Not Known”, or reply that the question is not applicable because the individual is not a member of teaching staff.

As the majority of contracts for those involved in offender, SEND, or community learning are classified as teaching staff, we focus only on teaching staff for our analysis below.

Number of teachers

A relatively small number of teachers are involved in each of these different types of teaching. As shown in Figure 52, across all teaching contracts in the SIR 26 data, 2.1% are involved in offender learning, 2.3% in SEND learning, and 4.8% in community learning.³⁰ Of those contracts that involve some community learning, the majority (77%) state that 100% of their teaching takes place in the community.

Figure 52. Number of teaching contracts engaged in offender, SEND, or community learning

	% of records – offender learning	% of records – SEND learning	% of records – community learning
Involved	2.1%	2.3%	4.8%
Not involved	44.9%	37.8%	50.1%
Unknown	52.9%	59.9%	45.1%

Source: Frontier Economics analysis of SIR 26 data

Terms of employment

Across all teaching contracts engaged in offender learning, SEND learning, and community learning, permanent staff is the largest category of employment type.

However, whereas 98.9% of teaching contracts engaged in offender learning are permanent, only 41.0% of teaching contracts engaged in community learning are permanent. In community learning, casual staff are much more prevalent (37.7%).

The prevalence of zero hours contracts also differs markedly across the three – no teaching contracts engaged in offender learning were classified as being on a zero hours contracts, whereas 5.8% of SEND learning contracts and 6.0% of community learning contracts were on zero hours.

³⁰ We conduct our analysis at the contract level given that a single teacher could have multiple contracts, one or more of which includes some offender/SEND/community learning, and one or more of which do not.

Figure 53. Distribution of employment type, teachers engaged in offender/SEND/community learning

Terms of employment	% of records – all teaching staff	% of records – offender learning	% of records – SEND learning	% of records – community learning
Casual staff	11.5%	0.0%	7.1%	37.7%
Employed through an agency	0.2%	0.0%	0.0%	3.3%
Fixed term staff	8.9%	1.1%	9.3%	12.0%
Permanent staff	71.4%	98.9%	77.7%	41.0%
Self-employed	0.1%	0.0%	0.0%	0.1%
Voluntary staff	0.0%	0.0%	0.0%	0.0%
Zero hours contract	7.9%	0.0%	5.8%	6.0%

Source: Frontier Economics analysis of SIR 26 data

Note: all figures rounded to one decimal place. Figures may not add up to 100% due to rounding.

Turnover and in-year employment change

Figure 54 below shows turnover and in-year employment changes for staff engaged in offender, SEND, and community learning. Turnover of teaching staff involved in offender learning is notably higher than that of all teaching staff, but the areas of SEND and community learning saw lower turnover than average in SIR 26.

For all three categories of offender, SEND, and community learning, in-year employment growth was above the average for all teaching staff. Note, however, that the small number of teachers involved in these areas of learning means that the results should be interpreted with caution.

Figure 54. Turnover rate and in-year employment change, teaching staff engaged in offender/SEND/community learning

	Turnover rate	In-year employment change
All teaching staff	11.9%	2.1%
Teaching staff engaged in:		
<i>Offender learning</i>	18.7%	4.0%
<i>SEND learning</i>	7.6%	2.2%
<i>Community learning</i>	4.9%	5.4%

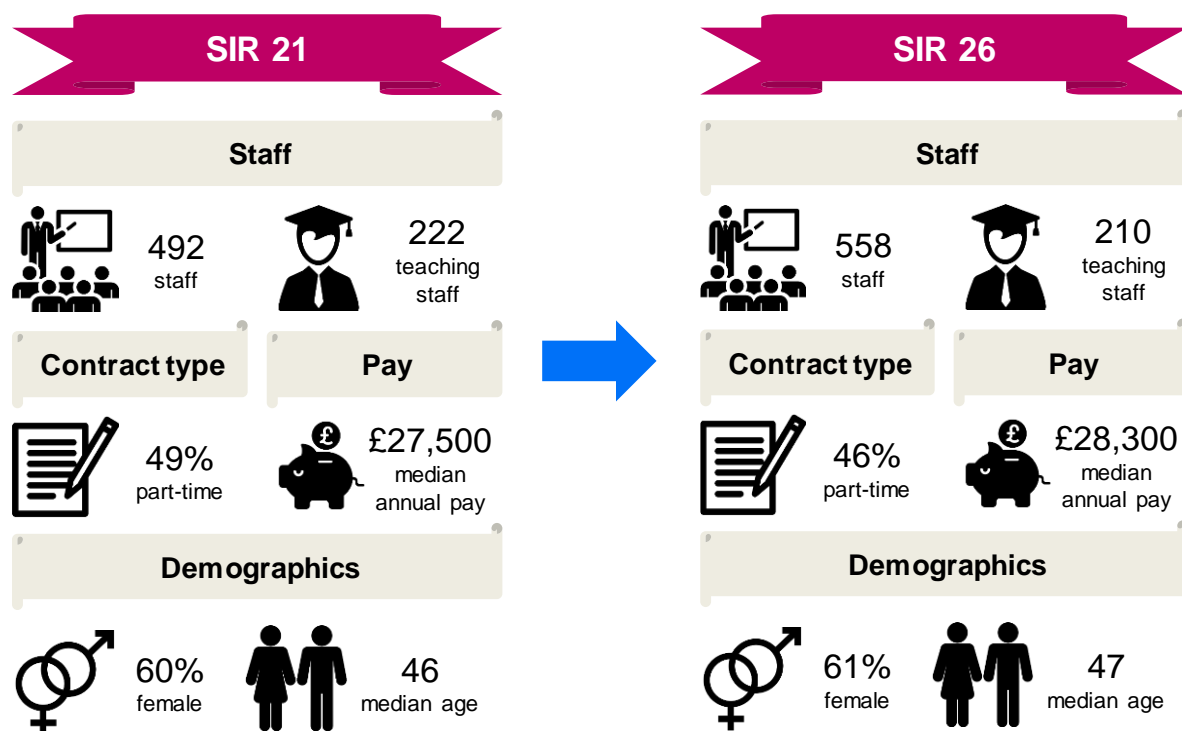
Source: Frontier Economics analysis of SIR 26 data

5. CHANGES IN TYPICAL COLLEGE CHARACTERISTICS SINCE SIR 21

In this section we look at the big picture of changes that have taken place in the characteristics of colleges since SIR 21 (the 2012/13 academic year). We focus specifically on colleges for this analysis to ensure a consistent picture over time.³¹

Figure 55 summarises some of the key typical characteristics of FE colleges in SIR 21 and SIR 26. We provide further detail below.

Figure 55. Key typical characteristics of FE colleges, SIR 21 and SIR 26



Source: Frontier Economics analysis of SIR 21 and SIR 26 data

³¹ We define 'colleges' in the same way as in Section 2. This means that National Specialist Colleges are not included in either SIR 21 or SIR 26 – due to the fact that NSCs tend to be very different to other colleges (e.g. in the specialist support that they offer to students with learning difficulties), we classify these as an 'Other' provider type. Also note that we do not account for the difference in the sample of providers submitting data in SIR 21 and SIR 26. In other words, we do not restrict our sample for analysis to those providers which submitted data in both SIR 21 and SIR 26; instead, we look separately at the entire datasets available for SIR 21 and SIR 26, and then compare the two.

Number of providers and records

Overall, the number of colleges that submitted data as part of the SIR data return has decreased slightly from 120 in SIR 21 to 118 in SIR 26 (although the total number of providers submitting data has increased from 123 in SIR 21 to 193 in SIR 26). See Figure 56 for a breakdown.

There were no Art, Design and Performing Arts Colleges submitting data in SIR 21; in SIR 26 two such colleges submitted data.

Figure 56. Number of providers by provider type, SIR 21 and SIR 26

Provider type	Number of providers – SIR 21	Number of providers – SIR 26
General Further Education College	89	97
Agriculture and Horticulture College	6	7
Sixth Form College	21	7
Specialist Designated College	4	5
Art, Design and Performing Arts College	0	2
Total	120	118

Source: Frontier Economics analysis of SIR 21 and SIR 26 data

Figure 57 shows the number of records submitted for each type of college in SIR 21 and SIR 26. The numbers have increased for every type of college except for Sixth Form Colleges, and have increased overall by 7%.

Figure 57. Number of records by provider type, SIR 21 and SIR 26

Provider type	Number of records – SIR 21	Number of records – SIR 26
General Further Education College	67,663	75,315
Agriculture and Horticulture College	3,358	4,210
Sixth Form College	5,386	1,751
Specialist Designated College	311	665
Art, Design and Performing Arts College	0	267
Total	76,718	82,208

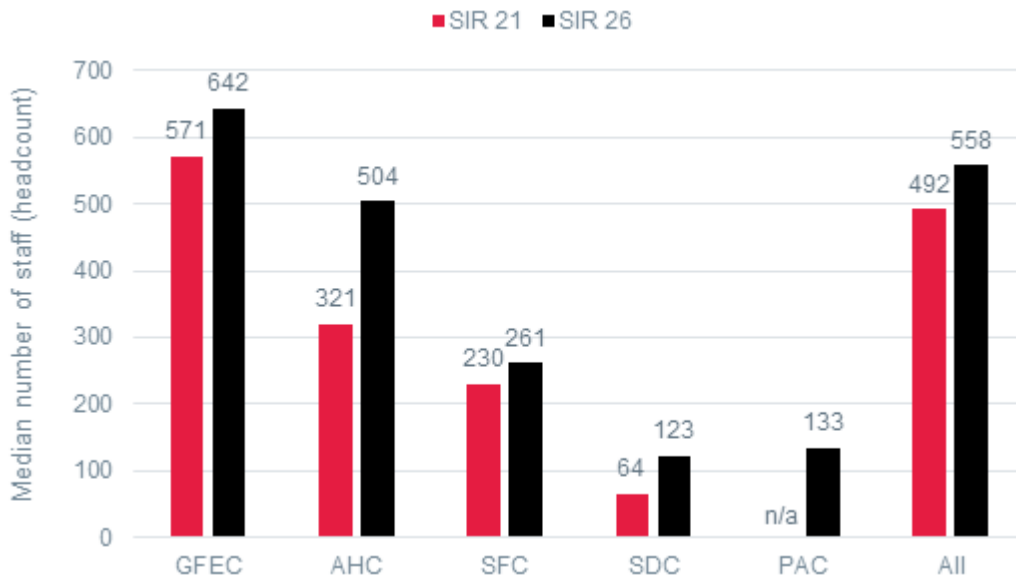
Source: Frontier Economics analysis of SIR 21 and SIR 26 data

In both SIR 21 and SIR 26, a small number of colleges made up a sizeable proportion of the records submitted. For example, in SIR 21 the top 10 providers submitted 23% of the records; in SIR 26, the top 10 providers submitted 21% of the records.

Number of employees

Colleges have grown since SIR 21, when measured by the average number of employees. Figure 58 below shows the median number of employees in SIR 21 and SIR 26 for all colleges and for each type of college separately.

Figure 58. Median number of staff (headcount) by provider type, SIR 21 and SIR 26

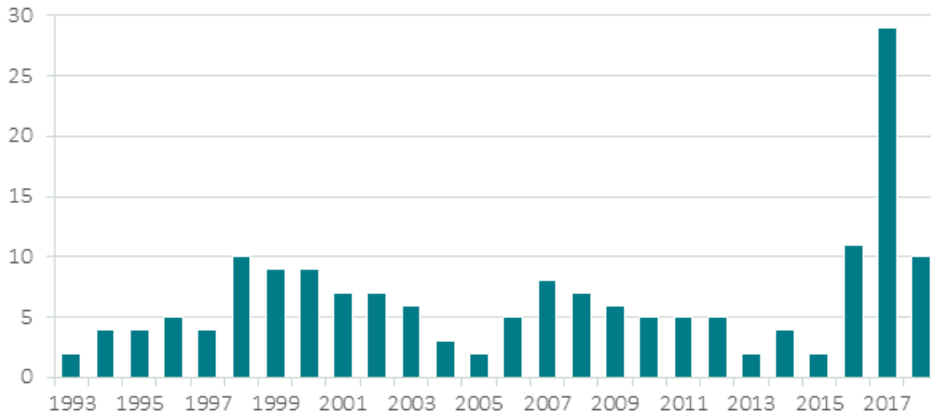


Source: Frontier Economics analysis of SIR 21 and SIR 26 data

Note: GFEC = General Further Education College; AHC = Agriculture and Horticulture College; SFC = Sixth Form College; SDC = Specialist Designated College; PAC = Art, Design and Performing Arts College.

All college types have increased in size over time, most notably Specialist Designated Colleges, which have almost doubled in size, from a median of 64 employees in SIR 21 to 123 in SIR 26. This is unsurprising given the large number of mergers in the FE sector over the last few years (see Figure 59 below).

Figure 59. Number of FE college mergers by year (1993-2018)

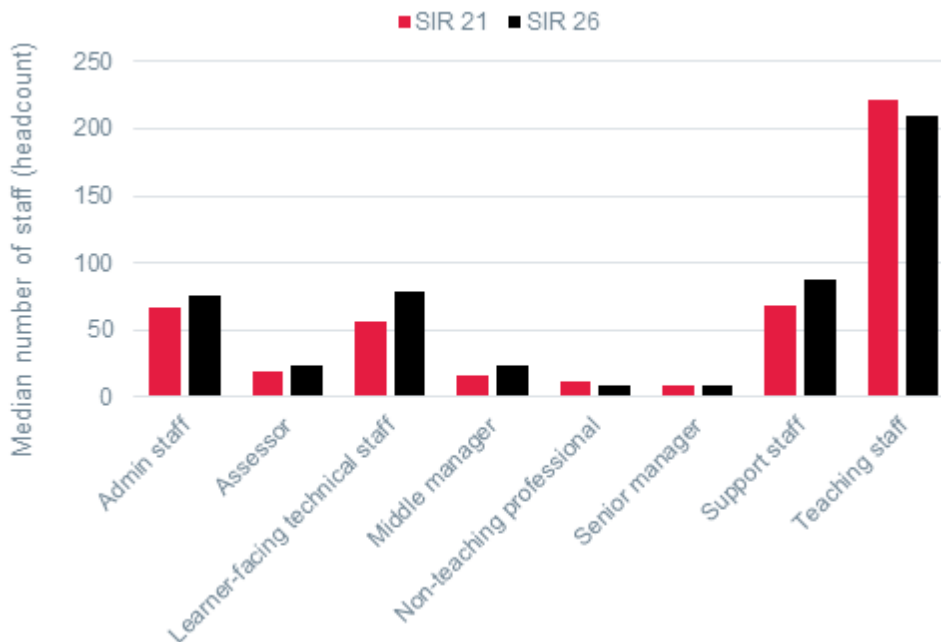


Source: Association of Colleges

We have also looked at the median number of employees in specific occupational categories, in SIR 21 and SIR 26 (see Figure 60 below).

While the median number of total employees at colleges rose between SIR 21 and SIR 26, the median number of teaching staff fell from 222 to 210. The biggest (absolute) changes in headcount numbers were seen in learner-facing technical staff (56 to 78) and support staff (69 to 88). The median number of senior managers remained constant at 9 between SIR 21 and SIR 26.

Figure 60. Median number of staff (headcount) by occupation, SIR 21 and SIR 26



Source: Frontier Economics analysis of SIR 21 and SIR 26 data

Note: totals may not equal totals reported in Figure 58 above, due to observations for which occupational category is unknown.

Subjects offered

In this section, we look at how the subjects offered by providers have changed over time. As subject names and reporting methods have changed over time, we restrict our analysis to those subjects which have stayed relatively constant in the data over time.³²

Figure 61 below presents data on seven subjects whose names are comparable between SIR 21 and SIR 26. See the annex for details on how subject names have changed over time.

We compare SIR 21 and SIR 26 in two ways, for each subject:

1. **% of providers.** We count the number of colleges with at least one contracted individual (at any point during the academic year, for any duration), for the subject and year in question. We then divide this by the total number of college providers submitting data on subject taught for that year.³³
2. **FTE contracts per provider.** We count the total number of contracts for each subject and each year, weighting each by the proportion of full-time worked to find the FTE-equivalent number of contracts. We then divide by the number of providers offering each subject to find the number of FTE contracts per provider.

Note that we look across all contracts in the SIR data for this analysis – not only those classified as teaching staff.

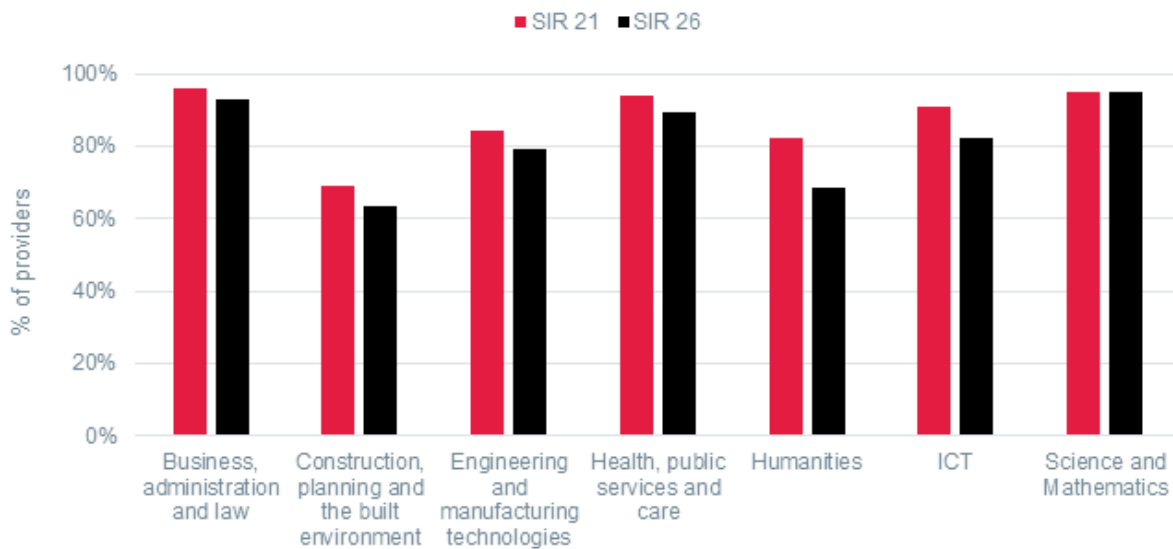
The proportion of providers offering each of the subjects in Figure 61 has fallen between SIR 21 and SIR 26. For example, whereas 91% of providers submitting data in SIR 21 had at least one contract with subject specified as ICT, in SIR 26 this was just 82%. Similarly, engineering and manufacturing technologies was present at 84% of providers in SIR 21; this fell to 79% in SIR 26.

The large drop in the proportion of providers offering humanities (82% to 69%) may be related to the lower number of Sixth Form Colleges in SIR 26. In SIR 21, 21 Sixth Form Colleges submitted data; in SIR 26, 7 did so.

³² If we did not restrict our analysis to subjects which have stayed relatively constant in the data over time, it may appear that subjects have disappeared from the curriculum offered or been added to the curriculum, when in fact it is simply that the categorisation of different subjects has changed over time.

³³ In SIR 21, one provider did not provide any information on subject taught; in SIR 26, 22 providers did so. In other words, for these providers, all responses were blank, 'not a member of staff providing teaching and promoting learning', 'not a teacher', teaching staff lower than NQF level 4', or 'unknown'. We exclude these providers from our calculations.

Figure 61. Proportion of providers offering selected subjects, SIR 21 and SIR 26



Source: Frontier Economics analysis of SIR 21 and SIR 26 data

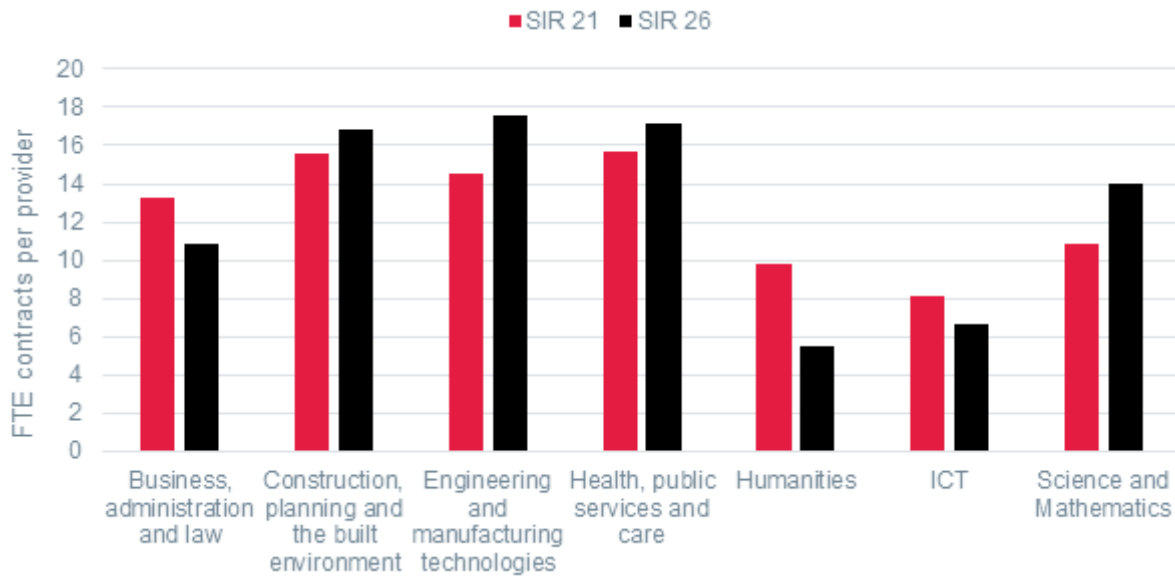
Note: subject names have changed over time. We have only included subjects in this table that were reported on a comparable basis in SIR 21 and SIR 26. We have also combined Science and Mathematics in SIR 26 to enable a comparison with SIR 21 (when Science and Mathematics were reported together under one subject name). See the annex for details of the SIR 21 and SIR 26 subjects included under the consolidated subject categories reported in this table. % of providers refers to the proportion of providers which have at least one contract for the subject in question in the year in question.

In Figure 62, we show the average number of FTE contracts per provider, *for those providers which offer the subject in question*. We described above the reduction in the proportion of providers offering a range of subjects. Figure 62 helps to give an idea of whether the remaining providers are partly compensating for this by increasing their offering in those subject areas.³⁴

Figure 62 shows a mixed picture. Four of the seven subjects saw an increase in the number of FTE contracts per provider; for example, of those providers offering Engineering and Manufacturing Technologies, the average number of FTE contracts increased from 15 to 18. The other three subjects saw a decline, however, to augment the reduction in the proportion of providers offering the subject.

³⁴ This analysis looks at headcount

Figure 62. Average number of FTE contracts per provider, selected subjects, SIR 21 and SIR 26



Source: Frontier Economics analysis of SIR 21 and SIR 26 data

Note: we calculate FTE contracts per provider only including those providers which offer the subject in question. Subject names have changed over time. We have only included subjects in this table that were reported on a comparable basis in SIR 21 and SIR 26. We have also combined Science and Mathematics in SIR 26 to enable a comparison with SIR 21 (when Science and Mathematics were reported together under one subject name). See the annex for details of the SIR 21 and SIR 26 subjects included under the consolidated subject categories reported in this table.

Occupation

Figure 63 below shows the change in the distribution of occupations between SIR 21 and SIR 26. Note that because the SIR is based on a sample of providers, the numbers presented in Figure 63 **do not** represent the total number of contracts in the entire FE sector (for example, there are more than 27,729 contracts for teaching staff in the entire FE sector).

The key change that has occurred over the last five years is that teaching staff now make up a smaller proportion of all staff (49% in SIR 21 to 40% in SIR 26). This drop in teaching staff is mirrored by an increase in the proportion of administrative staff and, in particular, learner-facing technical staff between SIR 21 and SIR 26.

Changes across the rest of the distribution are relatively minor, with small increases in the proportions of trades and 'other' support staff, middle managers, and assessors, and small declines in the proportions of non-teaching professionals and technical support staff. Note that apprentices were not included as an occupational category in SIR 21.

Figure 63. Staff breakdown by occupational group

Occupation	Number of records – SIR 21	% of total – SIR 21	Number of records – SIR 26	% of total – SIR 26
Admin staff	9,747	13%	10,338	15%
Apprentice	n/a	n/a	971	1%
Assessor	2,301	3%	2,614	4%
Learner-facing technical staff	8,736	12%	11,182	16%
Middle manager	2,846	4%	3,380	5%
Non-teaching professional	1,935	3%	1,043	2%
Senior manager	1,316	2%	1,071	2%
Support staff - caring	517	1%	966	1%
Support staff - other	4,751	6%	4,991	7%
Support staff - technical	5,243	7%	3,615	5%
Support staff - trades	268	0.4%	754	1%
Teaching staff	36,886	49%	27,729	40%
Total	74,546	100%	68,654	100%

Source: Frontier Economics analysis of SIR 21 and SIR 26 data

Note: records are reported on a non-FTE basis, i.e. simply counting the number of records present, regardless of the proportion of full-time worked.

Demographics

The demographics of the FE college workforce have not changed substantially since SIR 21.

The workforce remains predominantly female: 61% of all staff are female in SIR 26, up slightly from 60% in SIR 21. The proportion of women in teaching and senior management roles has also not changed significantly since SIR 21 (see Figure 64).

Although the median age of all staff and teaching staff has not changed substantially over time, there has been an increase in the proportion of older staff, with the percentage of all staff aged 60 and over rising from 9% in SIR 21 to 13% in SIR 26.

The workforce remains predominantly white British – this has not changed over time.

Figure 64. Demographic breakdown of staff, SIR 21 and SIR 26

	SIR 21	SIR 26
<u>Gender</u>		
<i>% female – all staff</i>	60%	61%
<i>% female – teaching staff</i>	54%	53%
<i>% female – senior managers</i>	56%	56%
<u>Age</u>		
<i>Median age – all staff</i>	46	47
<i>Median age – teaching staff</i>	46	47
<i>% 60 and over – all staff</i>	9%	13%
<i>% 60 and over – teaching staff</i>	9%	12%
<u>Ethnicity</u>		
<i>% white British – all staff</i>	84%	84%

Source: Frontier Economics analysis of SIR 21 and SIR 26 data

Part-time work

Figure 65 below shows the change in the proportion of staff working part-time between SIR 21 and SIR 26. Overall, the changes suggest that a lower proportion of staff are working part-time in SIR 26 than in SIR 21. Across all staff, the proportion has fallen from 49% to 46%, and for teaching staff it has fallen from 51% to 46%.

The decline in the prevalence of part-time work is concentrated amongst male staff, for whom less than a third worked part-time in SIR 26 compared to over half of female staff.

Figure 65. Prevalence of part-time work, SIR 21 and SIR 26

	SIR 21	SIR 26
<u>% working part-time – all staff</u>		
<i>All</i>	49%	46%
<i>Male</i>	35%	31%
<i>Female</i>	57%	56%
<u>% working part-time – teaching staff</u>		
<i>All</i>	51%	46%
<i>Male</i>	39%	32%
<i>Female</i>	59%	57%

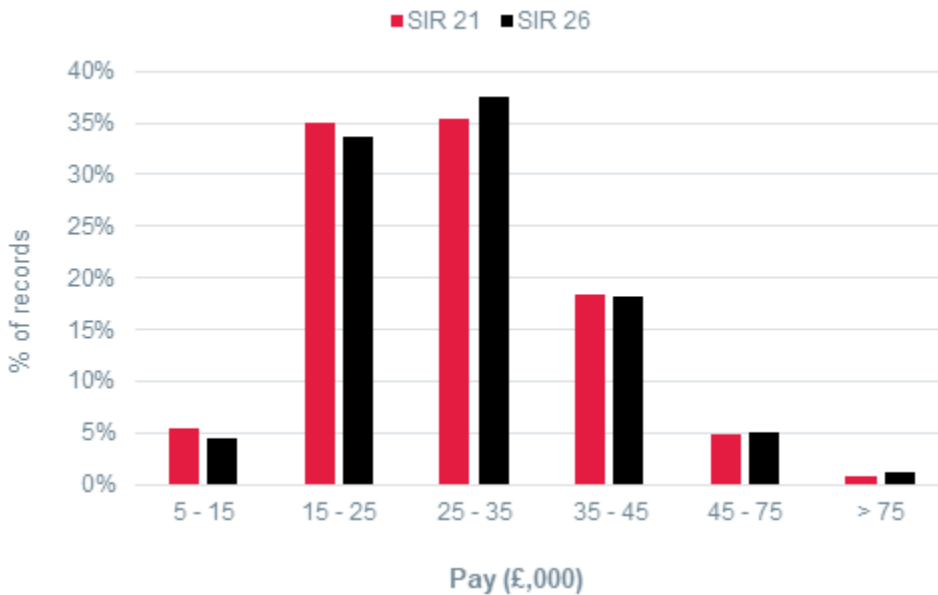
Source: Frontier Economics analysis of SIR 21 and SIR 26 data

Pay

Looking across all college staff, pay has not changed significantly since SIR 21. Not accounting for inflation, there has been a rise in median gross pay of 2.8% in the five years between SIR 21 and SIR 26 (an annualised rate of 0.55%), from £27,500 to £28,300.

This small change is reflected in Figure 66, which shows the distribution of annual pay in SIR 21 and SIR 26. The proportion of records with pay of less than £25,000 per year is slightly lower in SIR 26, while the proportion of records in the £25-35,000 pay band is slightly higher.

Figure 66. Annual pay distribution, SIR 21 and SIR 26



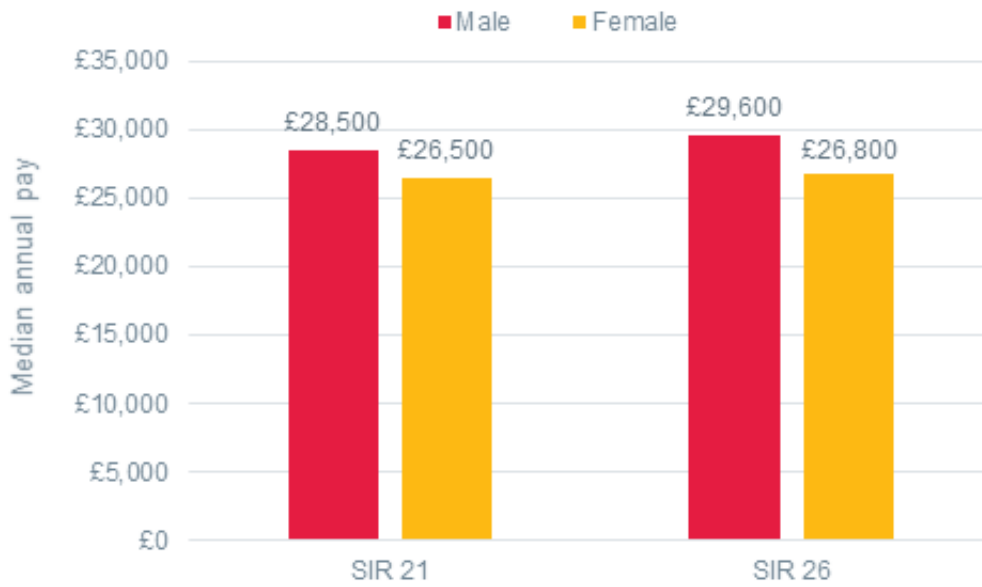
Source: Frontier Economics analysis of SIR 21 and SIR 26 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of the academic year.

Looking specifically at teaching staff, median pay has fallen slightly since SIR 21, within the sample of college providers submitting data to the SIR. In SIR 21, median pay of teaching staff was £32,500; in SIR 26, this was £31,800.

The gender pay gap – using median pay – has increased for colleges since SIR 21. Whereas pay for male staff has increased by 3.9%, from £28,500 to £29,600, pay for female staff has increased by 1.3%, from £26,500 to £26,800. This implies a gender wage gap – looking across all staff at colleges – of 9.3% in SIR 26, compared to 7.0% in SIR 21.

Figure 67. Median pay by gender, SIR 21 and SIR 26



Source: Frontier Economics analysis of SIR 21 and SIR 26 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of the academic year.

ANNEX – DATA PROCESSING

This annex will describe the data processing we have carried out in order to compile the final SIR 26 dataset.

Original dataset

The analysis in this report is based on Staff Individualised Record (SIR) data from the academic year 2017-18 ('SIR 26', following on from SIR 25 carried out for the year 2016-17). ETF collected data through the SIR Data Insights website (www.sirdatainsights.org.uk). ETF also contacted some providers directly to improve the quality of their data returns following specific analysis.

In total, we received 91,029 individual contract records from 193 different providers for the academic year 2016-17. After the data processing described below, 90,792 individual contract records remained, from 193 different providers.

Data processing

Below, we list the key elements of data processing we have carried out in order to prepare the SIR dataset for the analysis presented in this report. This process is very similar to that described in last year's report for SIR 25.

1. Age

- We replaced as missing the age variable where age is entered as below 16 on or after the date they were appointed.³⁵

2. Full-time / part-time

- We defined 'full-time' to be FTE of 90% or above.

3. Continuous professional development (CPD)

- We replaced as missing the CPD variable where the figure for CPD was entered as zero.³⁶

4. Region

- We classified providers into four regions: the South (excluding Greater London), Greater London, the Midlands and East, and the North.

5. FTE

- We standardised the FTE variable by converting all figures

³⁵ Replacing values as missing simply means that the data point in question is ignored for the purposes of our analysis. Replacing specific unreliable values (e.g. the age value) as missing for a given contract ensures that while the unreliable data is ignored, the rest of the (reliable) data is still included – the rest of the information entered for that contract is left intact.

³⁶ From discussions with providers, we are aware that many entered CPD hours as zero simply because their internal systems do not currently record CPD hours, rather than because an individual actually carried out zero CPD hours.

into percentages. We do this by assuming that any entry greater than 0 and less than 1 was intended as a proportion, and therefore multiply these entries by 100 to convert them into percentages.

- Replaced FTE as missing where the figure is above 120% (this is outside the range defined by the data specification). This includes both (i) cases of FTE being greater than 120% for an individual contract, and (ii) cases of FTE being greater than 120% for a given individual across all their contracts.³⁷
- Replaced as missing the FTE variable where FTE = 0, annual pay > 0, and the contract is not zero hours, casual, voluntary, self-employed, or unknown.³⁸
- We created a new FTE variable, adjusted to reflect the proportion of the year worked. This is used a number of times throughout our analysis, when weighting observations based on the proportion of full-time worked.

6. Annual pay

- Replaced the annual pay variable as missing where it was non-zero and below £3.70 (the hourly apprentice rate in the first half of tax year 18/19).
- Replaced as missing the annual pay variable where annual pay = 0, FTE > 0, and the contract is not classified as voluntary (i.e. only voluntary staff should be working without being paid).
- We replaced as missing the annual pay variable where pay is below our calculation of the 'minimum wage' for the year. This minimum wage is calculated based on the number of days worked, the percentage of full-time worked, and the apprentice rate of £3.70 per hour in the first half of tax year 18/19.

7. FTE and annual pay

- Replaced as missing the annual pay and FTE variables where pay = 0, FTE = 0, and the contract is not classified as voluntary.

8. Appointment/leaving date

- Removed all observations with an appointment date after the end of the academic year (31/07/2018).

³⁷ A given individual may have more than one contract, e.g. two contracts for teaching two different subjects.

³⁸ Although the FTE variable should measure the number of hours *actually worked*, we are aware that the FTE variable may have been entered as zero for individuals on these contract types due to the fact that hours were informal and unknown.

- Removed all observations with a leave date before the beginning of the academic year (01/08/2017).
- We assumed an appointment date of 01/08/2017 (i.e. the beginning of the academic year) where appointment date is missing. This ensures that these records are included in calculations of the number of staff present at the beginning of the academic year (e.g. when calculating the turnover rate and net employment change).

9. Provider type

- Changed the provider type for three providers which should have been classified as local authority providers but who had been classified incorrectly in the original data.

10. Subject taught – teachers only

- Replaced as missing the subject taught variable where it is entered as “Science and Mathematics”. This is because providers should now split teachers out between Science and Mathematics rather than group them together. Only one observation was returned with subject taught entered as “Science and Mathematics” in SIR 26.

11. Trends over time

- There are two main options for data processing when looking at trends in the data over time:
 - i. Use all data available, for each year.
 - ii. Use only data from providers who were present in every year of the SIR dataset (a ‘consistent’ provider sample), to exclude potential impacts on observed trends from the composition of providers in each dataset.
- There are benefits and drawbacks to each approach. To maximise the benefit of the increased quality and quantity of data received from SIR 24 onwards, we have chosen the first option – to keep all data in the dataset for our analysis of trends over time.
- However, we recognise that this will affect the interpretation of our results, and that caution is required. For example, if we observe a change of 10% in average pay for a given group of staff between SIR 21 and SIR 26, this may be because individual members of staff at specific providers are earning 10% more now than they did in SIR 21, but it may also mean that new providers are now included in the data who happen to pay higher wages than the previous average (and always did).