

Further Education workforce data for England

Analysis of the 2012-2013
staff individualised record data

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Foreword

Our most important asset in FE is our staff. It is not buildings and computers that deliver the skills agenda, engage with NEETs or plan and deliver a liberal education - it is people, our staff.

Our most important asset is also the single most expensive line in any college's budget. During the last four years we have experienced unprecedented pressures on our budgets, and we know, from policy announcements already made, that the public sector faces several more years of similar, if not increased, pressures on resource.

This work, compiled by the Education and Training Foundation, is important for several reasons:

- For policy makers it provides an evidence base concerning the changes in workforce that the sector is experiencing and having to manage. Although decisions by Ministers always have a strong political dimension, the starting point for their officials, and the advice that Ministers are given, comes from an evidence base.
- Representative organisations, such as the Association of Colleges, require impartial evidence in order to lobby effectively on behalf of the sector. Without evidence, the lobbyist's position can lack credibility and be dismissed easily.
- And for college governors and managers, it's often useful to be able to compare their local experience with the national picture.

The compilation of the information does place an administrative 'burden' on each college, and this will only be justified by the value that the information will bring to discussion, debate and policy information. The Education and Training Foundation is acutely aware of its responsibility to extract maximum value and 'purchase' from the data, if the sector is to be convinced that it is spending its time and resource wisely.

The Education and Training Foundation already provides a method of analysis for colleges to compare themselves to others on a regional or national basis – through the OLAP system where they complete the return. If you're reading this as a college Principal, I'd urge you to take a look and see just how your college compares – do you have more or fewer female staff than the average, do you pay teachers the sector average, do you have fewer part-time staff as a percentage of the whole? Any college that has made a return is able to make these comparisons, and in future we'd like that to be easier.

This report has built on previous SIR reports and offers a clear picture, based on the colleges that made full returns for 2012/13. These colleges are broadly representative of the sector as a whole, and the information in the report has been scaled up from the sample. This is the first time that the data has been analysed in this way, which means that not only is the data useful for colleges, but policy makers now have data on the whole sector to inform discussion and decisions.

The data allows us to identify an average college, as a point of comparison, but also helps us to explain the sector to others. An average college spends £21m a year, has 5,574 students, and employs 642 people, of whom 307 are teachers. While many colleges are far from average, this helps us to understand and explain how we are both similar and different.

We hope this report will be useful to you, and do not hesitate to get in touch with Charlynn Pullen, the Research Manager at the Foundation on sirenquiries@etfoundation.co.uk if you have any comments or queries.

Mike Hopkins

Member of the Education and Training Foundation Expert Panel for Professional Standards and Workforce Development

Executive Summary

The Education and Training Foundation (ETF) commissioned Frontier Economics to carry out an analysis of workforce data from the Staff Individualised Record (SIR) dataset for Further Education (FE) colleges in England for 2012-2013. This report presents the findings from our analysis, which can be used by stakeholders to assess the FE landscape and inform future policy.

The SIR data are supplied by FE colleges for each academic year on a voluntary basis. As the data collection is not compulsory, it relies on the goodwill of colleges to complete the return. The SIR collection process spans more than one calendar year, from publication of the data specification to data submission by colleges¹.

Response rates have been declining over time, so that, in 2012-13, only around a third of colleges supplied up-to-date information. This trend is clearly a cause for concern, as one of the chief aims of the SIR data is to provide the FE sector with a robust basis for workforce planning. Going forward, it will be important to ensure that response rates are maximised.

The data used in the analysis are based on responses from 123 FE colleges in England, around a third of all FE colleges in the sector (more information on types of college can be found in section 1 below). The data comprise 78,932 records, each relating to a standard contract of employment between a college and an individual. Previous reports analysing the SIR data have used college information submitted up to five years previously (backfilled) if no more recent submission was available. The 2013 report used data from 266 colleges, with approximately one third of the records backfilled². For this report, only up to date information has been used in order to ensure that the data are accurate and reflect the current status of the sector. Although this implies using information from a smaller number of colleges compared to previous years, our indicative analysis suggests that the data used in this report are reasonably representative of the entire FE population.

The key findings from our analysis are summarised below.

All staff

- The gender composition of the FE workforce has not changed since last year. The proportion of females in 2012-13 is 63.8%, compared to 63.5% in 2011-12. This is similar to the Work Based Learning (WBL) workforce (where 65% of staff are female) but is lower than the Adult and Community Learning (ACL) workforce, where 74% of staff are female³.
- We also find that patterns in the gender split of staff for different terms of employment and for different occupational categories are consistent with 2011-12:
 - The proportion of women remains higher among part-time contracts. Here, we also find a small increase: 72.2% in 2012-13 compared to 71.2% in 2011-12.
 - Variation in gender composition by occupational category remains consistent with previous years. The proportion of women remains especially high among Administrative and professional staff, Word processing, clerical, secretarial staff, and Service staff, and especially low among Technical staff.
- The median age of the FE workforce is 45 years. Part-time staff tend to be older than full-time staff (46 years vs. 44 years respectively). Male staff are on average slightly older than female staff median age (46 years vs. 45 years). We find no significant differences in the age composition of FE staff between 2011-12 and 2012-13.

¹ Please see the Annexe 1 for more detail on timelines.

² Precisely, the data used in 2013 included 168,333 records, of which 66% were from the 2011-12 collection, and 34% were submitted in 2009-10 or 2010-11 ("Further Education College Workforce Data for England: An analysis of the Staff Individualised Record Data 2011-2012", June 2013, LSIS)

³ "Work Based Learning Workforce Survey 2012-13", AELP and ETF and "Adult and Community Learning Workforce Survey 2012-13", HOLEX and ETF, both published alongside this report in 2014.

- The age profile of the FE workforce is somewhat different from that of the WBL and ACL workforce:
 - 23% of FE staff are aged under 35 compared with 38% of WBL and 11% of ACL staff; and
 - 24% of FE staff are aged 55 or older compared with 12% of WBL and 32% of ACL staff.
- The majority of FE staff (84%) are white British, across all occupational categories. This is similar in WBL (86%) and ACL (83%) providers. The proportion of white British staff is highest among senior managers (91%). The coverage of information on ethnicity has decreased substantially over time. In the 2013 report, using data from 2008-09 up to 2011-12, information on ethnicity was available for 94.4% of contracts. Using only the 2012-13 data, this proportion goes down to 75.8%. Based on the information available, the ethnic composition of FE staff in 2012-13 is consistent with 2011-12. However, given the large difference in data coverage, comparisons between the two years should be considered tentative.
- As in previous years, sexual orientation remains underreported – 67% of records returned were marked as ‘unknown’⁴. This is, however, an improvement on the last two years where the proportion of answers marked as ‘unknown’ was 92% (2010-2011) and 83% (2011-2012)⁵. A further 7% of records are marked as ‘prefer not to say’. Where sexual orientation has been indicated, the vast majority of staff have reported themselves as heterosexual.
- Approximately 4% of FE staff reported having a disability. This is similar to the rate reported in 2011-12 and to the rates reported in the ACL (4.2%) and WBL (3.6%) workforce surveys. Of those, around half provided information on the type of disability. Physical impairment is the most common form of disability, followed by learning difficulty and ill mental health. 85% of staff reported not having a disability and in 11% of cases disability status is not known, either because no information was reported (2% of staff), or because respondents preferred not to disclose their status (9%).
- The incidence of part-time working in 2012-13 is similar to previous years: 58% of contracts in 2012-13 were part-time compared to 57% in the previous year. The incidence of part-time working is higher in the ACL (80%) sector, and lower in the WBL (14%) sector.
- Median annual pay for full-time employees in 2012-13 is between £23,000 and £23,999. This ranges from £16,000-16,999 for word processing, clerical, secretarial, and service staff to £62,000–62,999 for senior managers. Annual pay varies significantly by region. It is highest in Greater London, at £29,000- 29,999, and lowest in the South East and the North East at £20,000–20,999. This is driven by variation in pay levels across all occupational categories.
- Average full-time pay is higher for males, at £27,522, than for females, at £25,824. This gap could be explained by gender differences in occupation categories, location, or other factors, whose role could be disentangled through further research.
- The gender pay gap has reduced slightly since last year - the ratio between female and male annual pay has increased from 93.4% in 2011-12 to 93.8% in 2012-13.
- Annual pay for full-time staff has changed little in nominal terms in the last year. We find a very small increase across all staff of 0.1%. This amounts to a fall in real terms, given an annual Consumer Price Inflation rate of 2.7% in September 2013⁶. Relative to 2011-12, pay increased in nominal terms for Other managers, Technical staff, and Service staff and decreased for Senior managers, Word processing staff, and Administrative and professional staff. Pay remained broadly constant (variation under 0.5%) for Teaching staff and Assessors and verifiers.

4 A similar proportion of records were marked as unknown in the WBL (71%) and ACL (75%) surveys.

5 “Further Education Workforce Data for England: An analysis of the Staff Individualised Record Data 2011-2012”, June 2013, LSIS

6 Source: Office for National Statistics, 2013.

Teaching staff

- The largest occupational category in the FE workforce is teaching staff: this category accounts for almost half (48%) of all contracts in the SIR21 data. However, this has decreased slightly compared to 2011-12, when it stood at 49%.
- Teachers in FE colleges in England are predominantly female, but the proportion of women among teaching staff is smaller than among the overall FE workforce (59% compared to 64% across all staff). The gender split of teaching staff between contract types is consistent with 2011-12: the proportion of females is 65.3% among part-time contracts (66.2% in 2011-12), and 48% among full-time contracts (stable compared to 2011-12).
- Teachers are slightly younger than the total FE staff (median age 44 years compared to 45). The average⁷ age of teachers has decreased slightly, from 46 to 45 years, between 2011-12 and 2012-13.
- As in 2011-12, the proportion of White British individuals is lower among teachers (80%) than among FE staff overall (82%). However, the difference between the two groups has reduced - in 2012-13 83% of teachers were White British compared with 84% of all FE staff⁸.
- Average annual pay for full-time teachers is £29,647, compared to £26,630 for all full-time FE staff. There is a significant amount of variation in pay across regions. As for all FE staff, teacher pay is highest in Greater London and lowest in the South East and the North East. Pay is stable compared to 2011-12 at ca. £29,600 per year for full-time teachers (£29,696 in 2011-12 and £29,647 in 2012-13).
- As in 2011-12, teachers are more likely to be part-time than other FE staff. 62% of teachers are employed on a part-time basis compared with 58% of the general FE workforce.
- Teaching staff joining in 2012-13 tend to be older, and more often male, than staff joining earlier:
 - The average age of teachers at contract start date is higher among those joining in 2012-13⁹ (42 years) than among those joining earlier (39 years).
 - 57% of teachers joining in 2012-13 were female, compared to 59% in earlier years.
- As in 2011-12, the subject areas taught by the largest number of staff are: Visual and Performing Arts and Media; Health, Social Care and Public Services; and English, Languages, and Communication. Subjects with the smallest number of teaching staff are: Retailing, Customer Service and Transportation; and Land Based Provision.

⁷ Mean average

⁸ Again we note that there is a considerable difference between the two years in terms of availability of information on ethnicity.

⁹ For the purpose of this we have defined 2012-13 as the period between August 1, 2012 and August 30, 2013.

1. Introduction

This report presents the findings from an analysis of workforce data from the Staff Individualised Record (SIR) data set for further education colleges in England for 2012-2013. This is the tenth publication in the series of annual SIR reports on the further education college workforce in England and the first to be produced by the Education and Training Foundation (ETF).

There are five types¹⁰ of colleges supplying SIR data but the vast majority of data relates to general Further Education (FE) colleges (including tertiary education). The data contain information on all staff – teaching and not teaching – covering staff demographics (such as age, gender, ethnicity, disability and sexual orientation), staff occupation and pay, subjects taught and geographical location. Since 2011-12, information on staff qualification level is no longer collected within SIR data – this requirement was removed in a bid to streamline the collection and make it less burdensome for colleges to complete.

This report provides a descriptive account of the staff working in colleges in 2012-2013 covering all aspects of the data (demographics, pay, subjects taught, etc). The report also comments on trends over time where possible by comparing the findings from the 2012-13 data with those in previous reports.

This report is organised as follows:

- **Section 2** discusses our overall approach to the work including methodology, and includes a detailed description of the data processing we have carried out, noting any differences from previous reports.
- **Section 3** contains the main description of the FE workforce in England. The section is divided into two parts, one focusing on all staff and the other focusing on teaching staff only.
- **Section 4** investigates trends in the characteristics of the FE workforce over time, comparing 2012-13 data with previous years.
- **Section 5** contains our estimates of the total workforce numbers (derived by scaling up the SIR21 data).
- **Section 6** contains our conclusions based on the analysis of the data, setting out the limitations of the work and providing a set of recommendations for future work, touching on response rates and the information collected.

¹⁰ National specialist colleges, sixth form colleges, special colleges, agriculture and horticulture and specialist designated colleges (in "Further Education College Workforce Data for England: An analysis of the Staff Individualised Record Data 2011-2012", June 2013, LSIS). Colleges may also be Adult Education Colleges (but not Local Authorities) and Colleges of Further and Higher Education. We have taken the broadest understanding of FE colleges, while excluding those covered by either the Work-Based Learning or the Adult and Community Learning Survey. This ensures we have the broadest coverage of the education and training system across all the workforce data reports.

2. Our approach

2.1 The data

The SIR data for 2012-2013 are based on responses from 123 further education colleges in England, which equates to approximately one third¹¹ of the sector. In previous years, college data submitted up to five years previously were included (backfilled) if no more recent submission was available. Backfilled records made up a third of the data sample used in the SIR 2011-12 report.

For this report, only up to date information has been used in order to ensure that the data are accurate and reflect the current status of the sector. Removing old records from the data reduces the sample size used in the analysis. However, with almost 80,000 current records, we are confident that the sample size is large enough to produce robust results.

Further, we have carried out some indicative analysis (see **Table 12** and **Table 13** in section 5 for further detail) which reveals that the sample provides good coverage of the college population, giving us confidence that the data are reasonably representative of the college population. As shown in **Table 1** below, on aggregate the colleges supplying 2012-13 data make up a third of the college population in terms of number of colleges, number of staff, number of students and total expenditure. This is reassuring – if the sample of colleges were very unrepresentative of the overall college population one would expect to see differences in these numbers. The characteristics of colleges reporting SIR therefore appear to be consistent with the profile of a typical FE colleges in general, as described in **Figure 1**¹².

The 2012-2013 SIR dataset contains 78,932 records, each relating to a standard contract of employment between a college and an individual. In some cases, two or more distinct contracts may in fact relate to the same individual - it has been estimated that up to 15%¹³ of staff hold multiple contracts. However, it is not possible to identify where this is the case within SIR. We assume, consistent with previous SIR reports, that distinct contracts always pertain to distinct individuals. For ease of presentation, throughout the report we may refer to ‘members of staff’ or ‘teachers’. However, technically, the underlying data are always at the level of ‘contracts’ or ‘teaching contracts’.

Table 1. Characteristics of SIR21 (AoC) data return

	Colleges in SIR21	All colleges based on data from AoC	Colleges in SIR21 as % of AoC total
Number	123	359	34%
Spending	£2.5bn	£7.6bn	33%
FTE	47,767	130,956	36%
Students	620,626	1,883,932	33%

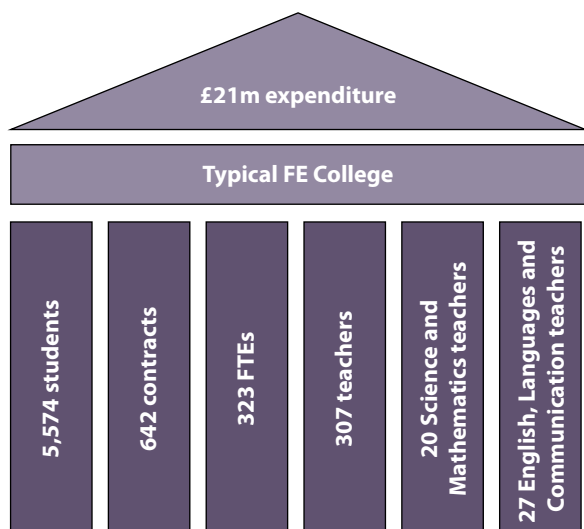
Source: Frontier analysis of SIR21 and AoC data and data provided by ETF

11 According to the Association of Colleges, there are 359 FE colleges in England in 2014. This is based on the number of colleges in the AoC regional networks. It is therefore a slightly higher figure than the number of AoC member colleges. We have used this figure as it provides the broadest understanding of the FE college workforce.

12 Further analysis of college characteristics is provided below.

13 Further Education College Workforce Data for England: An analysis of the Staff Individualised Record Data 2011-2012”, June 2013, LSIS

Figure 1. Illustration of a typical ¹⁴ FE college



Source: Frontier analysis of SIR21 and AoC data and data provided by ETF

2.2 Data processing and definitions

The original dataset received from Texuna Technologies Ltd. included data from 305 FE colleges, for a total of 193,023 records. Sources for these records included the five most recent waves of SIR data collection – SIR17 to SIR21. In order to ensure the accuracy of the information used in this report, we narrowed down the dataset to records collected within SIR21 only. These amounted to 86,284 records, coming from 177 colleges. However, for a number of these colleges, the dataset included both records collected within SIR21 and records collected in earlier years. For these institutions, then, the dataset included some up to date records – those returned in SIR21 – but also some records that were not up to date, because of the presence of other records returned in earlier years. The dataset was then processed further to only include colleges whose records were entirely collected within SIR21. In particular, this approach involved removing cases where the initial dataset did not appear to be up to date with some recent mergers between colleges¹⁵. This step led to the final set of records we analyse in this report – the 2012-13 SIR dataset. As reported in section 2.1 above, the dataset includes 78,932 records, returned from 123 FE colleges.

SIR21 data includes information on:

- FE colleges (college name, location, UK provider number), and
- Members of staff:
 - Personal characteristics: gender, date of birth, age, ethnicity, disability, sexual orientation;
 - Contracts with FE colleges: terms of employment (full-time or part-time), fraction of full-time worked, proportion of time worked providing teaching and promoting learning, proportion of time worked supporting teaching and learning, proportion of time worked providing other support, date of appointment, date of leaving (if any), category of work, annual pay, main subject taught (for teachers).

¹⁴ Typical college is a concept construct which has been constructed using the mean values of the variables in question.

¹⁵ These were: Easton College and Otley College, merged on July 31, 2012; Lewisham College and Southwark College, merged on July 31, 2012; Filton College and Stroud College, merged on August 1, 2012. Moreover, the initial dataset was updated to take into account the following name changes: Thanet College changed name to East Kent College; the Liverpool Community College changed name to the City of Liverpool College; the South Nottingham College changed name to Central College Nottingham.

Within this set of variables, it is important to note the following definitions, outlined in the data specification and used throughout this report:

- ‘Annual pay’ is the gross pay for work during the 2012-13 tax year (6 April 2012 to 5 April 2013).
- ‘Date of leaving’ is the date at which a contract terminates, unless, in the case of fixed-term and casual staff, the learning provider does not expect to renew the contract in the period immediately following.
- ‘Fraction of full-time’ is defined as the hours that a member of staff is contracted to work over a year, as a proportion of the institution’s own definition of full-time for that position. This variable can take on values larger than 100.

A number of variables required some manipulation to obtain categories consistent with the 2013 report:

- The ‘Category of work’ variable reports detailed categories that we have aggregated into broader occupational groups, consistent with the 2013 report. Specifically, we define as a teacher or a teaching contract a record where the occupational category is recorded as either ‘Trainer’ or ‘Lecturer/Tutor’.
- Similarly, the ‘Ethnicity’ variable also required some aggregation into categories consistent with the 2013 report. Moreover, records previously reported as ‘White – Other European’ have been recoded to ‘White – Any other’, in line with the SIR21 specification.

Having defined the final dataset in terms of records and variables included, we have performed a number of checks to ensure consistency with the specification:

- For SIR fields reported as categories (e.g. ethnicity, disability), we verified that values reported were consistent with the list of admissible values from the data specification.
- SIR fields 16, 17, 18, and 24 should all be proportions - with values between 0 and 100. No adjustments were necessary as a result of this check.
- In a number of cases, the ‘Age’ variable had been recorded as less than 15 – often 0. We have changed the value to missing in these instances.

3. Profile of the Further Education workforce in England

This section provides a description of the FE workforce in England based on the SIR21 data return and focusing on gender, age, ethnicity, sexual orientation, disability, location (by region) and pay. The section is divided in two parts:

- The first part describes the characteristics of all staff; and
- The second part focuses on teaching staff only.

3.1 All staff

3.1.1 Total numbers by occupation

In 2012-13, Further Education colleges in England reported information on 78,932 contracts with members of staff through SIR data collection. As shown in the table below, the largest category is Teaching staff, with 48% of contracts, followed by Service staff (17%) and Word processing, clerical and secretarial staff (10%). The occupational distribution of staff is very similar to that observed in the 2011-12 data.

Table 2. Staff numbers by occupational group in FE colleges in England, 2012-13

Occupational group	Proportion of contracts
Administrative and professional staff	6%
Technical staff	6%
Word processing, clerical and secretarial staff	10%
Service staff	17%
Teaching staff	48%
Assessors and verifiers	3%
Senior managers	1%
Other managers	6%
Unknown	3%

Source: Frontier analysis of SIR21 data

3.1.2 Contract types

The number of contracts is a good measure of the number of people involved in FE colleges which have reported SIR data in 2012-13. However, when assessing the size of the workforce, it is also necessary to take into account the terms of employment – specifically, the number of hours per week worked by an individual.

Table 3 below illustrates the proportion of part-time contracts by occupational group. While this is only 11% for Senior managers, a considerable proportion of all other groups work part-time, ranging from 26% for Other managers to 72% for Service staff. The average across all occupational groups is 58%. This is broadly consistent with the employment terms among the total school workforce in England, where the proportion of part-time workers is 60%¹⁶.

16 Source: Frontier elaboration of ONS School Workforce 2013 statistics, available at <https://www.gov.uk/government/publications/school-workforce-in-england-november-2013> (retrieved on July 17, 2014).

Table 3. Proportion of part-time staff by occupational group in FE colleges in England, 2012-13

Occupational group	Proportion of part-time staff	Proportion of full-time staff
Administrative and professional staff	45%	55%
Technical staff	49%	51%
Word processing, clerical and secretarial staff	60%	40%
Service staff	72%	28%
Teaching staff	62%	38%
Senior managers	11%	89%
Other managers	26%	74%
Assessors and verifiers	62%	38%
Unknown	62%	38%
Total	58%	42%

Source: Frontier analysis of SIR21 data

As a consequence of the prevalence of part-time contracts in the population, it is useful to resort to the idea of Full-Time Equivalents (FTE) to assess the effective size of the FE workforce. The numbers in **Table 4** below can be thought of as the proportion of the total number of staff we would find in the FE workforce if everyone was working full-time¹⁷.

The total number of FTE contracts is 47,767, or approximately 60% of the total number of contracts in the 2012-13 data. This reflects the considerable proportion of part-time in FE contracts, as shown in **Table 3**.

Table 4. Number of FTE staff by occupational group in FE colleges in England, 2012-13

Occupational group	Proportion of FTE staff
Administrative and professional staff	8%
Technical staff	7%
Word processing, clerical and secretarial staff	11%
Service staff	15%
Teaching staff	44%
Assessors and verifiers	2%
Senior managers	1%
Other managers	9%
Unknown	3%

Source: Frontier analysis of SIR21 data

17 In order to compute this, we count each contract according to the proportion of full-time working hours it specifies. A full-time contract will count as one, but a contract that implies working only half of the full-time hours will count as 0.5

3.1.3 Turnover

Measures of staff turnover are widely used to understand how many employees are gained or lost by a business or a sector within a period of time. We define staff turnover as the number of contracts ending within 2012-13¹⁸, as a proportion of the total number of contracts in the same period. For each occupational category, a sizeable proportion of the contracts in our dataset have ended within 2012-13. This measure is especially high for Teaching staff and Assessors and verifiers, both above the average turnover rate of 16% across all FE staff. In **Table 5** below, we also present the net employment change, which is the difference between contracts starting in 2012-13 and contracts ending in 2012-13, as a proportion of total contracts. For most occupational categories, the number of contracts ending within 2012-13 exceeds the number of contracts starting in the same year, implying a decrease in staff numbers.

Table 5. Turnover and net employment change rates by occupational group in FE colleges in England, 2012-13

Occupational group	Turnover rate	Net employment change
Administrative and professional staff	12%	0.3%
Technical staff	12%	-0.2%
Word processing, clerical and secretarial staff	16%	-1.3%
Service staff	14%	0.5%
Teaching staff	18%	-2.8%
Assessors and verifiers	20%	-1.6%
Senior managers	14%	-4.9%
Other managers	15%	-5.5%
Unknown	21%	0
Total	16%	-1.8%

Source: Frontier analysis of SIR21 data

3.1.4 Gender

The FE workforce is predominantly female: 64% of all contracts reported within the 2012-13 SIR21 collection relate to female members of staff. The prevalence of women is considerably higher than in the UK workforce overall (where it was 46% in 2013¹⁹), but lower than in the school workforce in England, where the proportion of females in 2013 was 80%²⁰. The gender composition of the FE workforce has changed little over the last few years.

In all occupational categories, with the partial exception of Senior managers and Technical Staff, women represent over 50% of total staff, as shown in Figure 2 below. Figure 2 also shows that the proportion of women is larger among part-time contracts, across all occupational groups.

¹⁸ For the purpose of this and further analysis in the report involving contract start and leaving dates, we define 2012-13 as the period between August 1, 2012 and August 30, 2013.

¹⁹ Source: Office for National Statistics (2013), Labour Market Statistics, November 2013, http://www.ons.gov.uk/ons/dcp171778_332467.pdf (retrieved on July 17, 2014).

²⁰ Department for Education (2014), School Workforce in England: November 2013, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/302023/School_Workforce_2013_SFR_Final.pdf (retrieved on July 17, 2014).

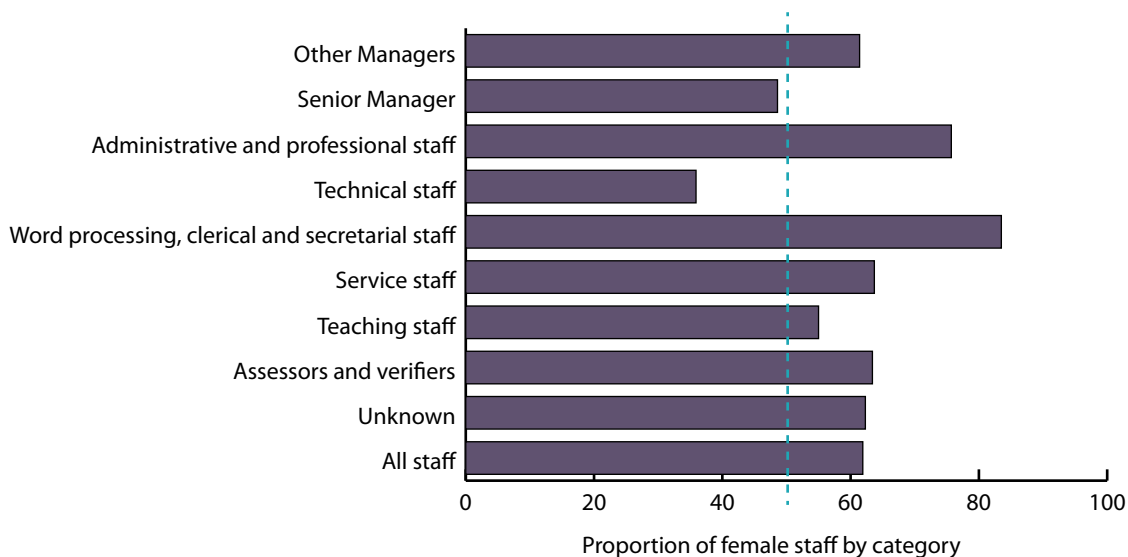
Figure 2. Proportion of female staff in FE colleges in England, 2012-13



Source: Frontier analysis of SIR21 data

The prevalence of women in the FE workforce, however, is not driven by the prevalence of part-time contracts. In Figure 3 below, we show the proportion of women in terms of Full-Time Equivalents²¹. Even in this case, the proportion of women is always above 50%, with the exception of Senior managers and Technical staff.

Figure 3. Proportion of FTE female staff in FE colleges in England, 2012-13



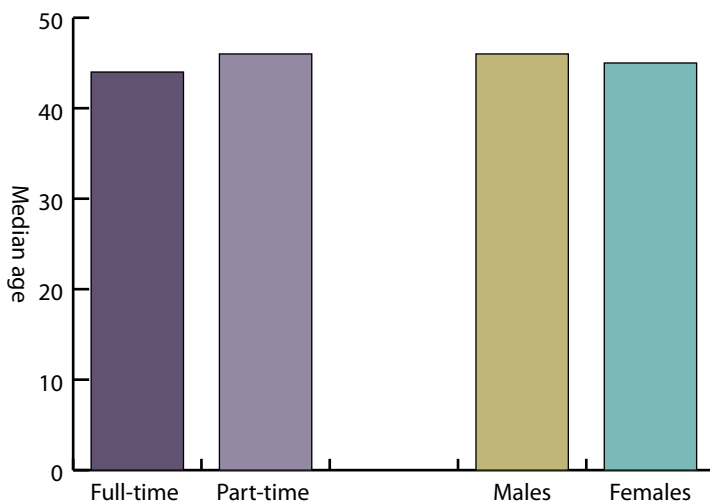
Source: Frontier analysis of SIR21 data

²¹ Please see 3.1.2 for a definition.

3.1.5 Age

The median age of FE staff, across all occupational categories and both men and women, is 45 years. This is slightly higher than the mean age, 44, which is to be expected given that there is a minimum age for employment, but not a maximum. In this section, we focus on the median, but the analysis would not change significantly by using the mean instead. Figure 4 below shows the median age of FE staff split by contract type and by gender.

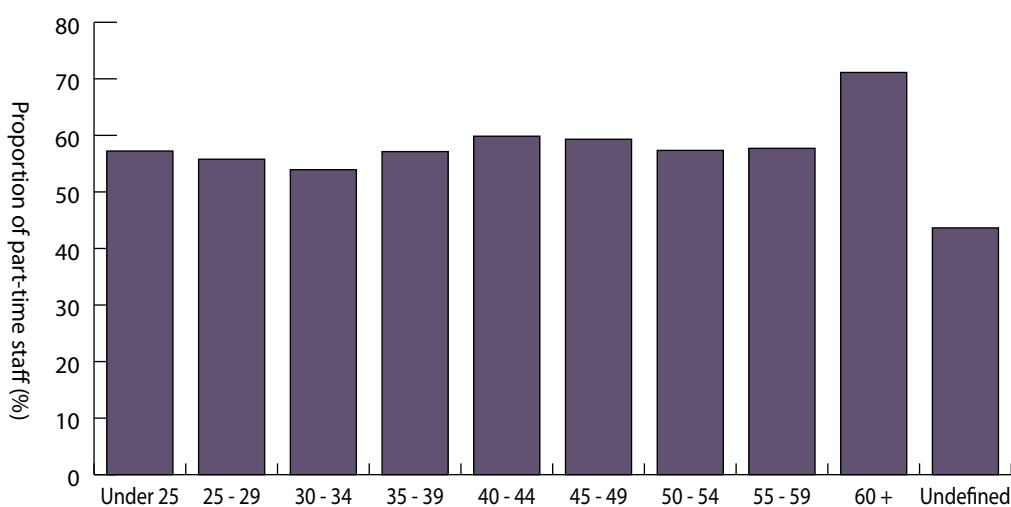
Figure 4. Median age by contract type and gender in FE colleges in England, 2012-13



Source: Frontier analysis of SIR21 data

We find male staff to be slightly older than female staff (median age 46 years versus 45). Part-time staff tends to be older than full-time staff (median age 46 years versus 44), due to a high prevalence of part-time contracts among members of staff aged 60 and over, as evident in Figure 5 below.

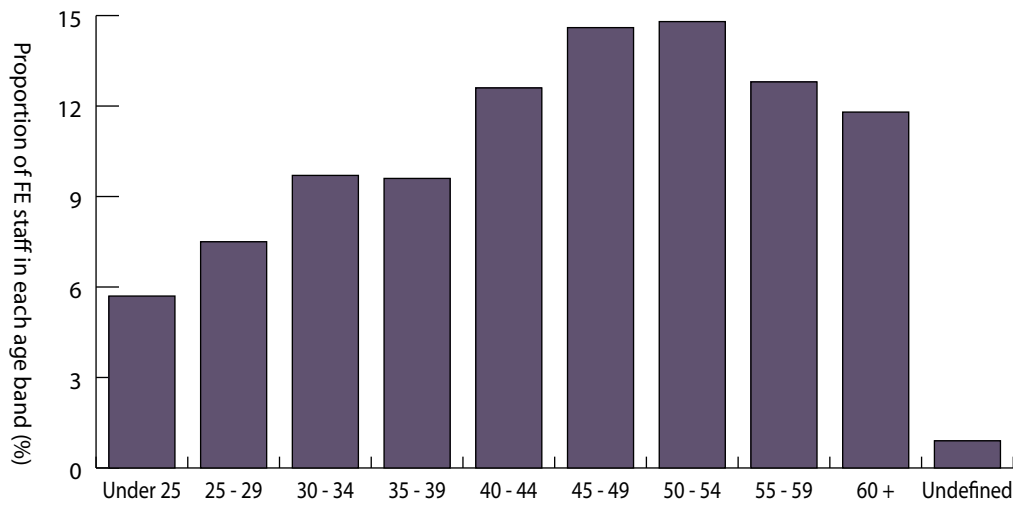
Figure 5. Proportion of part-time staff by age bands, 2012-13



Source: Frontier analysis of SIR21 data

Figure 6 below shows the distribution of FE staff across age bands.

Figure 6. Proportion of staff by age bands in FE colleges in England, 2012-13



Source: Frontier analysis of SIR21 data

3.1.6 Ethnicity

The majority of FE staff are white British, across all occupational categories. However, the ethnicity of members of staff is not known in almost one quarter of cases – 24.2% across all occupational categories. Restricting the analysis to cases where ethnicity is known, white British members of staff represent over 84% of total FE staff. The proportion of white British individuals is slightly lower among teachers (83.4%), and higher among senior managers (91.3%).

Table 6. Ethnicity of staff in FE colleges in England, 2012-13

	All staff	Teaching staff	Senior managers
White – British	84.2%	83.4%	91.3%
White – other	4.8%	5.5%	2.5%
Mixed	1.2%	1.1%	0.3%
Asian/Asian British	4.4%	4.5%	2.2%
Black/African/Caribbean/Black British	3.5%	3.6%	2.5%
Any other	1.9%	1.9%	1.1%

Source: Frontier analysis of SIR21 data

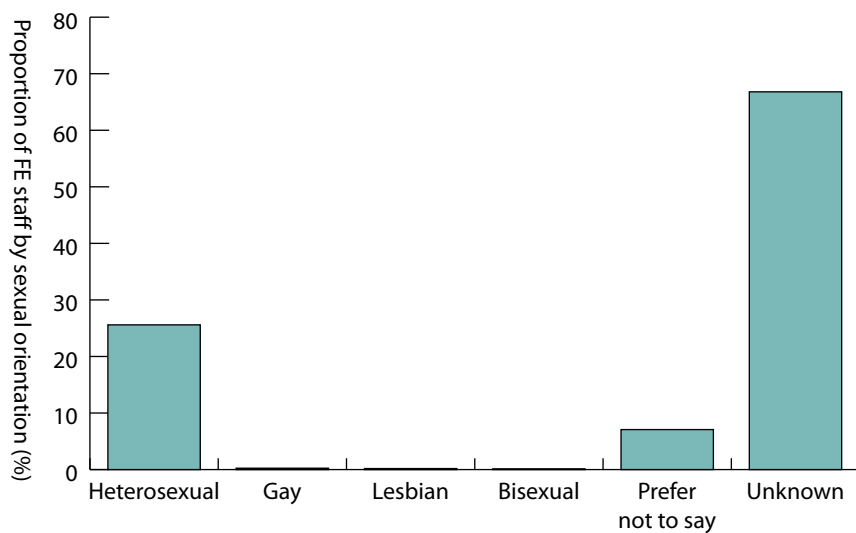
The proportion of white British members of staff is lower in the FE workforce than in the overall school workforce in England, where it is above 85% for all types of staff with the exception of unqualified teachers (79.8%).

3.1.7 Sexual Orientation

Only a minority of records reported within the SIR 2012-13 data collection contain information on sexual orientation. As shown in **Figure 7** below, sexual orientation is not known for 73.9% of staff, either because no information has been reported (66.8% of staff), or because they have specified a preference not to disclose it (7.1% of staff).

Where sexual orientation has been indicated, a very large majority of staff have reported themselves as heterosexual.

Figure 7. Sexual orientation of FE staff in England, 2012-13



Source: Frontier analysis of SIR21 data

3.1.8 Disability

Approximately 4% of FE staff reported having a disability. Of these, around half (1.9% of FE staff) provided information on the type of disability. Within this group, physical impairment is the most common form of disability (1.2% of FE staff), followed by learning difficulty (0.6%) and mental ill health (0.2%). 85% of staff reported not having a disability. In 11% of cases, the disability status is not known, either because no information has been reported (2% of staff), or because members of staff have specified a preference not to disclose their status (9%).

3.1.9 Regions

Colleges in the 2012-13 SIR dataset are relatively concentrated in Greater London and the North West, which account for just under one third of the institutions in our sample. However, members of staff are distributed more evenly across regions in England. As shown in Table 7 below, Greater London and the North West are the two largest regions by number of contracts, but they are followed closely by the West and East Midlands. The North East has the lowest number of contracts (3,942) amounting to 5% of our sample. Further analysis of regional variations is provided in sections 3.1.10 and 3.2.1 below, where we analyse variation in pay, respectively across all occupational categories and for teaching staff only.

Table 7. Distribution of FE staff across regions in England, 2012-13

Region	Number of contracts	Proportion of contracts
East of England	5,246	7%
East Midlands	10,097	13%
Greater London	11,797	15%
North East	3,942	5%
North West	12,285	16%
South East	7,879	10%
South West	7,633	10%
West Midlands	11,196	14%
Yorkshire and Humber	8,857	11%
England	78,932	100%

Source: Frontier analysis of SIR21 data

3.1.10 Annual pay

The 2012-13 SIR data records annual pay contracted in pay bands, starting from £0 to 1,999, and progressing in £1,000 increments up to the highest category - £100,000 or more.

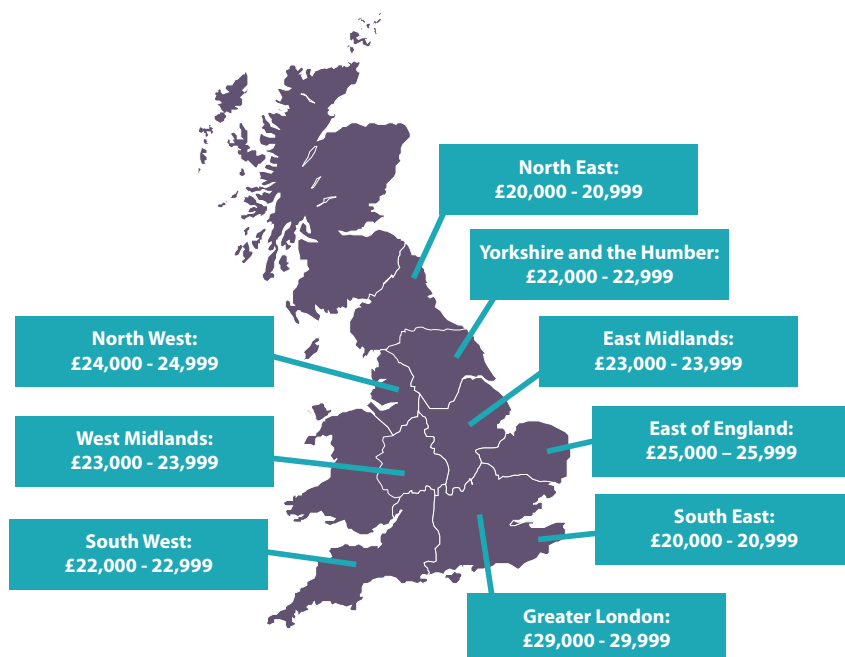
The median annual pay band for all full-time FE staff in 2012-13 was between £23,000 and £23,999. **Table 8** below provides detail on median full-time pay for individual occupational categories. This ranges from the £16,000-16,999 band for word processing, clerical, secretarial, and service staff to £62,000 – 62,999 for senior managers.

Table 8. Median pay for full-time staff in FE colleges in England, 2012-13

Occupational group	Median pay band (£)
Senior managers	62,000 – 62,999
Other managers	32,000 – 32,999
Teaching staff	29,000 - 29,999
Assessors and verifiers	23,000 – 23,999
Administrative and professional staff	21,000 – 21,999
Technical staff	19,000 – 19,999
Service staff	16,000 – 16,999
Word processing, clerical and secretarial staff	16,000 – 16,999

Source: Frontier analysis of SIR21 data

Figure 8. Median pay bands for full-time staff by region, 2012-13



Source: Frontier analysis of SIR21 data

Annual pay varies significantly by region, as shown in Figure 8. The median pay band is highest in Greater London, at £29,000 to 29,999. There is also some variation across other regions, but this does not necessarily follow a specific geographic pattern. The two highest pay regions after Greater London are the East of England and the North West, and the two lowest pay regions are the South East and the North East.

For consistency with the 2013 report, we also compute the mean annual pay across all occupational categories²², and we use this measure to compare pay by gender.

The mean annual pay in 2012-13 across all occupations was £26,630. This is lower than the average annual pay across the entire full-time UK workforce in 2013, £29,270²³. Annual pay is higher for males, at £27,522, than for females, at £25,824. This gap could be explained by gender differences in occupation categories, location, or other factors, whose role could be disentangled through further research. Note that this gap is smaller than for the total UK workforce, where the average pay is £31,801 for males and £25,286 for females²⁴.

3.2 Teaching staff

In this section, we focus our analysis on the characteristics of teaching staff in FE colleges.

We first look at information that we have analysed in section 3.1 with respect to all FE staff: gender, age, ethnicity, annual pay. We highlight any differences between teachers and FE staff overall.

Then, in section 3.2.2, we analyse subjects taught in FE colleges. We find significant variation in the number of teachers per college by subject taught. Specifically, the number of teachers per college is sometimes relatively low for subjects that are among those most commonly offered by FE colleges. We also find that the number of contracts ending in 2012-13 is larger than the number of contracts starting in the same period, across all subjects. We then look into whether these patterns are explained by variation in pay.

22 Specifically, we use the mid-point of each pay band as a proxy for the actual annual pay in a contract. We then focus on full-time contracts only, and restrict our analysis to individuals with pay above the bottom band (£0 to 1,999) only.

23 Frontier elaboration of ONS data on average gross weekly earnings of full-time employees by region, (November 2013), available at <http://www.ons.gov.uk/ons/search/index.html?newquery=earn05> (retrieved on July 17, 2014).

24 Ibid.

3.2.1 Overview of characteristics in comparison to all FE staff

Personal characteristics of teachers are consistent with the broader profile of FE staff, in terms of gender, age, and ethnicity. However, we do find small differences between teachers and FE staff overall:

- Like the total FE staff, teachers in FE colleges in England are predominantly female, but there is a lower proportion of women among teaching staff (58.9% compared to 63.8% across all staff). This is consistent with the overall school workforce, where the proportion of females is 74% among teachers and 80% among the entire workforce²⁵.
- Teachers are somewhat younger than the total FE staff (median age 44 years compared to 45).

The median annual pay band for full-time teachers is £29,000 to £29,999, compared to £23,000 to £23,999 for all full-time FE staff. Average pay across teaching staff is £29,696. This is lower than the average salary for a full-time qualified teacher across English schools, £38,100²⁶.

Consistent with the overall picture provided in section 3.1.10, there is a significant amount of variation in pay across regions. As for all FE staff, average pay is highest in Greater London, at £35,000 to 35,999, and lowest in the South East (£19,000 to 19,999) and the North East (£23,000 to 23,999). Further detail is provided in Annexe 1.

Staff turnover among teachers is relatively high compared to the entire FE workforce. Approximately 18% of the teaching staff contracts in our dataset ended in 2012-13, compared to an average across all staff of 16%.

3.2.2 Subjects taught

Some subjects are offered by the majority of FE colleges in England while others are less common. The most common courses/subject areas (provided by more than 90% of colleges) are:

- English, Languages, and Communication;
- Business Administration, Management and Professional;
- Science and Mathematics;
- Visual and Performing Arts and Media;
- Hospitality, Sports, Leisure and Travel;
- Health, Social Care and Public Services, and
- ICT.

Other course types which are less common include:

- Foundation Programmes;
- Engineering, Technology and Manufacturing;
- Humanities;
- Construction;
- Hairdressing and Beauty Therapy;
- Retailing, Customer Service and Transportation, and
- Land Based Provision.

²⁵ Department for Education (2014), School Workforce in England: November 2013, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/302023/School_Workforce_2013_SFR_Final.pdf (retrieved on July 17, 2014).

²⁶ Department for Education (2014), School Workforce in England: November 2013, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/302023/School_Workforce_2013_SFR_Final.pdf (retrieved on July 17, 2014).

Table 9 ranks all the subjects taught in FE colleges in England in 2012-13 by the number of colleges where the course is offered. In some cases, there appears to be a mismatch between the frequency with which a subject is offered and the proportion of trainers and lecturers teaching it. For instance, while Science and Mathematics courses are the third most often provided, they only rank eight by the number of staff teaching them.

Table 9. Subjects taught in FE colleges reporting SIR data in England, 2012-13

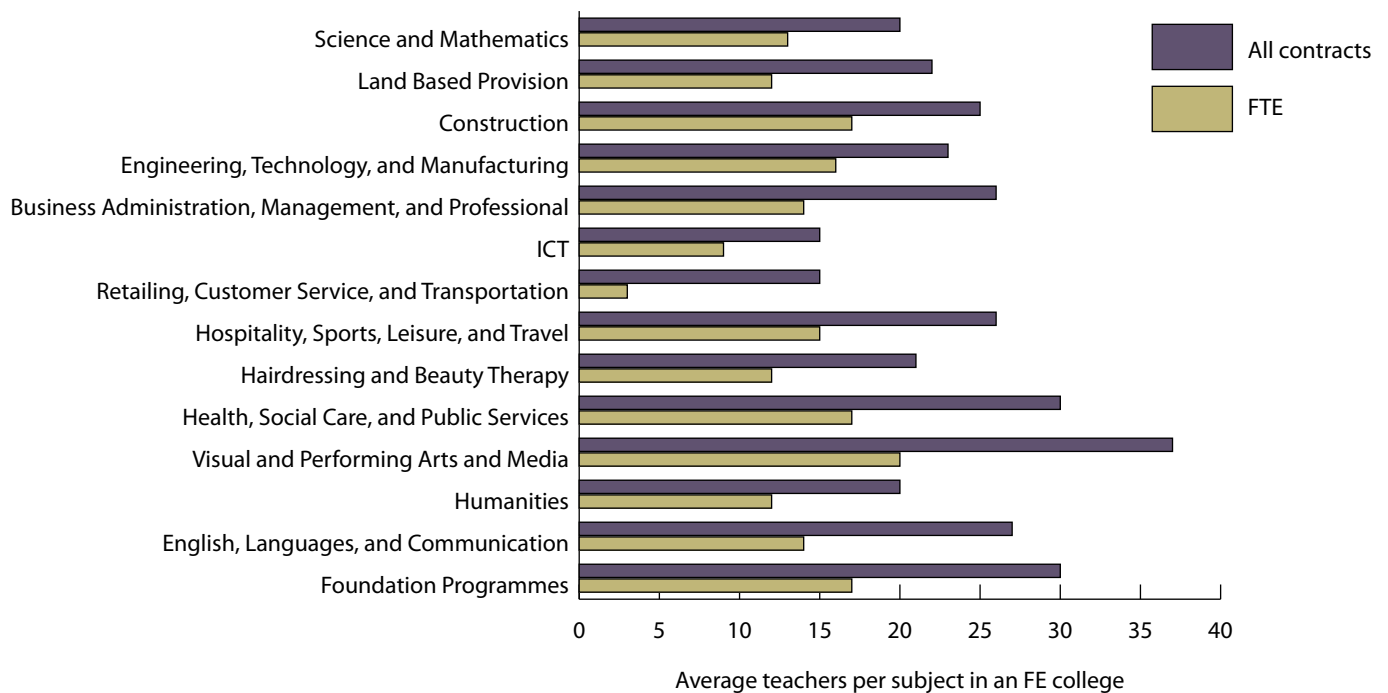
Subject	Number of colleges providing subject	Proportion of colleges providing subject	Number of teachers teaching subject	Proportion of teachers teaching subject ²⁶
English, Languages, and Communication	116	96%	3,151	9.4%
Business Administration, Management, and Professional	115	95%	2,986	8.9%
Science and Mathematics	113	93%	2,257	6.7%
Visual and Performing Arts and Media	112	93%	4,196	12.5%
Hospitality, Sports, Leisure, and Travel	111	92%	2,846	8.5%
Health, Social Care, and Public Services	110	91%	3,353	10%
ICT	109	90%	1,627	4.9%
Foundation Programmes	101	83%	3,079	9.2%
Engineering, Technology and Manufacturing	99	82%	2,315	6.9%
Humanities	96	79%	1,903	5.7%
Construction	82	68%	2,012	6%
Hairdressing and Beauty Therapy	82	68%	1,710	5.1%
Retailing, Customer Service, and Transportation	57	47%	874	2.6%
Land Based Provision	52	43%	1,160	3.5%

Source: Frontier analysis of SIR21 data

This result is linked to a significant variation in the number of teachers per college by main subject taught. As shown in Figure 9 below, there are on average 37 members of staff teaching Visual and Performing Arts and Media in colleges where the subject is offered. On the opposite end of the scale, where ICT and Retailing, Customer Service and Transportation are taught, a college employs on average 15 members of staff who mainly teach either of these two subjects. Science and Mathematics is also on the low end of the scale, with 20 teachers per college compared to an average across all subjects of 24.

²⁷ As a proportion of teaching staff contracts where the main subject taught is known – just under 90% of total teaching contracts.

Figure 9. Teachers per college by main subject taught, 2012-13²⁸



Source: Frontier analysis of SIR21 data

Figure 9 also shows the number of FTE teachers per college by subject. Using this metric, Visual and Performing Arts and Media remains the area with most staff per college. English, Languages and Communication and Business Administration, Management and Professional, however, fare worse in terms of FTEs. Both subjects are above the average in terms of total number of teachers, but below the average in terms of FTEs. Science and Mathematics still appear to be relatively understaffed.

In Table 10 below, we show turnover rates and net change in employment as a proportion of number of teachers, by subject taught.

Table 10. Turnover rates and net employment changes by subject in England, 2012-13

Subject	Turnover rate	Net employment change
English, Languages, and Communication	15%	-2%
Business Administration, Management and Professional	19%	-3%
Science and Mathematics	19%	-3%
Visual and Performing Arts and Media	16%	-3%
Hospitality, Sports, Leisure and Travel	17%	-1%
Health, Social Care, and Public Services	16%	-2%
ICT	18%	-3%
Foundation Programmes	17%	-8%
Engineering, Technology and Manufacturing	19%	-2%
Humanities	19%	-8%
Construction	20%	-7%
Hairdressing and Beauty Therapy	10%	-1%
Retailing, Customer Service and Transportation ²⁸	43%	-4%
Land Based Provision	17%	-3%

Source: Frontier analysis of SIR21 data

²⁸ For each subject, the average number of teachers presented here only includes colleges offering that subject

²⁹ Note that this is the subject taught less often in terms of staff numbers. This explains the large turnover rate – a small number of staff leaving is enough to determine a high turnover when the total staff numbers are small.

As discussed in section 3.1.3, turnover rates tend to be higher than the average across all FE staff. The net employment change is negative for all subjects, although the size of the effect is generally less than 5% of the total number of staff teaching the subject. Humanities, Construction, and Foundation Programmes have especially large net changes.

Variation of full-time pay by subject taught may explain or reflect the patterns observed in the number of teachers per college. For example, low pay for teachers of Land Based Provision compared to other subjects may explain the low number of teaching staff for this subject per college. On the other hand, high pay for subjects where there appear to be few teachers may reflect a scarcity of supply of staff for that subject. The picture provided by **Table 11** below is mixed – partly as a result of limited variation in pay by subject. There is however some evidence of pay being higher than the median across all teachers (£29,000 to 29,900) for subjects where we find low numbers of teaching staff per college. Specifically, the median pay bands for Maths and Humanities teachers are respectively £32,000 to £32,999 and £33,000 to £33,900. While there is variation in pay across regions for both subjects – the median pay for Humanities teachers is as low as £26,000 to £26,999 in the North East – the median pay in each region for Maths and Humanities teachers tends to be higher than the median across all teachers in that region³⁰. For both these subjects, the average number of teachers per college is relatively low – 13 for Maths and 12 for Humanities. This may reflect difficulties in recruitment – pay may be driven up by the need to attract staff from a relatively small pool of suitable candidates.

Table 11. Annual pay for full-time teaching staff by subject in England, 2012-13

Subject	Median pay band
Science and Mathematics	£32,000 - 32,999
Land Based Provision	£26,000 - 26,999
Construction	£30,000 - 30,999
Engineering, Technology and Manufacturing	£30,000 - 30,999
Business Administration, Management and Professional	£32,000 - 32,999
ICT	£31,000 - 31,999
Retailing, Customer Service and Transportation	£26,000 - 26,999
Hospitality, Sports, Leisure and Travel	£29,000 - 29,999
Hairdressing and Beauty Therapy	£30,000 - 30,999
Health, Social Care and Public Services	£29,000 - 29,999
Visual and Performing Arts and Media	£30,000 - 30,999
Humanities	£33,000 - 33,999
English, Languages and Communication	£31,000 - 31,999
Foundation Programmes	£30,000 - 30,999

Source: Frontier analysis of SIR21 data

³⁰ Science and Mathematics teachers in the North East seem to be an exception, with the median pay band being £17,000 to £17,999, below the median pay for all teachers in the region.

4 Trends in the Further Education college workforce

This section investigates how the characteristics of the FE workforce have changed over time by comparing the findings from the analysis of 2012-13 data with those from previous years. Any key changes are highlighted.

We also compare recent recruitment of teaching staff by FE colleges with past recruitment patterns. This is based on comparing the characteristics of staff with recent contract start dates to the characteristics of staff with earlier contract start dates.

4.1 All FE staff

- The gender composition of FE staff overall has remained constant with respect to 2011-12. The proportion of females in 2012-13 is 63.8%, compared to 63.5% in 2011-12. We also find that patterns in the gender split of staff for different terms of employment and for different occupational categories are consistent with 2011-12:
 - The proportion of women remains higher among part-time contracts. Here, we also find a small increase: 72.2% in 2012-13 compared to 71.2% in 2011-12.
 - Variation in gender composition by occupational category remains consistent with previous years. The proportion of women remains especially high among administrative and professional staff, Word processing, clerical, secretarial staff, and service staff, and especially low among technical staff.
- We find no significant differences in the age composition of FE staff between 2011-12 and 2012-13. As shown in Annexe 1, there is little difference in the proportions of staff in each age band between the two years.
- The coverage of information on ethnicity has decreased substantially over time. In the previous report, using data from 2008/9 up to 2011-12, information on ethnicity was available for 94.4% of contracts. Using only the 2012-13 data, this proportion goes down to 75.8%. Based on the information available, the ethnic composition of FE staff in 2012-13 appears to be consistent with 2011-12. However, given the large difference in data coverage, comparisons between the two years should be considered tentative.
- The proportion of part-time contracts is consistent with 2011-12: 58% in 2012-13 compared to 57% in the previous year.
- The distribution of FE staff across occupational categories has remained constant for most occupational categories, with the exception of teaching staff, down to 48% of all contracts compared to 49% in 2011-12³¹.
- Annual pay for full-time staff has remained constant in nominal terms. We find a very small increase in nominal pay across all staff (0.1%). This amounts to a fall in real terms, given consumer price inflation in the UK of 2.7% in September 2013 compared to September 2012.
 - Breakdown by occupational categories: nominal pay has increased compared to 2011-12 for Service staff, Other managers and Technical staff but has decreased for Senior managers, Word processing staff, and Administrative and professional staff. Nominal pay has remained essentially constant (annual variation under 0.5%) for Teaching staff and Assessors and verifiers.
 - Breakdown by gender: a gap remains between female and male members of staff, but smaller than in 2011-12. The ratio between female and male annual pay maintains a (slowly) increasing trend, going from 93.4% in 2011-12 to 93.8% in 2012-13.

31 Note that the number of contracts where the occupation is unknown has increased from 2.1% to 2.7%.

4.2 Trends in the characteristics of teaching staff

In order to assess whether the characteristics of teaching staff have changed over time, we run two sets of comparisons:

- First, we compare the features outlined in sections 3.2.1 and 3.2.2 above to the characteristics of teaching staff in 2011-12 as described in the SIR 20 Report³².
- Second, we compare staff having a contract starting within 2012-13 with staff having earlier contract dates. This allows us to investigate whether staff joining FE colleges recently have different characteristics compared to staff who joined earlier.

Teaching staff as a proportion of total FE staff has decreased compared to 2011-12 – 47.9% compared to 49.1%. We find a change in the age profile of teaching staff, but little variation in other characteristics compared to the previous report. Specifically:

- The gender split of teaching staff between contract types is consistent with 2011-12: the proportion of females is 65.3% among part-time contracts (66.2% in 2011-12), and 48% among full-time contracts (stable compared to 2011-12).
- Average³³ age has decreased from 46 to 45 years between 2011-12 and 2012-13. This may be linked to the number of contracts ending in 2012-13 being larger than the number of contracts starting in 2012-13, as highlighted in section 3.1.3 above.
- Ethnicity: as in 2011-12, the proportion of White British staff is lower among teachers than among FE staff overall. However, the difference between the two groups is smaller in 2012-13. Again note that there is a considerable difference between the two years in terms of availability of information on ethnicity.
- Pay is stable compared to 2011-12 at £29,600 per annum for full-time teachers (£29,696 in 2011-12, £29,647 in 2012-13).
- As in 2011-12, teachers are working part-time more often than the average member of FE staff.

Staff joining in 2012-13 tend to be older, and more often male, than staff joining earlier:

- The average age of teachers at contract start date is higher among those joining in 2012-13³⁴ (42 years) than among those joining earlier (39 years).
- 57% of teachers joining in 2012-13 were female, compared to 59% in earlier years.

³² Note that the analysis in the 2013 Report was based on data from 2011-12 and the two previous years. Here we only used the most recent information available – data reported in 2012-13.

³³ Mean average

³⁴ As in section 3.1.3, when comparing staff with different contract start dates we define 2012-13 as the period between August 1, 2012 and August 30, 2013

5 Inferences on the total workforce population

In sections 3 and 4, we analysed the characteristics of the FE workforce and how these have changed over time based on those FE colleges which have provided up to date information as part of the SIR data collection. As previously discussed, approximately one third of the FE sector supplied current data for 2012-13.

In this section, we consider whether it is possible to estimate the total size of the FE workforce, based on the sample of 123 colleges providing current data. Constructing population estimates based on a sample is clearly a challenging task. In order to produce robust estimates one needs to be satisfied that the sample used is representative of the population. If the colleges in our sample are systematically different from colleges outside the sample this would lead to us over-estimating or under-estimating the size of the workforce.

We use information on the location, expenditure and student numbers of all FE colleges in England in order to compare the colleges in our sample to colleges which have not reported SIR data in 2012-13.

Table 12 below shows the split of colleges across regions in England, for institutions reporting SIR21, and for all FE colleges. The regional profile is broadly consistent between the two sets of colleges – for instance, colleges in the North East are 5% of our sample, and 6% of the total population. There are however small differences for some regions. East Midlands and Greater London account for a larger proportion of our sample than of the whole population. On the other hand, East of England and the South East are under-represented in our sample.

Table 12. Colleges reporting SIR in 2012-13 as a proportion of total number of colleges, by region

Region	Number of colleges reporting SIR21	Proportion of colleges reporting SIR21	Number of colleges	Proportion of colleges
East of England	9	7%	39	11%
East Midlands	14	11%	25	7%
Greater London	24	20%	50	14%
North East	6	5%	20	6%
North West	21	17%	59	16%
South East	13	11%	62	17%
South West	9	7%	30	8%
West Midlands	15	12%	39	11%
Yorkshire and Humber	12	10%	35	10%
England	123	100%	359	100%

Source: Frontier analysis of SIR21 and AoC data

This could be a cause for concern if we found colleges in regions that are either over- or under-represented in our sample to be different from colleges in other regions. In **Table 13**, we provide an overview of total expenditure per FTE member of staff, average number of students and average FTE staff per college across regions in England. We find that there are no stark differences across regions. Colleges in Greater London and in the North East have a higher expenditure per FTE than the national average – and a lower number of FTE staff. Colleges in the South East tend to be smaller than the average in terms of students, but not in terms of FTE staff. However, regional values tend to be relatively concentrated around the national average.

Table 13. Total expenditure and FTE staff in colleges reporting SIR in 2012-13, as a proportion of the total

Region	Total expenditure per FTE (£)	Number of students per college	FTE staff per college
East of England	59.8	5,053	363
East Midlands	58.9	6,405	440
Greater London	67.8	6,310	279
North East	63.1	4,865	308
North West	56.5	4,811	408
South East	59.3	4,479	333
South West	55.6	6,280	450
West Midlands	56.8	4,999	332
Yorkshire and Humber	58.3	5,559	406
England	59.7	5,635	383

Source: Frontier analysis of SIR21 data and SFA data on college accounts

This analysis indicates that there is no clear evidence of systematic differences between our sample and other FE colleges. Consequently, it is reasonable to think that the picture provided in sections 3 and 4 broadly reflects the characteristics of the total FE workforce in England. Further, it is possible to use the sample information from SIR21 to generate tentative estimates which indicate the likely size of the FE workforce in 2012-13.

We also produce indicative estimates of the total number of members of FE staff by occupational category, and the total number of FE teachers by main subject taught. Our simple estimates are obtained by multiplying the average number of staff per college by the total number of FE colleges. Based on an average of 642 members of staff per college, we estimate the total FE workforce to amount to approximately 230,000 individuals. Note that this is likely to be an upper bound for the true number of FE members of staff. This is because within SIR, the number of individuals is computed by counting contracts. However, this may lead to over-estimate the number of members of staff, as an individual may hold more than one contract with an FE college (or with more than one college).

As a cross-check, we also apply the same method to the entire SIR dataset - including not only records within the SIR 2012-13 collection, but also records from previous years, going back to 2006/07. The two sets of estimates produced are very close, with the partial exception of Senior managers, as shown in **Table 14** below. We also provide estimates of Full-Time Equivalents, based on SIR21.

Table 14. Estimated total FE staff in England, 2012-13

Occupational group	Estimated staff per college (SIR21)	Total estimated staff count (all SIR)	Total estimated staff count (SIR21)	Estimated FTEs (SIR21)
Administrative and professional staff	41	14,774	14,646	10,987
Technical staff	40	11,925	14,307	10,225
Word processing, clerical and secretarial staff	66	23,783	23,732	14,695
Service staff	109	37,451	39,038	21,558
Teaching staff	307	109,842	110,370	61,346
Assessors and verifiers	19	6,103	6,763	3,506
Senior managers	3	637	1,258	1,159
Other managers	39	13,863	13,861	12,036
Total	642	226,922	230,378	139,419

Source: Frontier analysis of SIR21 data

In **Table 15** overleaf, we provide further detail on FE teaching staff, estimating the number of teachers by main subject taught. Note that these are likely to be lower bounds for the true number of teachers. This is because a small number of teaching contracts do not report information on subject taught³⁵, which results in the number of teachers per college as reported in Table 9 to be marginally lower than the true value. Again, we also provide estimates based on the entire SIR dataset as well, as a cross-check, and estimates of Full-Time Equivalents, based on SIR21.

³⁵ There is no information on subject taught in approximately 4,300 records, or approximately 11% of all teacher records in our sample.

Table 15. Estimated total FE teachers in England, 2012-13³⁶

Subject	Teachers per college	Estimated number of teachers (all SIR)	Estimated number of teachers (SIR21)	Estimated FTE teachers (SIR21)
English, Languages, and Communication	26	9,869	9,197	4,722
Business Administration, Management, and Professional	24	8,650	8,715	4,664
Science and Mathematics	18	6,700	6,588	4,206
Visual and Performing Arts and Media	34	13,451	12,247	6,424
Hospitality, Sports, Leisure, and Travel	23	8,366	8,307	4,887
Health, Social Care, and Public Services	27	9,525	9,786	5,609
ICT	13	5,050	4,749	2,753
Foundation Programmes	25	9,229	8,987	5,047
Engineering, Technology, and Manufacturing	19	6,257	6,757	4,579
Humanities	15	5,871	5,554	3,356
Construction	16	5,839	5,872	4,161
Hairdressing and Beauty Therapy	14	4,978	4,991	2,901
Retailing, Customer Service, and Transportation	7	1,902	2,551	577
Land Based Provision	9	2,674	3,386	1,810

Source: Frontier analysis of SIR21 data

³⁶ The average number of teachers presented here includes all colleges reporting SIR in 2012/13, for all subjects. As a result, these figures are slightly lower than the ones presented in Figure 9, where we have only considered the colleges offering each of the subjects.

6 Conclusions

The Education and Training Foundation (ETF) commissioned Frontier Economics to carry out an analysis of workforce data from the Staff Individualised Record (SIR) data set for further education colleges in England for 2012-2013. The key findings from our analysis are summarised below.

All staff

- The gender composition of the FE workforce has not changed since last year. The proportion of females in 2012-13 is 63.8%, compared to 63.5% in 2011-12. This is similar to the Work Based Learning (WBL) workforce (where 65% of staff are female) but is lower than the Adult and Community Learning (ACL) workforce, where 74% of staff are female³⁷.
- We also find that patterns in the gender split of staff for different terms of employment and for different occupational categories are consistent with 2011-12:
 - The proportion of women remains higher among part-time contracts. Here, we also find a small increase: 72.2% in 2012-13 compared to 71.2% in 2011-12.
 - Variation in gender composition by occupational category remains consistent with previous years. The proportion of women remains especially high among Administrative and professional staff, Word processing, clerical, secretarial staff, and Service staff, and especially low among Technical staff.
- The median age of the FE workforce is 45 years. Part time staff tend to be older than full time staff (46 years vs. 44 years respectively). Male staff are on average slightly older than female staff median age (46 years vs. 45 years). We find no significant differences in the age composition of FE staff between 2011-12 and 2012-13.
- The age profile of the FE workforce is somewhat different from that of the WBL and ACL workforce:
 - 23% of FE staff are aged under 35 compared with 38% of WBL and 11% of ACL staff; and
 - 24% of FE staff are aged 55 or older compared with 12% of WBL and 32% of ACL staff.
- The majority of FE staff (84%) are white British, across all occupational categories. This is similar in WBL (86%) and ACL (83%) providers. The proportion of white British staff is highest among senior managers (91%). The coverage of information on ethnicity has decreased substantially over time. In the 2013 report, using data from 2008/9 up to 2011-12, information on ethnicity was available for 94.4% of contracts. Using only the 2012-13 data, this proportion goes down to 75.8%. Based on the information available, the ethnic composition of FE staff in 2012-13 is consistent with 2011-12. However, given the large difference in data coverage, comparisons between the two years should be considered tentative.
- As in previous years, sexual orientation remains underreported – 67% of records returned were marked as ‘unknown’³⁸. This is, however, an improvement on the last two years where the proportion of records marked as ‘unknown’ was 92% (2010-2011) and 83% (2011-2012)³⁹. A further 7% of responses are marked as ‘prefer not to say’. Where sexual orientation has been indicated, the vast majority of staff have reported themselves as heterosexual.

37 “Work Based Learning Workforce Survey 2012-13”, AELP and ETF and “Adult and Community Learning Workforce Survey 2012-13”, HOLEX and ETF

38 A similar proportion of records were marked as unknown in the WBL (71%) and ACL (75%) surveys.

39 “Further Education Workforce Data for England: An analysis of the Staff Individualised Record Data 2011-2012”, June 2013, LSIS

- Approximately 4% of FE staff reported having a disability. This is similar to the rate reported in 2011-12 and to the rates reported in the ACL (4.2%) and WBL (3.6%) workforce surveys. Of those, around half provided information on the type of disability. Physical impairment is the most common form of disability, followed by learning difficulty and mental ill health. 85% of staff reported not having a disability and in 11% of cases disability status is not known, either because no information was reported (2% of staff), or because respondents preferred not to disclose their status (9%).
- The incidence of part time working in 2012-13 is similar to previous years: 58% of contracts in 2012-13 were part-time compared to 57% in the previous year. The incidence of part-time working is higher in the ACL (80%) sector, and lower in the WBL (14%) sector.
- Median annual pay for full-time employees in 2012-13 is between £23,000 and £23,999. This ranges from the £16,000-16,999 band for word processing, clerical, secretarial, and service staff to £62,000 – 62,999 for senior managers. Annual pay varies significantly by region: it is highest in Greater London, at £29,000 to 29,999, and lowest in the South East and the North East at £20,000 – 20,999.
- Average pay is higher for males, at £27,522, than for females, at £25,824. This gap could be explained by gender differences in occupation categories, location, or other factors, whose role could be disentangled through further research.
- The gender pay gap has reduced slightly since last year - the ratio between female and male annual pay has increased from 93.4% in 2011-12 to 93.8% in 2012-13.
- Annual pay for full-time staff has changed little. We find a very small increase across all staff of 0.1%. Relative to 2011-12, pay increased for Service staff, Other managers and Technical staff, and decreased for Senior managers and Word processing staff. Pay remained largely constant for Teaching staff, Assessors and verifiers, Administrative and professional and Technical staff.

Teaching staff

- The largest occupational category in the FE workforce is teaching staff: this category accounts for almost half (48%) of all contracts in the SIR21 data. However, this has decreased slightly compared to 2011-12 when it stood at 49%.
- Teachers in FE colleges in England are predominantly female, but there is a lower proportion of women teaching compared to the overall FE workforce (59% compared to 64% across all staff). The gender split of teaching staff between contract types is consistent with 2011-12: the proportion of females is 65.3% among part-time contracts (66.2% in 2011-12), and 48% among full-time contracts (stable compared to 2011-12).
- Teachers are somewhat younger than the total FE staff (median age 44 years compared to 45). The average⁴⁰ age of teachers has decreased slightly, from 46 to 45 years, between 2011-12 and 2012-13.
- As in 2011-12, the proportion of White British individuals is lower among teachers (80%) than among FE staff overall (82%). However, the difference between the two groups has reduced: in 2012-13 83% of teachers were White British compared with 84% of all FE staff⁴¹.
- The median annual pay band for full-time teachers is £29,000 to £29,999, compared to £23,000 to £23,999 for all full-time FE staff. There is a significant amount of variation in pay across regions. As for all FE staff, teacher pay is highest in Greater London and lowest in the South East and the North East. Pay is stable compared to 2011-12 at ca. £29,600 annual for full-time teachers (£29,696 in 2011-12 and £29,647 in 2012-13).
- As in 2011-12, teachers are working part-time more often than the average member of FE staff. 62% of teachers are employed on a part-time basis compared with 58% of the general FE workforce.

40 Mean average

41 Again we note that there is a considerable difference between the two years in terms of availability of information on ethnicity.

- Teaching staff joining in 2012-13 tend to be older, and more often male, than staff joining earlier:
 - The average age of teachers at contract start date is higher among those joining in 2012-13⁴² (42 years) than among those joining earlier (39 years).
 - 57% of teachers joining in 2012-13 were female, compared to 59% in earlier years.
- As in 2011-12, the subject areas taught by the largest number of staff are Visual and Performing Arts and Media, Health, Social Care and Public Services and English, Languages and Communication. Subjects with the lowest levels of teaching staff are Retailing, Customer Service and Transportation and Land Based Provision.

The results presented in this report are based on a sample of colleges - around a third of the sector - providing up to date information as part of the SIR21 data collection. Response rates in previous years have tended to be higher⁴³ and the decline over time is a cause for concern since these data are important for understanding the FE landscape and informing future policy. Going forward, it will be important to ensure that response rates by colleges are maximised. In order to achieve this, a number of options could be considered, including:

- Streamlining the data requirements and process further to make the return less burdensome for colleges without compromising the collection of important information;
- Collecting aggregate college information rather than individual level data if this makes the data collection process less onerous for colleges;
- Providing explicit incentives for colleges to maximise returns;
- Focusing future data collections on a sample of colleges which is representative of the college population. A new sample could be generated for each wave of data collection. This would reduce the burden of data reporting on all colleges, as an institution would only have to report when selected, rather than every year. The easiest way to obtain a representative sample is applying simple random sampling: selecting randomly colleges from the population until reaching the desired sample size⁴⁴. The optimal sample size would depend on the key statistics to be estimated, and on the desired level of statistical confidence and margin of error.

Beyond response rates, there are other facets of the SIR data that could be improved going forward, relating to the way in which information is recorded, and what type of information is collected.

The current methodology does not allow identification of individual members of staff. This limits the possibility to investigate reliably issues such as recruitment and retention patterns, and staff experience⁴⁵. An anonymised staff identifier which could be used to track individuals across the sector could be a valuable resource for future analysis.

Moreover, there are pieces of information which are currently not collected in the data but may be important for understanding the sector. Notably, the SIR data no longer collects information on teacher qualifications which are clearly important for future workforce planning.

Other information gaps include type of education (e.g. offender education, special education needs) which cannot currently be identified in the data. More disaggregation of certain variables may also be beneficial and allow us to better understand teacher roles. For example, subject areas are currently aggregated in a way which does not allow us to identify English and Mathematics teachers explicitly, as these are grouped within 'English, Languages and Communication' and 'Science and Mathematics'

42 For the purpose of this we have defined 2012-13 as the period between August 1, 2012 and August 30, 2013.

43 Approximately two thirds of records in the 2013 report were returned in 2011-12 ("Further Education College Workforce Data for England: An analysis of the Staff Individualised Record Data 2011-2012", June 2013, LSIS). If this implies that approximately two thirds of the 266 colleges included in the 2013 report submitted data in 2011-12, this would mean that SIR information was up to date for 177 colleges in 2011-12, compared to 123 in 2012-13.

44 An alternative method may involve splitting the population of colleges into subgroups (for example, by region or by college type) and drawing random samples from each subgroup. This may be preferable if it is important that each of the subgroups is represented in the population.

45 Given the current data specification, it is possible to compute the length of a contract, but this may not be equal to a member of staff's overall experience in the FE sector.

respectively. Furthermore, subjects are not known for more than 10% of teachers, up from 1.7% in 2007/08. There are also problems with the categorisation of staff, notably the lack of ‘teaching assistant’ role.

Future collections may wish to consider how to improve this aspect of the data.

Annexe 1: Figures and Tables

Figure 10. SIR21 process and timelines



Source: ETF

Table 16. Median annual pay bands for full-time teaching staff by regions in England

Region	Median annual pay band (£)
East of England	30,000 – 30,999
East Midlands	32,000 – 32,999
Greater London	35,000 – 35,999
North East	24,000 – 24,999
North West	30,000 – 30,999
South East	25,000 – 25,999
South West	29,000 – 29,999
West Midlands	30,000 – 30,999
Yorkshire and Humber	30,000 – 30,999
England	29,000 – 29,999

Source: Frontier analysis of SIR21 data

Table 17. Distribution of FE workforce by age bands, 2012-13 compared to 2011-12

Age band	Proportion of FE staff (2011-12)	Proportion of FE staff (2012-13)	Proportion of teaching staff (2011-12)	Proportion of teaching staff (2012-13)	Proportion of part-time staff (2011-12)	Proportion of part-time staff (2012-13)
Under 25	5.8%	5.7%	2.2%	1.6%	5.5%	5.5%
25 – 29	8%	7.5%	6.8%	6.8%	9.1%	7.1%
30 – 34	9.5%	9.7%	9.8%	10.1%	10.7%	8.9%
35 – 39	10.2%	9.6%	10.8%	10.3%	10.2%	9.3%
40 - 44	13.3%	12.6%	14.4%	13.6%	12.8%	12.7%
45 – 49	15.4%	14.6%	16.3%	15.6%	15.4%	14.6%
50 – 54	14.6%	14.8%	15.3%	15.4%	15.7%	14.4%
55 – 59	12.3%	12.8%	13.1%	13.4%	12.8%	12.5%
60 and over	10.7%	11.8%	11.1%	12.2%	7.5%	14.2%
Not known / not provided	0.1%	0.9%	0.2%	1.0%	0.1%	0.7%

Source: Frontier analysis of SIR21 data

Annexe 2: Profile of English and Mathematics teachers in the FE workforce, 2012/13

A typical English and Communication teacher in an FE college in England is female, aged 47, and works part-time. She has been employed under her current contract with an FE college for just over 6 years⁴⁶. For full-time English teachers, the average annual pay is £31,225.

A typical Science and Mathematics teacher in an FE college in England is female, aged 46, and is slightly more likely to be working part-time than full-time. She has been employed under her current contract with an FE college for just over 5 years⁴⁷. For full-time Science and Mathematics teachers, the average annual pay is £31,724.

Table 1 below compares key characteristics of English and Mathematics teachers with the entire FE teaching staff and with FE employees across all occupational categories.

Table 18. Key characteristics of English and Communication and Science and Mathematics teachers

	English and Communication teachers	Science and Mathematics teachers	All FE teachers	All FE members of staff
Average age	47	46	45	44
Proportion working part-time	69%	53%	62%	58%
Proportion of females	75%	55%	59%	64%
Median contract duration	6 ¼ years	5 ¼ years	5 ½ years	5 ½ years
Average annual pay for full-time staff	£31,225	£31,724	£29,696	£26,630

Source: Frontier analysis of SIR21 data

⁴⁶ The median contract duration for an English teacher is 2,300 days, or just over six years and one quarter.

⁴⁷ The median contract duration for a Science and Mathematics teacher is 1,906 days, or just under five years and one quarter.

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