Subjects in profile



Computing

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Computing

This data report provides contextual information about the computing subject area and covers:

- student numbers and student characteristics
- student outcomes and experiences
- staff numbers.



Student numbers



About this data

In this section, we show student numbers across subject areas and within the computing subject area.¹ The data is either sourced directly from the data dashboard we publish about the size and shape of a provider's student population, or through summarising the same student populations used to construct that dashboard.² It includes all students taught or registered at an OfSregistered provider who are mainly studying in the UK and are actively studying for a higher education qualification.

¹ Information about the subjects studied is based on level 2 of the Common Aggregation Hierarchy (CAH2). See www.hesa.ac.uk/support/documentation/hecos/cah.

² See www.officeforstudents.org.uk/data-and-analysis/size-and-shape-of-provision-data-dashboard.

Computing is the third largest subject area

The number of students registering on computing courses makes it the third largest subject area. This subject area consistently recruits a substantial proportion of all students across all modes and levels of study.



Figure 1a: Number of entrants by subject area for academic year 2021-22

Source: OfS size and shape of provision data dashboard, published in April 2023.

- Figure 1a shows the total number of entrants (to all modes and levels of study) in the academic year 2021-22, by subject area.
- In 2021-22 there were 61,450 entrants to the computing subject area.
- Entrant numbers to these courses were the third highest of all subject areas.



Figure 1b: Percentage of entrants to the computing subject area of all entrants by year, mode and level of study

Source: OfS size and shape of provision data dashboard, published in April 2023.

- Figure 1b shows the percentage of entrants to the computing subject area of all entrants (i.e. entrants to all subject areas), by mode and level of study, for each academic year 2018-19 to 2021-22.
- The computing subject area recruited approximately 6 per cent of all students across all types of provision.
- The proportion of full-time undergraduate entrants for computing has remained relatively stable between 2018-19 to 2021-22 at approximately 5 per cent.
- The proportion of full-time postgraduate entrants for computing has steadily increased between 2018-19 and 2021-22, from around 4 per cent to around 7 per cent.
- While the proportion of apprenticeship postgraduates in computing has shown a steady increase over the time series, the total number of apprenticeship postgraduates across all subjects is relatively small and has just over doubled: 3,700 in 2018-19 to 7,840 in 2021-22.

Full-time students at all levels have increased over time

Full-time undergraduate entrants have increased by 13 per cent since 2018-19. Full-time postgraduates have increased by 162 per cent since 2018-19.



Figure 2: Computing entrant numbers by year, mode and level of study

Source: OfS size and shape of provision data dashboard, published in April 2023.

- Figure 2 shows the numbers of entrants to the computing subject area at each mode and level of study, for each academic year from 2018-19 to 2021-22.
- In 2021-22 there were 28,960 full-time undergraduate entrants and 23,790 fulltime postgraduate entrants to this subject area. There was a drop in full-time undergraduate entrants between 2020-21 and 2021-22 of 420. Other combinations of modes and levels of study generally have fewer than 5,000 entrants per year.
- Entrant numbers to full-time undergraduate and postgraduate courses have increased by 13 per cent and 162 per cent respectively since 2018-19.

Full-time entrants comprise the large majority of entrants to the computing subject area (around 86 per cent in 2021-22). As such, the remainder of this report focuses on students who are either full-time undergraduates or full-time postgraduates.

Most undergraduates study computing at 'low or unknown tariff' providers

Most undergraduate entrants since 2018-19 were taught at 'low or unknown tariff' providers, but increasing numbers are studying at medium and high tariff providers.³



Figure 3: Full-time undergraduate entrants to computing by year and type of provider

Source: OfS analysis of HESA and ILR student records. This analysis is consistent with the data used in the OfS size and shape of provision data dashboard, published in April 2023.

- Figure 3 shows the numbers of full-time undergraduate entrants to the computing subject area by the type of provider at which they are taught, for each academic year from 2018-19 to 2021-22.
- The largest numbers of entrants have consistently been to those providers classified as low or unknown tariff.
- High tariff and medium tariff provider types have shown the largest increases in entrant numbers since 2018-19, of 1,520 and 590 respectively.

³ Provider types are defined using the student typology, available at www.officeforstudents.org.uk/publications/ provider-typologies-2022/. Unclassified is not a defined provider type in the typology and only incorporates students that are registered at an OfS-registered provider but taught at a provider that is not an OfS-registered provider through a subcontractual arrangement.

Full-time postgraduate entrant numbers at 'low or unknown tariff' providers now exceed those at 'high tariff' providers

In 2018-19, more full-time postgraduates studied at 'high tariff' providers than other provider types. However, since 2019-20, 'low or unknown tariff' has shown the highest intake.





Source: OfS analysis of HESA and ILR student records. This analysis is consistent with the data used in the OfS size and shape of provision data dashboard, published in April 2023.

- Figure 4 shows the numbers of full-time postgraduate entrants to the computing subject area by the type of provider at which they are taught, for each academic year from 2018-19 to 2021-22.
- Since 2019-20, 'low or unknown tariff' providers have represented the largest intake of entrants.
- The rate at which entrant numbers are increasing year on year since 2018-19 for low or unknown tariff providers averages at around 62 per cent. This is higher than the rates at which entrant numbers are increasing for medium or high tariff provider types, which average at around 43 per cent and around 18 per cent respectively since 2018-19.

Overall, a small proportion of students are taught through subcontractual arrangements, but this has increased for fulltime postgraduates

For most modes and levels of study, the proportion of students taught through subcontractual arrangements⁴ is small. However, the proportions for full-time postgraduate programmes have increased in recent years.



Figure 5a: Percentage of entrants to computing taught through subcontractual arrangements by academic year, mode and level of study

Source: OfS analysis of HESA and ILR student records. This analysis is consistent with the data used in the OfS size and shape of provision data dashboard, published in April 2023.

- Figure 5a shows the percentage of entrants to the computing subject area who are taught through subcontractual arrangements by mode and level of study, for each academic year 2018-19 to 2021-22.
- The percentage of full-time undergraduate entrants to computing who are taught through subcontractual arrangements has remained stable since 2018-19 (approximately 4 per cent)
- The percentage of full-time postgraduate entrants to computing who are taught through subcontractual arrangements has increased from around 1 per cent to around 2 per cent since 2018-19.

⁴ The figures in this section relate to students registered at an OfS-registered provider but taught at another provider (whether that teaching provider is OfS-registered or not).

The number of distinct subcontractual partnerships has changed over time.



Figure 5b: Number of distinct subcontractual partnerships involving entrants to computing by academic year, mode and level of study

Source: OfS analysis of HESA and ILR student records. This analysis is consistent with the data used in the OfS size and shape of provision data dashboard, published in April 2023.

- Figure 5b shows the number of distinct subcontractual partnerships that can be identified based on providers registering or teaching entrants to the computing subject area, by mode and level of study, for each academic year 2018-19 to 2021-22.⁵
- The number of distinct subcontractual partnerships delivering full-time postgraduate computing courses has more than doubled from 3 in 2018-19, to 8 in 2021-22.
- When taken together with the doubling of the proportion of full-time postgraduate entrants taught through subcontractual arrangements, shown in Figure 5a, the more modest increase in the number of subcontractual partnerships shown in Figure 5b suggests expansion of both new and existing subcontracting arrangements.
- The number of distinct subcontractual partnerships delivering provision for part-time undergraduates has reduced from 7 to 1 over the time series.

⁵ Around 0.6 per cent of entrants across all modes and levels of study are taught through a subcontractual arrangement where the teaching provider cannot be identified. These students are excluded from this figure.

The full-time undergraduate population is mostly male, but otherwise diverse

Figures 6a and 6b show the percentage of full-time undergraduate entrants to the computing subject area by various student and course characteristics.

Figure 6a: Percentage of full-time undergraduate entrants to the computing subject area by student characteristics (aggregate of data for 2018-19 to 2021-22)



Note: data based on students domiciled in the UK with known ethnicity



Source: OfS analysis of HESA and ILR student records. This analysis is consistent with the OfS size and shape of provision data dashboard, but limited to the computing subject area, aggregating the academic years 2018-19 to 2021-22 inclusive.

⁶ The indices of multiple deprivations (IMD) are official measures of the relative deprivation for small geographical areas. The English IMD is based on seven different facets of deprivation, including: income deprivation; employment deprivation; education, skills and training deprivation; health deprivation and disability; crime; barriers to housing and services; and living environment deprivation. Quintile 1 areas have the highest level of deprivation and those in quintile 5 have the lowest. For further information, see www.gov.uk/government/statistics/english-indices-of-deprivation-2019.

⁷ TUNDRA (tracking underrepresentation by area) is an OfS area-based measure that classifies local areas across England into five equal groups – or quintiles – based on the proportion of 16 year old state-funded mainstream school pupils who participate in higher education aged 18 or 19 years. Quintile one shows the lowest rate of participation and quintile five shows the highest rate of participation. For further information, see www.officeforstudents.org.uk/data-and-analysis/young-participation-by-area/about-tundra/.

Figure 6b: Percentage of full-time undergraduate entrants to the computing subject area by study and course characteristics (aggregate of data for 2018-19 to 2021-22)



Source: OfS analysis of HESA and ILR student records. This analysis is consistent with the OfS size and shape of provision data dashboard, but limited to the computing subject area, aggregating the academic years 2018-19 to 2021-22 inclusive.

Most full-time postgraduates are non-UK domiciled

Figures 7a and 7b show the percentage of full-time postgraduate entrants to the computing subject area by various student and course characteristics.⁸

Figure 7a: Percentage of full-time postgraduate entrants to the computing subject area by student characteristics (aggregate of data for 2018-19 to 2021-22)



Ethnicity



Note: data based on students domiciled in the UK with known ethnicity



Source: OfS analysis of HESA and ILR student records. This analysis is consistent with the OfS size and shape of provision data dashboard, but limited to the computing subject area, aggregating the academic years 2018-19 to 2021-22 inclusive.

⁸ The student characteristics applicable to postgraduate provision are a subset of those available in respect of undergraduate provision.



Sex



Figure 7b: Percentage of full-time postgraduate entrants to the computing subject area by study and course characteristics (aggregate of data for 2018-19 to 2021-22)



Source: OfS analysis of HESA and ILR student records. This analysis is consistent with the OfS size and shape of provision data dashboard, but limited to the computing subject area, aggregating the academic years 2018-19 to 2021-22 inclusive.

The make-up of computing student populations differs from other subjects for some student characteristics

For certain student characteristics – namely, age, ethnicity, domicile and sex – a comparison of computing to all other subject areas highlights some marked differences.



Figure 8a: Percentage of mature, full-time, undergraduate and postgraduate entrants

Source: OfS analysis of HESA and ILR student records. This analysis is consistent with the OfS size and shape of provision data dashboard but limited to the computing subject area.

- Figure 8a shows the percentage of entrants to computing who are mature compared with all other subject areas. It covers full-time undergraduate and postgraduates for each academic year from 2018-19 to 2021-22.9
- The proportions of postgraduate entrants to computing have risen over the last four years.
- For full-time undergraduates, the proportion of mature students is around 7 percentage points lower for computing in 2021-22 than the equivalent proportion for all other subjects (which has shown an increase since 2018-19).
- For full-time postgraduates, the proportion of mature students is around 6 percentage points higher for computing in 2021-22 than the equivalent for all other subjects.

⁹ For undergraduates, mature students include students who are aged 21 or over on entry to their course. For postgraduates this includes students who are aged 25 or over on entry to their course.



Figure 8b: Percentage of full-time undergraduate and postgraduate entrants who are from ethnic groups other than white

- Figure 8b compares the percentage of entrants to computing who are from ethnic groups other than white with all other subject areas. It covers full-time undergraduate and postgraduates for each academic year from 2018-19 to 2021-22.
- The proportions of full-time undergraduate and postgraduate students who are from ethnic groups other than white are consistently higher than for all other subject areas.
- The difference between computing and all other subjects has increased for full-time undergraduates over the period.

Figure 8c: Percentage of entrants in deprivation quintiles 1 and 2 for full-time undergraduates



- Figure 8c compares the percentage of computing subject entrants who are from the most deprived areas (quintiles 1 or 2) with all other subject areas. It covers full-time undergraduates in each academic year from 2018-19 to 2021-22.
- The proportions of full-time undergraduate students who are from deprivation quintiles 1 or 2 are consistently higher in computing than for all other subject areas. However, this gap has decreased from around 8 per cent, in 2018-19, to around 1 per cent in 2021-22.



Figure 8d: Percentage of non-UK domiciled, full-time undergraduate and postgraduate entrants

- Figure 8d compares the percentage of computing entrants who are non-UK domiciled with all other subject areas. It covers full-time undergraduate and postgraduates for each academic year from 2018-19 to 2021-22.
- The proportions of full-time undergraduate and postgraduate students who are non-UK domiciled are consistently higher in computing than for all other subject areas. This difference has increased between 2018-19 and 2021-22.
- The difference for postgraduate entrants is substantial: the proportion of non-UK domiciled students in 2021-22 was around 20 percentage points higher than the equivalent for all other subjects. Additionally, this gap is increasing from around 13 per cent in 2018-19, to around 20 per cent in 2021-22.



Figure 8e: Percentage of male, full-time undergraduate and postgraduate entrants

- Figure 8e compares the percentage of computing entrants who are male with male entrants to all other subject areas. It covers full-time undergraduates and postgraduates from academic years 2018-19 to 2021-22.
- The percentage of full-time computing entrants who are male is consistently higher than for all other subject areas (average of around 41 per cent and 26 per cent higher for full-time undergraduates and full-time postgraduates, respectively). However, between 2018-19 and 2021-22, this gap has been decreasing.
- The percentage of full-time computing entrants who are male has decreased over the last four years (since 2018-19: around a 2 per cent decrease for full-time undergraduates and around a 4 per cent decrease for full-time postgraduates).

Student outcomes and experiences



About this data

In this section, we show the distribution of student outcomes and experiences by provider and subject area.¹⁰ The OfS constructs and publishes a standard set of student outcome and experience data measures for use in our regulation. They inform our regulatory judgements for the following purposes:

- approving and monitoring access and participation plans
- regulating student outcomes through condition B3, and for risk-based monitoring of quality and standards more generally¹¹
- assessments as part of the Teaching Excellence Framework (TEF).

We construct data indicators as numerical measures that help us to understand the outcomes and experiences that a provider delivers for its students at different stages of the student lifecycle in higher education.¹² In this section we include measures of:

- continuation in, and completion of, the study of higher education qualifications
- student views and perceptions of different aspects of their higher education experience
- progression into the labour market and other destinations after leaving higher education.

To compare computing with other subjects, we present student outcomes data covering full-time undergraduate and full-time postgraduate taught masters' students for the 10 subjects offered by the largest number of providers.¹³ Annex A provides more information, and descriptive statistics for each chart shown in this section of the report.

¹⁰ Throughout, the data is sourced from the OfS's data dashboard that shows the distribution of student outcomes and experience measures for each provider, at www.officeforstudents.org.uk/data-and-analysis/ sector-distribution-of-student-outcomes-and-experience-measures-data-dashboard/. It includes all students taught or registered at an OfS-registered provider.

¹¹ As set out in the revised ongoing conditions of registration B1, B2, B4 and B5, which came into effect from 1 May 2022, and the revised initial and ongoing condition of registration B3, which came into effect from 3 October 2022.

¹² For more information about our student outcome and experience measures, see 'Description of student outcome and experience indicators used in OfS regulation' at www.officeforstudents.org.uk/publications/ description-and-definition-of-student-outcome-and-experience-measures/.

¹³ In 2021-22, entrants who are full-time postgraduate masters' students represent 93 per cent of full-time postgraduate entrants in computing (Figure 7b). Sector distributions are not published for the aggregate of full-time postgraduates but are published for full-time postgraduate masters' students. It is for these reasons that the sector distribution for full-time postgraduate masters' is shown here.

Student outcomes vary across providers, with lower continuation and completion rates at many providers relative to other subject area

Median indicator values for computing for the continuation and completion outcomes are among the lowest relative to other subject areas. However, median progression outcomes are among the highest relative to other subject areas. The range of the distributions of student outcomes for computing vary in width, but are mostly similar to the other subject areas.

Continuation

Continuation measures report the proportion of students who were observed to be continuing in the study of a higher education qualification (or who have gained a qualification) one year and 15 days after they started their course.¹⁴





Source: OfS published sector distribution of student outcome and experience measures data dashboard, published in July 2023.

- Figure 9a shows the distribution of continuation outcomes for full-time undergraduate students across the selected subject areas calculated for each provider across the sector.
- The computing subject has the third lowest median indicator value relative to the other subject areas, at 86.9 per cent.
- Health and social care has the lowest median indicator value at 84.5 per cent, followed by sport and exercise sciences at 86.6 per cent.
- The computing subject area has a similar range of continuation outcomes relative to the ten subject areas presented. The interquartile range or the range across the middle 50 per cent of values is the fourth largest among the ten subjects shown, at 7.8 percentage points.

¹⁴ The continuation rates shown here are based on aggregations over four academic years, covering entrants between 2017-18 and 2020-21 inclusive.

Figure 9b: Sector distribution of continuation outcomes for full-time postgraduate taught masters' (entrants in 2017-18 to 2020-21)



Source: OfS published sector distribution of student outcome and experience measures data dashboard, published in July 2023.

- Figure 9b shows the distribution of continuation outcomes for full-time postgraduate taught masters' students across the selected subject areas calculated for each provider across the sector.
- The computing subject has the third lowest median indicator value relative to the other subject areas, at 93.4 per cent.
- Sports and exercise sciences have the lowest median indicator value at 91.3 per cent, followed by health and social care at 91.6 per cent.
- The computing subject area has a narrow distribution of continuation outcomes relative to the other subject areas presented: the interquartile range of the distribution is the third smallest among the ten subjects shown, at 4.4 percentage points.

Completion

Completion measures report the proportion of students who were observed to have gained a higher education qualification (or were continuing in the study of a qualification) four years and 15 days after they started their course. ¹⁵

Figure 9c: Sector distribution of completion outcomes for full-time undergraduates (entrants in 2014-15 to 2017-18)



Source: OfS published sector distribution of student outcome and experience measures data dashboard, published in July 2023.

- Figure 9c shows the distribution of completion outcomes for full-time undergraduate students across the selected subject areas calculated for each provider across the sector.
- The computing subject has the lowest median indicator value relative to the other subject areas, at around 80.8 per cent.
- The computing subject area has a similar range of completion outcomes relative to the ten subject areas presented: the interquartile range of the distribution is the fourth smallest among the ten subjects shown, at 9.2 percentage points.

Figure 9d: Sector distribution of completion outcomes for full-time postgraduate taught masters' (entrants in 2014-15 to 2017-18)



Source: OfS published sector distribution of student outcome and experience measures data dashboard, published in July 2023.

- Figure 9d shows the distribution of OfS-registered providers by completion outcomes for full-time postgraduate taught masters' students across the selected subject areas calculated for each provider across the sector.
- The computing subject has the third lowest median indicator value relative to the other subject areas, at 94.4 per cent.
- Sport and exercise sciences have the lowest median indicator value at 92.7 per cent, followed by health and social care at 93.2 per cent.
- The computing subject area has a similar range of completion outcomes relative to the ten subject areas presented: the interquartile range of the distribution is the fourth largest among the ten subjects shown, at 9.8 percentage points.

Progression

Progression measures use responses to the Graduate Outcomes survey to report on qualifiers' labour market and other destinations 15 months after they qualify from higher education. They report the proportion of qualifiers who report managerial or professional employment, further study, or other positive outcomes among the activities that they were undertaking at the Graduates Outcomes survey census date. ¹⁶

¹⁶ The progression rates shown here are based on aggregations over four academic years, covering qualifiers between 2017-18 and 2020-21 inclusive. The following activities are counted positively by the progression measure: employment where the associated ONS Standard Occupational Classification (SOC) 2020 major grouping is 1 to 3 (managers, directors, senior officials, professional occupations, associate professional and technical occupations), engaged in a course of study, training or research, taking time out to travel, caring for someone (unpaid) or retired.

Further information on SOC 2020 can be found at: www.ons.gov.uk/methodology/classificationsandstandards/standardoccupationalclassificationsoc/soc2020.

Figure 9e: Sector distribution of progression outcomes for full-time undergraduates (qualifiers in 2017-18 to 2020-21)



Source: OfS published sector distribution of student outcome and experience measures data dashboard, published in July 2023.

- Figure 9e shows the distribution of progression outcomes for full-time undergraduate students across the selected subject areas calculated for each provider across the sector.
- The computing subject has the third highest median indicator value relative to the other subject areas at 78.0 per cent.
- Allied health has the highest median indicator value at 85.9 per cent, followed by engineering at 81.3 per cent.
- The computing subject area has a similar range of progression outcomes relative to the ten subject areas presented: the interquartile range of the distribution is the fifth largest among the ten subjects shown, at 11.9 percentage points.

Figure 9f: Sector distribution of progression outcomes for full-time postgraduate taught masters' (qualifiers in 2017-18 to 2020-21)



Source: OfS published sector distribution of student outcome and experience measures data dashboard, published in July 2023.

- Figure 9f shows the distribution of progression outcomes for full-time postgraduate taught masters' students across the selected subject areas calculated for each provider across the sector.
- The computing subject has the third highest median indicator value relative to the other subject areas, at 91.2 per cent.
- Health and social care has the highest median indicator value at 93.6 per cent, followed by allied health at 92.5 per cent.
- The computing subject area has a similar range of progression outcomes relative to the ten subject areas presented: the interquartile range of the distribution is the fourth largest among the ten subjects shown, at 9.8 percentage points.

Student experience indicators vary across providers, with lower levels of agreement at many providers relative to other subject areas

Student experience measures use responses from undergraduate students to the National Student Survey (NSS), which reports on the views of students on different aspects of their higher education experience. The measures shown here report the level of agreement to the range of statements that comprised an area or scale of the 2022 and earlier NSS questionnaires, as indicated among final year undergraduates.

Respondents used a Likert scale to indicate their level of agreement to the statements and comprised of: Definitely agree | Mostly agree | Neither agree nor disagree | Mostly disagree | Definitely disagree | Not applicable

The student experience data presented here shows that median indicator values for computing courses were among the lowest in terms of student experiences for full-time undergraduate students, relative to other subject areas.

Computing has a wide distribution across providers relative to the other subject areas presented for each student experience measure, and in some cases, the widest distribution.

The teaching on my course

The 'teaching on my course' question scale covered four questions:

- Staff are good at explaining things
- Staff have made the subject interesting
- The course is intellectually stimulating
- My course has challenged me to achieve my best work

¹⁷ The student experience measures reported here are aggregated over four years, covering students surveyed in the calendar years 2019 to 2022 inclusive. Following consultation during 2022, the OfS published the 2023 NSS results on 10 August. Initial analysis in support of the consultation sought to understand the level of confidence we can have in the theme measures for the purpose of the 2023 publication, but further analysis will be undertaken ahead of the 2024 NSS publication to establish the longer term approach to these themes. As a result, the student experience measures presented here do not include the 2023 NSS results. For further information, see 'Publication of theme measures for the 2023 National Student Survey' at www.officeforstudents.org.uk/publications/consultation-on-the-approach-to-publication-of-the-nss-analysis-of-responses-and-decisions/.

Figure 10a: Sector distribution of 'teaching on my course' indicators for full-time undergraduates (surveyed in the calendar years 2019 to 2022 inclusive)



Source: OfS published sector distribution of student outcome and experience measures data dashboard, published in July 2023.

- Figure 10a shows the distribution of 'teaching on my course' indicators for fulltime undergraduate students across the selected subject areas calculated for each provider across the sector.
- Computing has the lowest median indicator values relative to the other subject areas presented, at 76.0 per cent.
- Computing has a wide distribution of 'teaching on my course' indicators relative to the other subject areas presented: the interquartile range of the distribution is the third largest of the ten subjects shown, at 7.3 percentage points.

Assessment and feedback

The 'assessment and feedback' question scale covered four questions:

- The criteria used in marking have been clear in advance
- Marking and assessment has been fair
- Feedback on my work has been timely
- I have received helpful comments on my work

Figure 10b: Sector distribution of assessment and feedback indicators for full-time undergraduates (surveyed in the calendar years 2019 to 2022 inclusive)



Source: OfS published sector distribution of student outcome and experience measures data dashboard, published in July 2023.

- Figure 10b shows the distribution of assessment and feedback indicators for fulltime undergraduate students across the selected subject areas calculated for each provider across the sector.
- Computing has the second lowest median indicator values relative to the other subject areas presented, at 65.9 per cent.
- Engineering has the lowest median indicator value, at 64.1 per cent; sociology, social policy and anthropology has the third lowest median indicator value, at 69.9 per cent.
- Computing has a wide distribution of assessment and feedback indicators relative to the other subject areas presented: the interquartile range of the distribution is the fourth largest among the ten subjects shown, at 11.5 percentage points.

Academic support

The 'academic support' question scale covered three questions:

- I have been able to contact staff when I needed to
- I have received sufficient advice and guidance in relation to my course
- Good advice was available when I needed to make study choices on my course

Figure 10c: Sector distribution of academic support indicators for full-time undergraduates (surveyed in the calendar years 2019 to 2022 inclusive)



Source: OfS published sector distribution of student outcome and experience measures data dashboard, published in July 2023.

- Figure 10c shows the distribution of academic support indicators for full-time undergraduate students across the selected subject areas calculated for each provider across the sector.
- Computing has the second lowest median indicator values relative to the other subject areas presented, at 73.9 per cent.
- Sociology, social policy and anthropology has the lowest median indicator value, at 73.3 per cent.
- Computing has a similar range of academic support indicators relative to the other subject areas presented: the interquartile range of the distribution is the fourth smallest among the ten subjects shown, at 6.8 percentage points.

Learning resources

The 'learning resources' question scale covered three questions:

- The IT resources and facilities provided have supported my learning well
- The library resources (e.g. books, online services and learning spaces) have supported my learning well
- I have been able to access course-specific resources (e.g. equipment, facilities, software, collections) when I needed to

Figure 10d: Sector distribution of learning resources indicators for full-time undergraduates (surveyed in the calendar years 2019 to 2022 inclusive)



Source: OfS published sector distribution of student outcome and experience measures data dashboard, published in July 2023.

- Figure 10d shows the distribution of learning resources indicators for full-time undergraduate students across the selected subject areas calculated for each provider across the sector.
- Computing has the third lowest median indicator values relative to the other subject areas presented, at 78.9 per cent.
- Performing arts has the lowest median indicator value, at 77.9 per cent, followed by creative arts and design at 78.7 per cent.
- Computing has a similar range of learning resources indicators relative to the other subject areas presented: the interquartile range of the distribution is the fourth smallest among the ten subjects shown, at 5.4 percentage points.

Student voice

The 'student voice' question scale covered three questions:¹⁸

- I have had the right opportunities to provide feedback on my course
- Staff value students' views and opinions about the course
- It is clear how students' feedback on the course has been acted on

Figure 10e: Sector distribution of student voice indicators for full-time undergraduates (surveyed in the calendar years 2019 to 2022 inclusive)



Source: OfS published sector distribution of student outcome and experience measures data dashboard, published in July 2023.

- Figure 10e shows the distribution of student voice indicators for full-time undergraduate students across the selected subject areas calculated for each provider across the sector.
- Computing has the second lowest median indicator values relative to the other subject areas presented, at 67.8 per cent.
- Sociology, social policy and anthropology has the lowest median indicator value, at 66.9 per cent.
- Computing has a similar range of student voice indicators relative to the other subject areas presented: the interquartile range of the distribution is the fourth largest among the ten subjects shown, at 10.5 percentage points.

Staff numbers



About this data

In this section, we consider data on academic staff within the computing subject area, and how staff numbers differ compared with other subjects.

Here, subjects are defined by cost centre, which is a proxy for academic departments.¹⁹ This is different to the definition of 'subject' used previously in this report. Due to the large number of cost centres, we have grouped cost centres into 'cost centre groupings' for figures in this section.²⁰

The cost centre grouping engineering and technology is made up of seven cost centres which cover both engineering and computing subjects. In the visualisations below, we have focused on the information technology, systems sciences and computer software engineering cost centre,²¹ which, for brevity, is referred to as the 'computing' cost centre in this section. In the figures below, the computing cost centre is presented independently of its component cost centre group.²²

Data on staff in higher education is collected by Jisc in its role as the designated data body (DDB). The information presented is for a subset of OfS-registered providers. It does not cover all providers currently registered with the OfS because not all providers are currently required to submit staff data to Jisc. Notably, staff data is not available for further education colleges.

¹⁹ Cost centres continue to be used, and have historically been used, in statutory data returns relating to staff and financial data. Providers are asked to allocate staff to cost centres on the basis of the source of funding for an individual's employment contract as opposed to the actual activity undertaken by that individual. See www.hesa.ac.uk/support/documentation/cost-centres.

²⁰ Cost centres have been grouped to align with the groupings shown at www.hesa.ac.uk/support/ documentation/cost-centres/2012-13-onwards.

²¹We have used this cost centre because our analysis shows that the majority of staff within the computing discipline are associated with this cost centre.

²² There are approximately 50,000 full-time equivalent (FTE) staff within the computing cost centre. When excluding these computing staff FTE from the engineering and technology cost centre group, there are approximately 90,000 staff FTE remaining in the cost centre group.

Student-to-staff ratios for computing vary, and the median ratio is among the highest across subjects

Figures 11a and 11b show student-to-staff ratios. A lower student-to-staff ratio means that there are more staff per student. These are based on student and staff numbers calculated in terms of full-time equivalence (FTE).²³



Figure 11a: Student-to-staff ratios of cost centre groups for academic year 2021-22

Source: OfS analysis of HESA Staff and Student records.

- Figure 11a shows the distributions of provider student-to-staff ratios for different cost centre groups in the academic year 2021-22.
- Student-to-staff ratios for the computing cost centre show the second highest number of students per member of staff of any cost centre group, with a median student-to-staff ratio of 18.8 (i.e. 18.8 student FTEs per staff member FTE).

²³ The Higher Education Strategic Planners Association (HESPA) recently consulted on its approach to calculating student staff ratios and concluded that its methodology should not change from the approach previously adopted by HESA. The approach to the analysis in this report is consistent with the HESA/ HESPA methodology. Staff are counted only when they are classified as being on an academic 'teaching only' or 'teaching and research' contract. The methodology is described in full at www.hesa.ac.uk/support/ definitions/technical. Our application of this methodology is limited to providers that submitted the DDB's Student record and does not include providers that have submitted the DDB's Student Alternative record. In addition, it is further limited to OfS-registered providers.

Figure 11b: Student-to-staff ratios for the computing cost centre by academic year



Source: OfS analysis of HESA Staff and Student records.

- Figure 11b shows the distribution of provider student-to-staff ratios for the computing cost centre from academic years 2019-20 to 2021-22.
- The interquartile range of the distributions of student-to-staff ratios have widened year on year from 2019-20 to 2021-22.
- Median values over the three academic years are around 18 (i.e.18 student FTEs per staff member FTE).



Figure 11c: Student and staff numbers (FTE) for the computing cost centre by academic year

Source: OfS analysis of HESA Staff and Student records.

- Figure 11c shows the actual number of students and staff, in terms of FTE, for the computing cost centre from academic years 2019-20 to 2021-22.
- It shows growth in the number of students (as discussed earlier in this report).
- When taken together with the student-to-staff ratios shown in Figure 11b, we can understand that, in aggregate, the more modest growth in staff numbers shown here appears sufficient to maintain broadly similar student-to-staff ratios across this period. However, the year-on-year increasing widths of the box and whisker plots in Figure 11b demonstrate that student-to-staff ratios are showing increasing variation across providers.

Staff employment characteristics and qualifications for computing are broadly similar to other classroom-based subjects

Figures 12a to 12c show staff numbers by employment characteristics and qualifications, in terms of full-person equivalence (FPE).²⁴



Figure 12a: Staff numbers by terms of employment across all subject areas for academic year 2021-22

Source: OfS analysis of HESA Staff record.

²⁴ Only staff with an academic contract are included in the analysis. The non-atypical staff population aligns with the 'HESA staff contract population'. This is different to the 'HESA staff contract session population' used to calculate student-to-staff ratios. Unlike the 'student-to-staff ratios, all OfS-registered providers that submit data to the DDB are included. The atypical staff population, included in Figure 12a only, aligns with the 'HESA staff atypical population'.

- Figure 12a shows the total number of staff in academic year 2021-22 in terms of employment and cost centre group. The terms of employment distinguish between staff on open-ended or permanent contracts, staff on fixed-term contracts, and staff on atypical contracts.²⁵ Staff on zero hours contracts are included in each of these categorisations.²⁶
- The proportion of permanent contracts for staff employed within the computing cost centre is the third lowest of all cost centre groups, at 52 per cent of approximately 9,000. The average across all cost centre groupings is 55 per cent permanent staff.
- The proportion of fixed term contracts for staff employed within the computing cost centre is 26 per cent, which is consistent with the average across all cost centre groupings at 25 per cent.
- In addition, the proportion of atypical contracts within the computing cost centre is 21 per cent, which is broadly consistent with the average across all cost centre groupings at 20 per cent. There is little variation in the proportion of atypical contracts across cost centre groups. While not disaggregated in Figure 12a, the proportions of staff on zero hours contracts are also generally consistent across cost centre groups.

²⁵ Staff on atypical contracts are those whose working arrangements are not permanent, involve complex employment relationships and/or involve work away from the supervision of the normal work provider. Atypical contracts meet one or more of the following conditions: are for less than four consecutive weeks, are for one-off/short-term tasks, involve work away from the supervision of the normal work provider, or involve a high degree of flexibility often in a contract to work as and when required (for example, student demonstrators). This definition is sourced from: www.hesa.ac.uk/support/definitions/staff.

²⁶ The information available across all academic staff across all cost centre groups show that 8 per cent of staff are on a zero hours contract with 79 per cent of those staff categorised as atypical. Comparatively, as a proportion of all staff on permanent contracts, 1.3 per cent are on a zero hours contract; for staff on fixed-term contracts, 3.3 per cent are on a zero hours contracts, 29.1 per cent are on a zero hours contract.

Figure 12b: Staff numbers by academic employment function across cost centre for academic year 2021-22



Subject area (cost centre grouping)

Source: OfS analysis of HESA Staff record.

- Figure 12b shows the total number of staff in academic year 2021-22 by primary • academic employment function and cost centre group.
- For computing, the majority of staff either have 'teaching only' or 'teaching and • research' contracts, covering 81 per cent of staff.
- The proportions by primary academic employment function for the computing cost ٠ centre are broadly in line with other classroom-based cost centre groups.

Figure 12c: Staff numbers by teaching qualification held across cost centre groups for academic year 2021-22²⁷



Source: OfS analysis of HESA Staff record.

- Figure 12c shows the total number of staff in academic year 2021-22 and whether staff hold a teaching qualification by cost centre group.²⁸
- The proportion of staff with a teaching qualification in the computing cost centre is 57 per cent, which is similar to the average of other cost centre groups (58 per cent).
- Generally other cost centre groups have less than 60 per cent of staff with a teaching qualification.

²⁷ This figure is restricted to staff whose primary academic employment function is 'teaching only' or 'teaching and research'.

²⁸ This figure is restricted to staff whose primary academic employment function is 'teaching only' or 'teaching and research'. A member of staff holding a teaching qualification includes higher education teaching qualification, another relevant teaching qualification, or where staff have been recognised in other ways for their teaching expertise.



Figure 12d: Staff numbers for the computing cost centre by highest qualification held and teaching qualification status for academic year 2021-22

Source: OfS analysis of HESA Staff record.

- Figure 12d shows the number of staff for the computing cost centre by whether staff hold a teaching qualification and their highest qualification. It covers staff for the academic year 2021-22.²⁹
- For the computing cost centre, the majority of academic staff hold a doctorate or first degree, totalling 75 per cent of all staff. Approximately 63 per cent of staff with these qualifications hold a teaching qualification.
- 57 per cent of all staff within the computing cost centre hold a teaching qualification.

²⁹ This figure is restricted to staff whose primary academic employment function is 'teaching only' or 'teaching and research'.

Annex A: Student outcome and experience measures

The tables in this annex contain descriptive statistics for the figures presented in the 'student outcomes and experience measures' section of this report. The tables include the lower quartile, median, the upper quartile and interquartile range, which are all calculated after weighting the indicator values by the count of student numbers associated with each provider's indicator value. The data is sourced from the published sector distribution of student outcomes and experience measures dashboard.³⁰

Student outcome measures

Table 1a: Weighted median table for sector distribution of continuation outcomes for full-time undergraduates (entrants in 2017-18 to 2020-21)

Measure, mode and level of study	Subject	Weighted Iower quartile	Weighted median	Weighted upper quartile	Weighted interquartile range
Continuation	Computing	83.8%	86.9%	91.6%	7.8pp
Full-time	Allied health	88.4%	91.4%	93.9%	5.5pp
undergraduates	Business and management	81.2%	87.6%	92.6%	11.4pp
	Creative arts and design	89.0%	90.7%	92.3%	3.3рр
	Education and teaching	88.4%	91.9%	93.5%	5.1pp
	Engineering	89.1%	93.2%	95.5%	6.4pp
	Health and social care	78.2%	84.5%	89.7%	11.5pp
	Performing arts	85.5%	90.1%	93.2%	7.7pp
	Sociology, social policy and anthropology	85.6%	90.5%	93.6%	8.0pp
	Sport and exercise sciences	82.2%	86.6%	89.4%	7.2рр

³⁰ The approach to presenting the data aligns with the dashboard as published in July 2023. See www. officeforstudents.org.uk/data-and-analysis/sector-distribution-of-student-outcomes-and-experience-measures-data-dashboard/. Information about the subjects studied is based on level 2 of the Common Aggregation Hierarchy (CAH2). See www.hesa.ac.uk/support/documentation/hecos/cah.

Table 1b: Weighted median table for sector distribution of continuation outcomes for full-time postgraduate taught masters' students (entrants in 2017-18 to 2020-21)

Measure, mode and level of study	Subject	Weighted Iower quartile	Weighted median	Weighted upper quartile	Weighted interquartile range
Continuation	Computing	91.5%	93.4%	95.9%	4.4pp
 Full-time	Allied health	91.6%	94.7%	96.4%	4.8pp
postgraduate taught	Business and management	91.9%	96.5%	98.3%	6.4pp
masters'	Creative arts and design	91.0%	95.4%	97.0%	6.0pp
	Education and teaching	93.1%	97.1%	98.2%	5.1pp
	Engineering	94.0%	95.9%	98.1%	4.1pp
	Health and social care	88.3%	91.6%	94.6%	6.3рр
	Performing arts	92.7%	95.8%	97.4%	4.7pp
	Sociology, social policy and anthropology	93.6%	97.0%	98.0%	4.4pp
	Sport and exercise sciences	88.5%	91.3%	94.8%	6.3pp

Table 1c: Weighted median and quartile distribution table for sector distribution of completion outcomes for full-time undergraduates (entrants in 2014-15 to 2017-18)

Measure, mode and level of study	Subject	Weighted Iower quartile	Weighted median	Weighted upper quartile	Weighted interquartile range
Completion	Computing	76.9%	80.8%	86.1%	9.2pp
Full-time	Allied health	86.5%	91.0%	93.9%	7.4pp
undergraduates	Business and management	79.7%	87.1%	91.5%	11.8pp
	Creative arts and design	86.6%	89.8%	90.5%	3.9pp
	Education and teaching	88.1%	90.5%	92.7%	4.6pp
	Engineering	83.5%	88.6%	94.5%	11.0pp
	Health and social care	77.7%	85.7%	88.9%	11.2pp
	Performing arts	82.8%	88.3%	92.4%	9.6pp
	Sociology, social policy and anthropology	80.5%	87.3%	91.4%	10.9pp
	Sport and exercise sciences	75.3%	81.0%	85.6%	10.3pp

Table 1d: Weighted median and quartile distribution table for sector distribution of completion outcomes for full-time postgraduate taught masters' (entrants in 2014-15 to 2017-18)

Measure, mode and level of study	Subject	Weighted Iower quartile	Weighted median	Weighted upper quartile	Weighted interquartile range
Completion	Computing	90.7%	94.4%	95.7%	5.0pp
Full-time	Allied health	91.9%	94.8%	97.5%	5.6pp
postgraduate taught masters'	Business and management	95.2%	97.8%	98.8%	3.6рр
	Creative arts and design	95.9%	96.5%	97.3%	1.4pp
	Education and teaching	94.9%	96.0%	97.7%	2.8pp
	Engineering	95.2%	96.9%	97.6%	2.4pp
	Health and social care	89.0%	93.2%	94.9%	5.9pp
	Performing arts	94.8%	96.2%	98.2%	3.4pp
	Sociology, social policy and anthropology	93.8%	96.2%	97.2%	3.4pp
	Sport and exercise sciences	87.9%	92.7%	96.8%	8.9pp

Table 1e: Weighted median and quartile distribution table for sector distribution of progression outcomes for full-time undergraduates (qualifiers in 2017-18 to 2020-21)

Measure, mode and level of study	Subject	Weighted Iower quartile	Weighted median	Weighted upper quartile	Weighted interquartile range
Progression	Computing	72.1%	78.0%	84.0%	11.9pp
 Full-time	Allied health	78.2%	85.9%	90.4%	12.2pp
undergraduates	Business and management	57.1%	64.7%	73.7%	16.6pp
	Creative arts and design	63.1%	66.2%	69.0%	5.9pp
	Education and teaching	67.3%	72.0%	75.1%	7.8pp
	Engineering	74.8%	81.3%	87.3%	12.5pp
	Health and social care	61.0%	64.6%	73.9%	12.9pp
	Performing arts	60.8%	65.1%	72.0%	11.2pp
	Sociology, social policy and anthropology	54.9%	57.7%	64.8%	9.9pp
	Sport and exercise sciences	65.2%	68.8%	72.4%	7.2рр

Table 1f: Weighted median and quartile distribution table for sector distribution of progression outcomes for full-time postgraduate taught masters' (qualifiers in 2017-18 to 2020-21)

Measure, mode and level of study	Subject	Weighted lower quartile	Weighted median	Weighted upper quartile	Weighted interquartile range
Progression	Computing	85.0%	91.2%	94.8%	9.8pp
Full-time	Allied health	86.2%	92.5%	95.5%	9.3pp
postgraduate taught masters'	Business and management	70.6%	78.0%	89.1%	18.5pp
	Creative arts and design	75.1%	81.3%	83.1%	8.0pp
	Education and teaching	76.7%	82.3%	83.5%	6.8pp
	Engineering	81.8%	86.7%	88.9%	7.1pp
	Health and social care	90.4%	93.6%	96.1%	5.7pp
	Performing arts	77.1%	83.8%	89.3%	12.2pp
	Sociology, social policy and anthropology	72.1%	78.4%	86.2%	14.1pp
	Sport and exercise sciences	79.2%	85.2%	87.4%	8.2pp

Student experience measures

Table 2a: Weighted median and quartile distribution table for sector distribution of student experience measure: teaching on my course outcomes for full-time undergraduates (surveyed in the calendar years 2019 to 2022 inclusive)

Measure, mode and level of study	Subject	Weighted lower quartile	Weighted median	Weighted upper quartile	Weighted interquartile range
Student	Computing	72.9%	76.0%	80.2%	7.3рр
experience:	Allied health	82.1%	84.4%	87.3%	5.2pp
course	Business and management	75.7%	78.2%	82.3%	6.6рр
Full-time undergraduates	Creative arts and design	77.5%	79.8%	82.6%	5.1pp
	Education and teaching	80.8%	83.5%	87.2%	6.4рр
	Engineering	75.5%	79.7%	83.6%	8.1pp
	Health and social care	80.3%	83.0%	85.8%	5.5pp
	Performing arts	78.9%	83.4%	86.9%	8.0pp
	Sociology, social policy and anthropology	79.3%	81.3%	83.9%	4.6pp
	Sport and exercise sciences	82.7%	84.2%	86.7%	4.0pp

Table 2b: Weighted median and quartile distribution table for sector distribution of student experience measure: assessment and feedback outcomes for full-time undergraduates (surveyed in the calendar years 2019 to 2022 inclusive)

Measure, mode and level of study	Subject	Weighted Iower quartile	Weighted median	Weighted upper quartile	Weighted interquartile range
Student	Computing	60.1%	65.9%	71.6%	11.5pp
experience:	Allied health	66.9%	70.4%	74.5%	7.6pp
and feedback	Business and management	66.2%	71.5%	74.3%	8.1pp
Full-time undergraduates	Creative arts and design	73.0%	75.0%	77.4%	4.4pp
	Education and teaching	73.5%	76.5%	80.3%	6.8pp
	Engineering	61.1%	64.1%	66.9%	5.8pp
	Health and social care	72.0%	76.4%	79.2%	7.2рр
	Performing arts	68.3%	71.8%	76.9%	8.6pp
	Sociology, social policy and anthropology	64.9%	69.9%	73.1%	8.2pp
	Sport and exercise sciences	71.4%	76.2%	79.9%	8.5pp

Table 2c: Weighted median and quartile distribution table for sector distribution of student experience measure: academic support outcomes for full-time undergraduates (surveyed in the calendar years 2019 to 2022 inclusive)

Measure, mode and level of study	Subject	Weighted Iower quartile	Weighted median	Weighted upper quartile	Weighted interquartile range
Student	Computing	70.5%	73.9%	77.3%	6.8pp
experience:	Allied health	72.4%	77.1%	80.7%	8.3pp
support	Business and management	74.1%	77.4%	80.3%	6.2pp
Full-time undergraduates	Creative arts and design	75.1%	77.8%	79.7%	4.6pp
	Education and teaching	76.4%	81.1%	83.7%	7.3pp
	Engineering	73.0%	76.6%	78.5%	5.5pp
	Health and social care	71.3%	75.8%	79.9%	8.6pp
	Performing arts	76.0%	80.5%	82.9%	6.9pp
	Sociology, social policy and anthropology	69.1%	73.3%	76.3%	7.2pp
	Sport and exercise sciences	79.4%	81.9%	84.7%	5.3pp

Table 2d: Weighted median and quartile distribution table for sector distribution of student experience measure: learning resources outcomes for full-time undergraduates (surveyed in the calendar years 2019 to 2022 inclusive)

Measure, mode and level of study	Subject	Weighted Iower quartile	Weighted median	Weighted upper quartile	Weighted interquartile range
Student	Computing	76.6%	78.9%	82.0%	5.4pp
learning	Allied health	78.9%	82.8%	85.7%	6.8pp
resources	Business and management	81.1%	83.5%	85.7%	4.6pp
Full-time undergraduates	Creative arts and design	74.2%	78.7%	81.2%	7.0рр
	Education and teaching	80.6%	83.5%	85.6%	5.0pp
	Engineering	81.0%	83.4%	86.4%	5.4pp
	Health and social care	76.7%	80.9%	83.6%	6.9pp
	Performing arts	71.7%	77.9%	82.0%	10.3pp
	Sociology, social policy and anthropology	76.9%	79.2%	82.9%	6.0pp
	Sport and exercise sciences	82.3%	83.8%	86.3%	4.0pp

Table 2e: Weighted median and quartile distribution table for sector distribution of student experience measure: student voice outcomes for full-time undergraduates (surveyed in the calendar years 2019 to 2022 inclusive)

Measure, mode and level of study	Subject	Weighted Iower quartile	Weighted median	Weighted upper quartile	Weighted interquartile range
Student	Computing	62.8%	67.8%	73.3%	10.5pp
experience:	Allied health	70.5%	74.2%	77.7%	7.2рр
Full-time	Business and management	68.6%	72.0%	76.8%	8.2pp
undergraduates	Creative arts and design	67.8%	71.7%	74.3%	6.5рр
	Education and teaching	72.6%	75.9%	79.1%	6.5рр
	Engineering	66.5%	70.2%	73.7%	7.2pp
	Health and social care	69.7%	73.2%	77.8%	8.1pp
	Performing arts	64.1%	68.9%	74.6%	10.5pp
	Sociology, social policy and anthropology	64.2%	66.9%	70.1%	5.9pp
	Sport and exercise sciences	73.5%	76.4%	81.3%	7.8рр



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