



Regional Pathfinders Data and Analysis Summary Report



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Regional Pathfinders – Data and Analysis Summary Report

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| Issue Date: | 19 December 2022 |
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| Summary: | This report summarises the findings of the Regional Tertiary Provision Pathfinders Data and Analysis workstream. |
| FAO: | Principals and Chairs of Scotland’s colleges and universities, Scottish Government, students, parents, guardians and the general public. |
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Introduction

Background and approach

1. SFC's Review of Coherent Provision set out a vision for a more responsive and coherent education and skills system that drives economic and social renewal. Throughout the process of developing this Review, stakeholders were clear that strategic planning for provision should primarily consider the need for planning at an institutional and regional level, with institutions collaborating and engaging with employers and other partners. The Regional Tertiary Provision Pathfinders aim to kick-start this work.
2. The Pathfinders explore what further needs to be done in very practical ways to make the education and skills system more responsive and integrated, and to support economic recovery and inclusive growth in each region.
3. The Pathfinder activity is organised in four phases:

Regional Priorities

4. This workstream aims to address local priorities, advancing collaborative approaches to local skills planning and strengthening existing partnerships. Regional partners will develop and deliver pilot projects focused on regional skills priorities.

Data and Analysis

5. This workstream aims to develop and interrogate the evidence-base underpinning the Regional Pathfinders. In particular it presents specific data and analysis about the type and nature of tertiary education and skills provision available in both regions, current and forecasted skills and employment demand, and a presentation of the established pathways into and through education in the Pathfinder regions.

Process Analysis: Provision and Curriculum Planning

6. This workstream consists of an exploration of provision planning and curriculum design across partner institutions, how evidence is put to use in this process, and how SFC and other stakeholders can enhance and support.

Reflections and Recommendations

7. This workstream will inform and shape the learning from the Pathfinders projects, through engagement with Pathfinder institutions, wider partners, and experts as part of the National Advisory Board. This will shape recommendations for system change and guide SFC's future approach.

Aim

8. The Regional Tertiary Provision Pathfinders explore what further needs to be done to make the education and skills system responsive, integrated, and supportive of economic recovery and inclusive growth in two regions: the North-East and the South of Scotland.

Data and analysis

9. This report summarises the findings of the Pathfinders *Data and Analysis* workstream. This area is divided into three distinct areas, addressing the following questions:
 - What does **demand** look like in the two Pathfinder regions? This uses published data, existing literature and partner insights to report on current and forecasted skills and employer demand in the Pathfinder regions.
 - What does education and skills **provision** look like in the two Pathfinder regions, and how has this **changed over time**? This provides a snapshot of college, university and work-based learning opportunities and how these have changed in the last decade, and an exploration of how course content and curriculum has adapted in response to skills needs.
 - What are the **pathways** into and through education and training in the regions? This presents entry, exit and transition points for learners in the regions, providing insight into opportunities and uptake in the regions.
10. The responses to each of these questions represent a stand-alone contribution to the evidence-base underpinning the Regional Pathfinder projects. **This summary report constitutes a presentation of the high-level findings only.** Further work with stakeholders to explore how this evidence is operationalised through curriculum and provision planning, and how this can be enhanced, is being undertaken as part of the other Pathfinders workstreams on *process analysis* and *reflections and recommendations*. Individual outputs dealing with each of the questions underpinning the data and analysis work will be published in due course.

The regions

11. The Regional Pathfinders project focuses on two distinct regions: the North-east and the South of Scotland. For the purposes of the project, the North-east is comprised of the City of Aberdeen and Aberdeenshire local authority areas, while the South of Scotland covers Dumfries and Galloway and Scottish Borders local authority areas.

North-east of Scotland

12. The North-east is home to two medium-sized universities located entirely within the

region: University of Aberdeen and Robert Gordon University. As of the 2020-21 academic year they are the eighth and 11th largest university in Scotland by number of enrolments, out of a total of 19 Higher Education Institutions (HEIs). Between them they enrolled just over 30,000¹ students and admitted around 5,800 entrants to First Degree undergraduate courses in 2020-21. Scotland's Rural College (SRUC) has a satellite campus located in Aberdeen with 370 higher education (HE) level enrolments and 295 further education (FE) level enrolments in 2020-21, almost all of these (84%) studying subjects related to agriculture, horticulture, and food.

13. Aside from SRUC's Aberdeen campus, college provision in the North-east is served entirely by North-east Scotland College (NESCol), with campuses spread around Aberdeen City and Aberdeenshire. NESCol is a large college with 16,065 students studying there in 2020-21, the fifth largest by headcount of the 27 colleges in Scotland.

South of Scotland

14. University provision in the South of Scotland is provided at satellite campuses of universities primarily located in the central belt. In 2020-21 University of Glasgow's Dumfries Campus enrolled 440 students, Heriot-Watt University's Galashiels Campus enrolled 670 students, and University of the West of Scotland's Dumfries Campus enrolled 375 students, making a total of 1,715 students studying at universities in the South of Scotland. For context, students at these campuses make up 1%, 6% and 2% of that institution's entire student population, respectively.
15. These satellite campuses tend to offer a more focused range of courses compared with the main campus offering. At University of Glasgow's Dumfries campus roughly three quarters of its students study education and teaching or geography, earth and environmental studies. Meanwhile, Heriot-Watt's Galashiels campus offers mainly courses in fashion and textiles, and University of the West of Scotland predominantly offers courses in nursing, health and social care. As with the North-east, SRUC serves both HE and FE-level provision (375 and 745 enrolments respectively) and does so through its Dumfries campus, mainly in subjects associated with agriculture, food, and veterinary sciences.
16. Aside from FE provision provided by SRUC in Dumfries, Dumfries and Galloway College and Borders College serve the South of Scotland. Dumfries and Galloway College is a smaller, rural college with 3,970 students studying there in 2020-21, making it the 14th largest college in Scotland by number of students (out of 26 colleges). Dumfries and Galloway College is located entirely within the South of Scotland region with a main campus in Dumfries and smaller campus in Stranraer in Galloway, where approximately

¹ All figures are rounded to the nearest 5, figures less than 5 are rounded to zero.

11% of the college's activity takes place (by FTE²s delivered). Meanwhile Borders College has a main campus in Galashiels with other campuses in Tweedbank, Hawick, and Newtown St Boswells within the Scottish Borders. The college also has a campus in Edinburgh, which is not included in the data presented here. The two colleges enrol a similar number of students by headcount: there were 3,395 students studying at Borders College in 2020-21 (students at the Edinburgh campus removed), compared to 3,970 at Dumfries & Galloway College.

Both regions

17. The Open University in Scotland (OUiS) serves the whole of Scotland, providing part-time distance learning courses at undergraduate and taught postgraduate level, with no entry requirements. In 2020-21 there were 2,095 enrolments at the OUiS from individuals domiciled in the North-east and 1,280 enrolled from individuals in the South of Scotland. Although the OUiS provides distance learning available to anyone located throughout Scotland the rest of the UK, the focus of the Pathfinders provision analysis is primarily on tertiary institutions with brick-and-mortar locations in these regions.
18. Universities across Scotland provide a range of upskilling and reskilling programmes, much of which is delivered online to learners across Scotland and beyond. With the particular regional focus of this work, upskilling and reskilling provision is not explored further in the report.
19. Outside of the college and university sectors, independent training providers and employers also provide learning and apprenticeship opportunities across the North-east and South of Scotland, across a range of disciplines and industries. Figures for modern and graduate apprenticeships are presented for each region in this report.

² Full-time equivalent (FTE) is one way of providing a snapshot of college provision. For more information on the credit-based system for colleges, see [College Statistics 2020-21 \(sfc.ac.uk\)](https://www.sfc.ac.uk/College-Statistics-2020-21). SFC defines 1 FTE at college as equivalent of roughly 40 hours of learning.

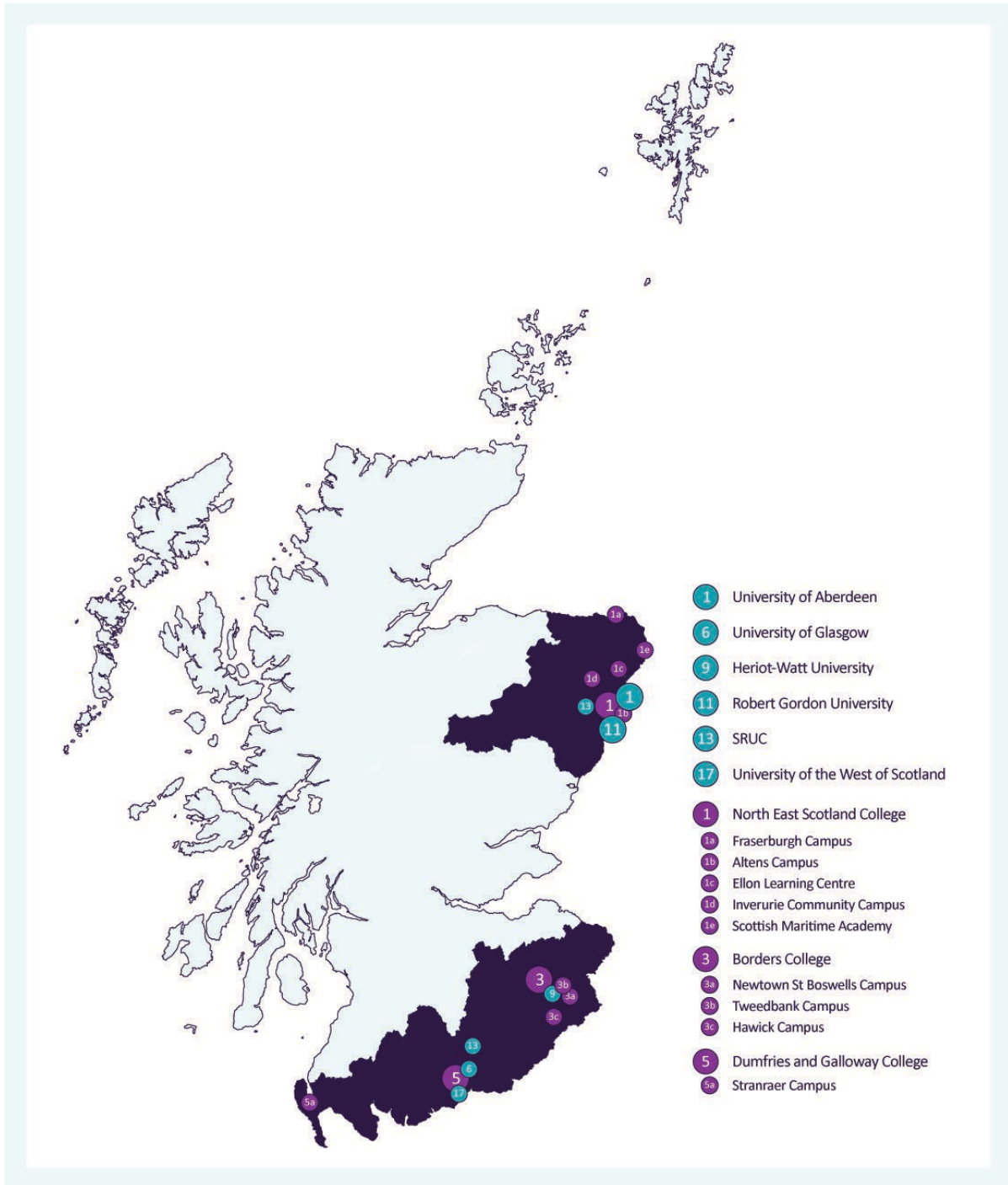


Fig 1: Map of institutions in the North-east and South of Scotland

Demand Analysis

20. This section summarises the headline findings from an analysis of current and future skills demand in each of the Pathfinder regional areas. This work was led by colleagues at Skills Development Scotland (SDS), building on their labour market insights to contribute to the evidence-base of the Pathfinders projects.
21. This section takes each region in turn, providing an overview of the employment trends in each region and the medium-to-long term forecast of job openings by industry, occupation, and qualification level.
22. These trends are explored in greater detail in an accompanying supplementary report which will be published in due course.

North-east region

Employment by industry

23. In 2022, **Human Health and Social Work** was the **largest employing industry** in the region (see Fig. 2), accounting for 42,600 people or 15.6% of the workforce. Professional, Scientific and Technical activities was the second largest with a total of 32,200 people or 11.8% of the workforce. These industries are forecast to remain the top employing in the Aberdeen City and Shire region in 2025 and 2032.
24. In Aberdeen City and Shire, Mining Support Service Activities was the **greatest specialism**, with the percentage of employment in this sector 5.7 times greater than the Scottish average in 2022. The second biggest specialism in the region was Extraction of Crude Petroleum (5.6 times more concentrated).
25. In the medium term (to 2025) the number of people in employment is expected to grow by 700 in the region. However, in the long-term **employment within the region is forecast to decrease**, with 5,800 fewer people in employment in 2032 compared with 2025, with differing trends across industries.
26. **Human Health and Social Work Activities is forecast to have the greatest employment growth** in the medium and long term. Professional, Scientific and Technical Activities, and Administrative and Support Services are also forecast to grow. **Mining and Quarrying is forecast to have the greatest employment contraction.**

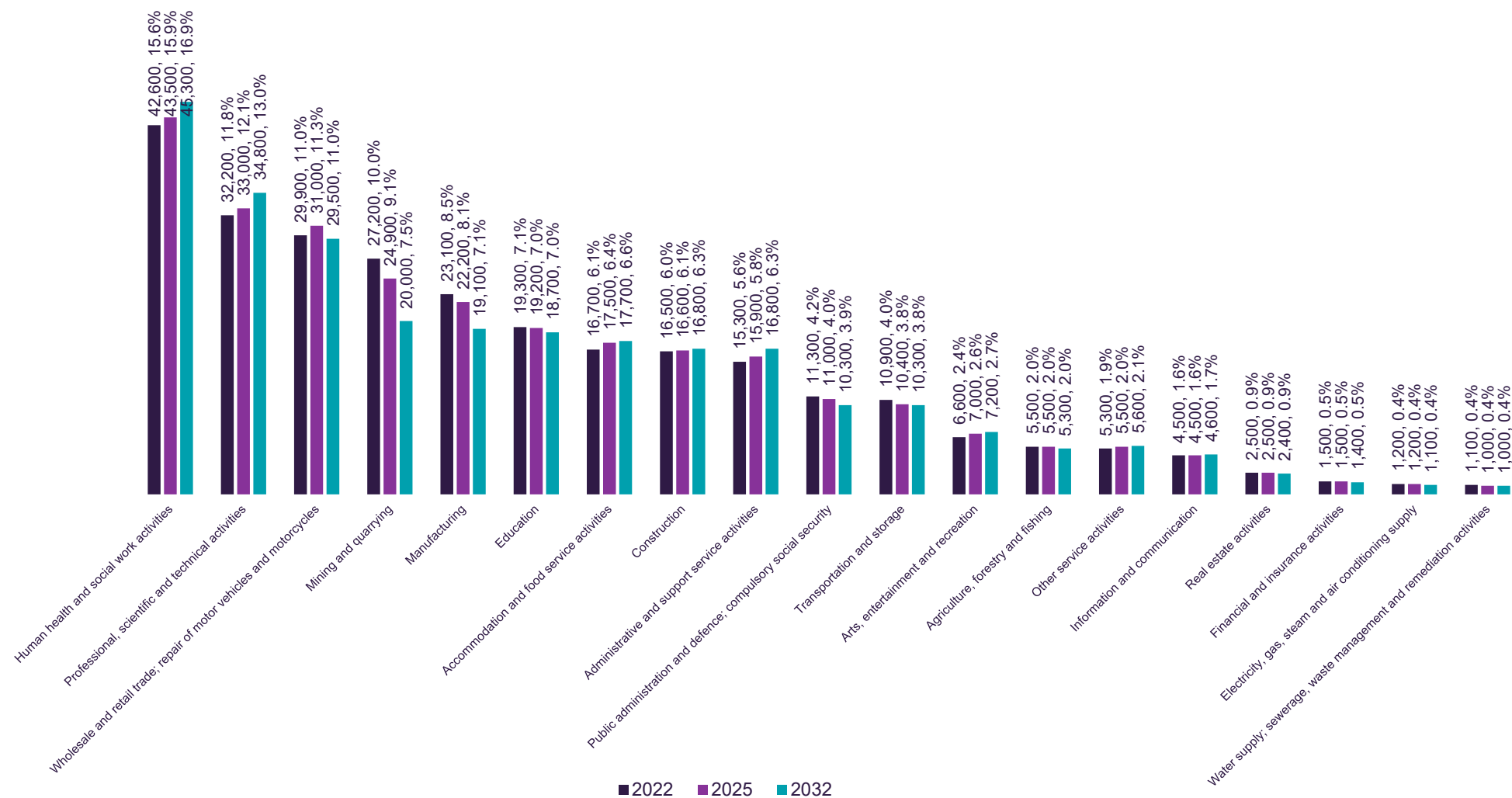


Figure 2: Employment by industry and share of total employment, 2022, 2025 and 2032, Aberdeen City and Shire

Employment by Occupation

27. In 2022, the largest occupations in the region were estimated to be **Science and Technology Professionals**, accounting for 26,100 people, or 9.5% of the workforce. **Clerical and Services Elementary Occupations** were the second largest, accounting for 25,200 people (9.2%), followed by Corporate Managers, and Business and Public Service Associate Professionals accounting for 23,000 people (8.4%) and 22,900 people (8.4%), respectively (see Figure 3).
28. In the medium and long term, the greatest growth is forecast to be in **Caring Personal Service Occupations, Corporate Managers, and Health Professionals**. Growth in these occupations is closely related to the growth forecast within the Health and Social Care sector.
29. **Skilled Metal and Electrical Trades** is likely to experience the greatest contraction over the medium and long-term.
30. There will also be changes in the types of roles workers undertake within industries, as new ways of working and technologies are introduced to the workplace. This supports growth in IT and technological-based roles across a broad range of sectors, from manufacturing to retail to professional services.
31. There will be an increased focus on developing, utilising, and rewarding ‘**meta-skills**’ such as complex problem solving, critical thinking, communication, creativity, and leadership within the workplace. Workers and employers will be required to embrace practices that support the use of these skills, with an increased focus on practices such as openness to new ideas, autonomous working, and continuous professional development.

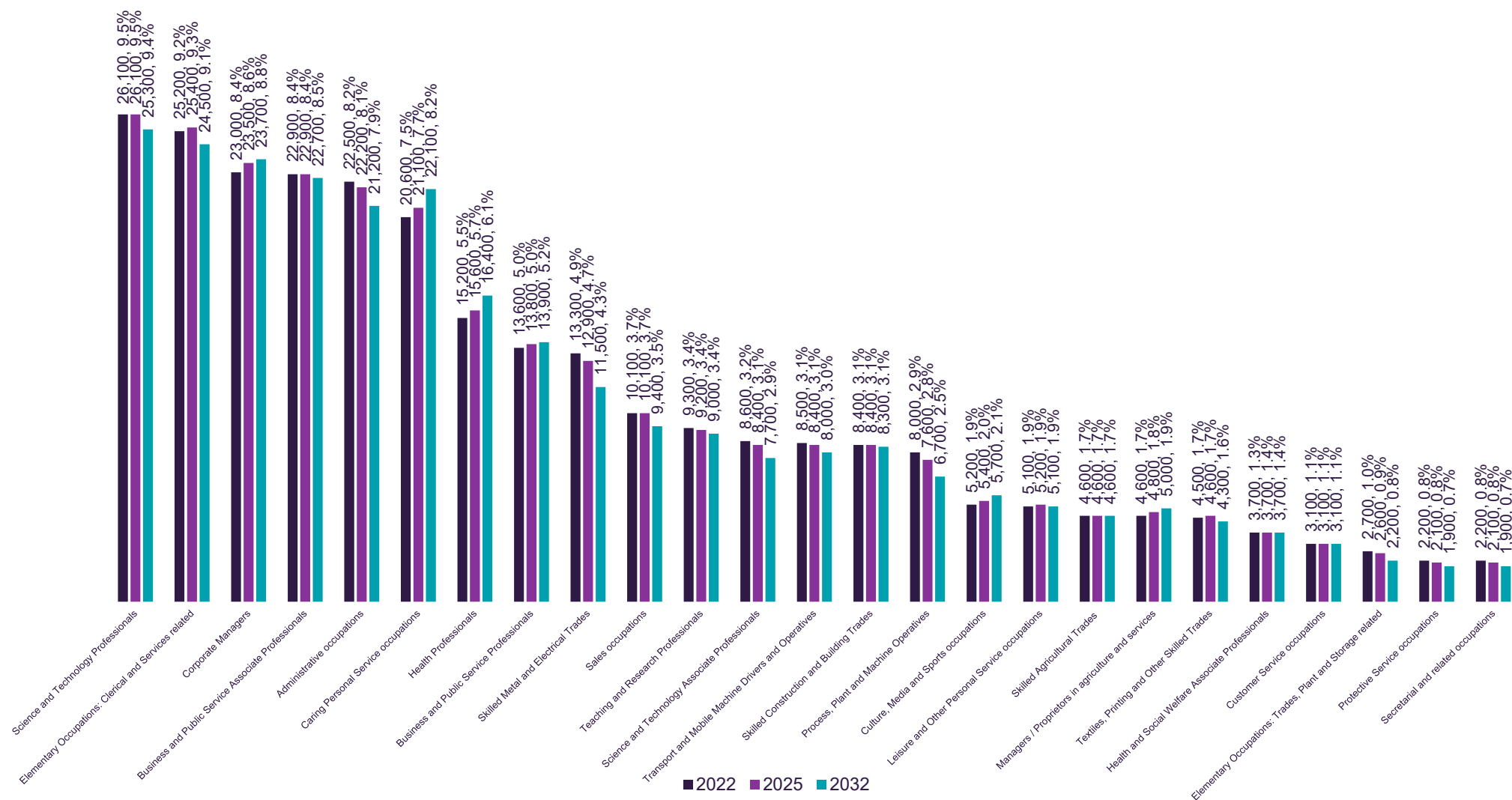


Figure 3: Employment by occupation and share of total employment, 2022, 2025 and 2032, Aberdeen City and Shire

Job openings

32. Job openings for expansion demand (new roles) and replacement demand (opportunities created by people leaving the labour market) are expected to be concentrated in a small number of industries, with four industries in Aberdeen City and Shire forecast to account for 16,900 (61.0%) of the requirement: Wholesale and Retail Trade / Repair of Motor Vehicles and Motorcycles (6,100); Human Health and Social Work Activities (4,200); Accommodation and Food Service Activities (3,500); and Administrative and Support Services (3,100). This mirrors the long-term trend (2025-2032), with these four industries forecast to account for 34,700 (59.5%) of future job openings.
33. By occupation in the medium term, the greatest number of people are forecast to be required in elementary occupations, science and technology professionals, and corporate managers. This forecast is mirrored in the longer term (2025-2032).
34. 49% of job openings in the medium term (2022-2025) are forecast to require qualification levels of SCQF 7-10 (equivalent to HNC to first degree) (see table 1). This is mirrored in the long term (2025-2032), with 48% of job openings forecast to require SCQF 7-10.

Table 1: Job openings by qualification level required in the medium term and long term

| | No quals | SCQF 1-4 | SCQF 5 | SCQF 6 | SCQF 7-10 | SCQF 11-12 |
|------------------|-----------|-----------|-------------|------------|-------------|------------|
| 2022-2025 | 7% (2000) | 3% (900) | 23% (6300) | 10% (2800) | 49% (13400) | 8% (2200) |
| 2025-2032 | 7% (4200) | 2% (1200) | 26% (15200) | 10% (5700) | 48% (28000) | 7% (4100) |

South of Scotland Region

Employment by industry

35. In 2022, **Human Health and Social Work** was the **largest employing industry in the region**. This industry accounted for 23,000 people or 21.3% of the workforce. Wholesale and retail trade; repair of motor vehicles and motorcycles, was the second largest with a total of 14,300 people or 13.3 per cent of the workforce. These industries are forecast to remain the top employing in the South of Scotland region in 2025 and 2032 (see Figure 4).
36. In the South of Scotland, **Manufacture of Wearing Apparel** was the **greatest specialism**, with the percentage of employment in this sector 9.8 times greater than the Scottish average in 2022. The second biggest specialism in the region was Crop and animal production (5.1 times more concentrated).
37. In the medium term (to 2025) the number of people in employment is expected to grow

by 1,900 in the region. However, in the long term, **employment within the region is forecast to decrease**, with 500 fewer people in employment in 2032 compared with 2025, with differing trends across industries.

38. **Wholesale and retail trade; repair of motor vehicles and motorcycles** is forecast to have the greatest employment growth in the medium term, with 600 more people expected to be working in the industry by 2025, followed by Accommodation and food services activities, and Human health and social work activities (with 500 and 400 more people, respectively). **Manufacturing is forecast to have the greatest employment contraction** with 400 fewer people in employment in 2025.
39. In the long term (2025 to 2032) **Human health and social work is forecast to have the greatest employment growth** with 800 more people working in the industry. The medium-term contraction in Manufacturing is forecast to continue into the long term.

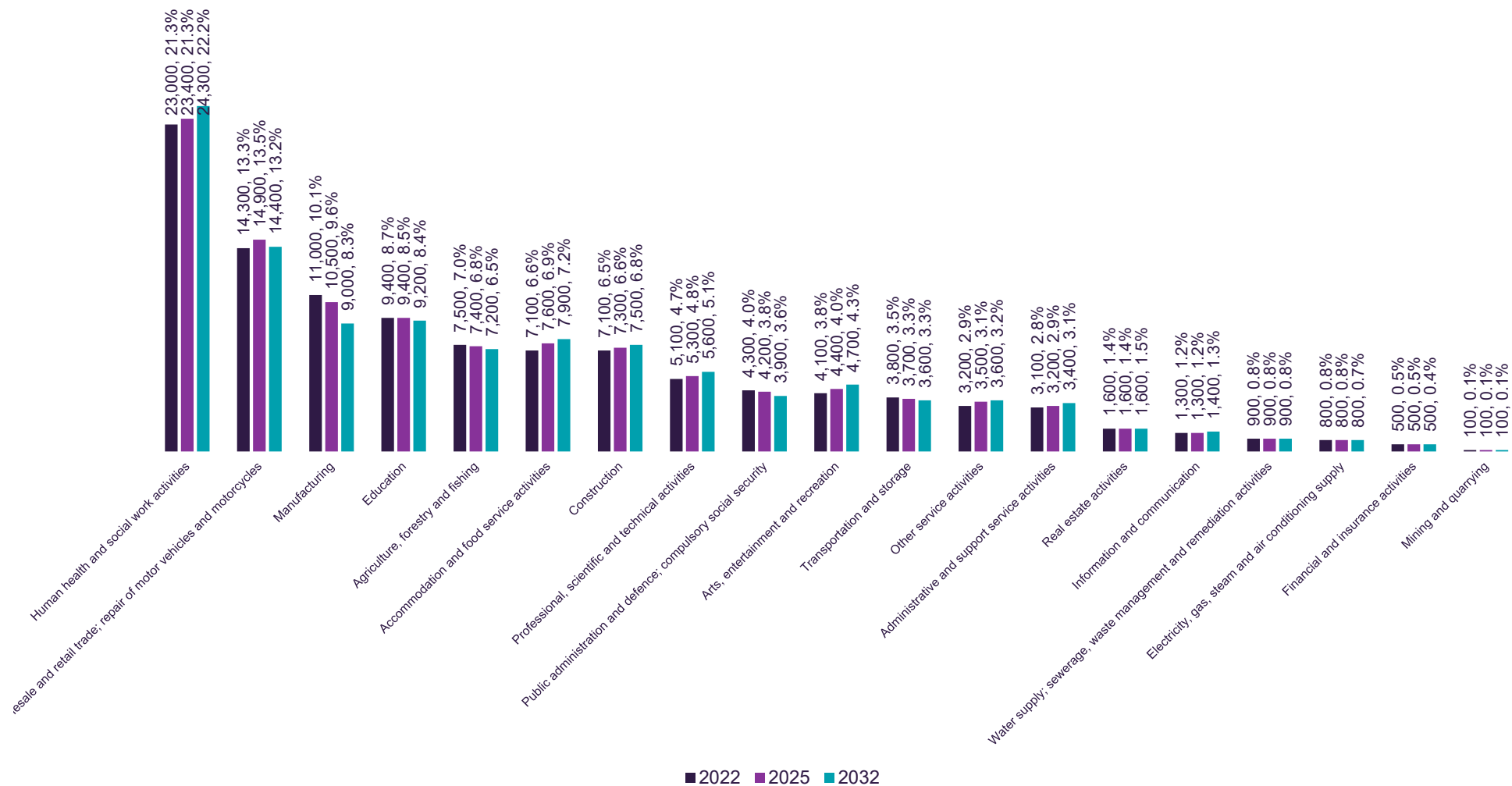


Figure 4: Employment by industry and share of total employment, 2022, 2025 and 2032, South of Scotland

Employment by occupation

40. In 2022, the largest occupations in the region were estimated to be **Elementary Occupations: Clerical and Services related**, accounting for 10,100 people, or 9.3% of the workforce. **Caring Personal Service Occupations** were the second largest, accounting for 10,000 people (9.3%), followed by **Sales Occupations**, and **Administrative Occupations** accounting for 9,200 people (8.5%) and 8,100 people (7.5%), respectively (see Figure 5).
41. In the medium and long term, the greatest growth is forecast to be in **Managers/ Proprietors in agriculture and services** and **Caring Personal Service Occupations**.
42. **Process Plant and Machine Operatives** and **Elementary Occupations: Trades, Plant and Storage related** are forecast to experience the greatest contraction over the mid-term, requiring 100 fewer people by 2025.
43. **Sales Occupations** and **Elementary Occupations: Clerical and Services related** are forecast to experience the largest declines in the long term, with 400 fewer people required within each of these occupations between 2025 and 2032.
44. In line with wider trends noted above, there will be changes in the types of roles workers undertake within industries as well as an increased focus on developing, utilising, and rewarding '**meta-skills**' such as complex problem solving, critical thinking, communication, creativity, and leadership within the workplace.

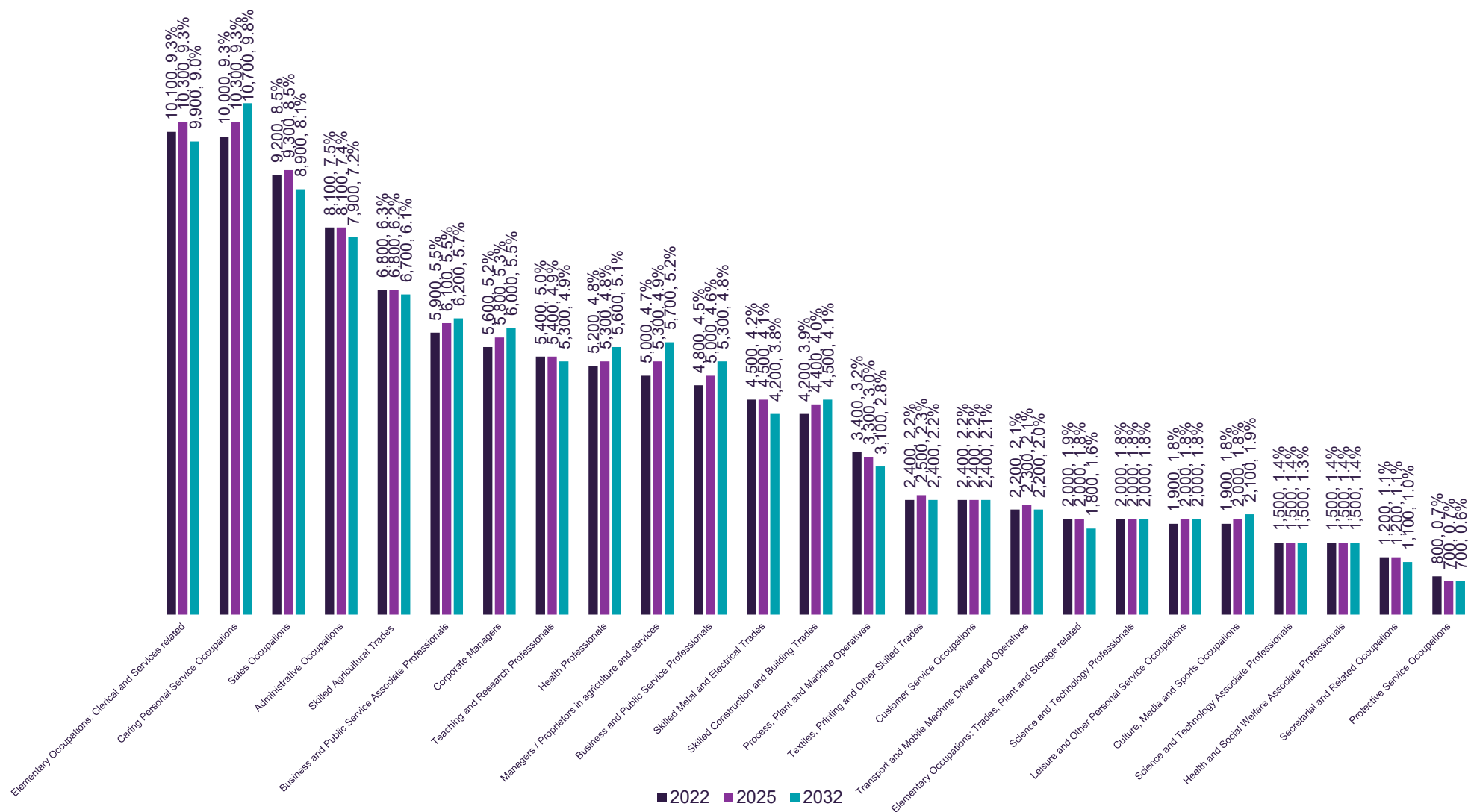


Figure 5: Employment by occupation and share of total employment, 2022, 2025 and 2032, South of Scotland

Job openings

45. Job openings in the medium term (2022-2025) are expected to be concentrated in a small number of industries, with four industries in the South of Scotland forecast to account for 8,100 (60.3%) of the requirement: Wholesale and retail trade; repair of motor vehicles and motorcycles (2,800); Human Health and Social Work Activities (1,900); Accommodation and Food Service Activities (1,600); and Agriculture, Forestry and Fishing (1,600). This mirrors the long-term trend (2025-2032), with these four industries forecast to account for 16,300 (61%) of future job openings.
46. By occupation in the medium term (2022-2025), the greatest number of people are forecast to be required in Sales Occupations; Elementary Occupations: Clerical and Services related; and Teaching and Research professionals. This forecast is mirrored in the longer term (2025-2032).
47. 44% of job openings in the medium term (2022-2025) are forecast to require qualification levels of SCQF 7-10 (equivalent to HNC to first degree) (see Table 2). This is mirrored in the long term (2025-2032), with 46% of job openings forecast to require SCQF 7-10.

Table 2: Job openings by qualification level required in the medium term and long term

| | No quals | SCQF 1-4 | SCQF 5 | SCQF 6 | SCQF 7-10 | SCQF 11-12 |
|------------------|-----------|----------|------------|------------|-------------|------------|
| 2022-2025 | 8% (1000) | 3% (400) | 24% (3200) | 16% (2200) | 44% (5900) | 5% (700) |
| 2025-2032 | 7% (2000) | 1% (300) | 25% (6700) | 16% (4300) | 46% (12300) | 5% (1300) |

Mapping provision and how this has changed over time

48. This section provides an answer to the question: *what does education and skills provision look like in the two Pathfinder regions, and how has this **changed over time**?* It provides a snapshot of available college, university, and work-based learning opportunities and how these have changed in the last decade, and a brief exploration of how course content and curriculum has adapted in response to skills needs.
49. This section takes each region in turn, providing an overview of education and skills provision in each region and a comparison with 2011-12 to explore relevant changes. It also provides a summary of findings drawn from interviews with institutional representatives, providing insight into how curricula have changed over time in response to learner and economic needs.
50. These trends are explored in greater detail in an accompanying supplementary report which will be published in due course.
51. One must note that university and college students in 2020-21 were impacted by the COVID-19 pandemic which presented a unique and significant external shock to the further and higher education system in Scotland. Students faced significant disruption as a consequence of the pandemic. In the college sector, the 2020-21 academic year started with a mix of in-person and remote learning for most, then between the end of December to February 2021 college campuses were mostly closed and learning, teaching and support services were moved completely online.
52. Some students on courses containing a practical element or a work placement in subjects such as engineering, construction, hair, beauty, social care and childcare, were unable to complete their course as intended and therefore had to 'defer' completing their course and qualification to the following academic year. While this report does not look at college and university qualifiers or graduate outcomes specifically, the ability for college students in particular to enrol on courses with a practical or work-based element were adversely affected.
53. University data is expressed as enrolments throughout this summary report. University students very rarely enrol on more than one course simultaneously, therefore one university enrolment is equivalent to one student headcount.
54. In the college sector however, students often enrol on more than one course at a time. In 2020-21 78% of students were enrolled on one course, with 17% enrolling on two courses and 4% enrolling on three courses simultaneously. This is largely unchanged from a decade ago where 81% were enrolled on one course in 2011-12³. Therefore, one enrolment is not necessarily equivalent to one headcount. In the earlier section of the report titled 'The Regions', college headcounts are given for the colleges in these regions

³ See [College Statistics 2020-21](#) report

to indicate the number of students (i.e. individuals) studying there relative to other providers. In the later sections of this report, college enrolments are used to show the number of enrolments in each subject superclass, and full-time equivalents (FTEs) when showing changes in student activity over the decade. This accounts for the fact that a decade ago there were more enrolments on short courses under 10 hours in duration. Across the college sector there were under 24,000 enrolments on short courses in 2011-12, however in 2020-21 this stood at just under 4,000⁴. Therefore, using FTEs for the college data allows a demonstration of changes in the amount of learning activity taking place. University data is presented as enrolments only.

North-east region

What provision looks like...

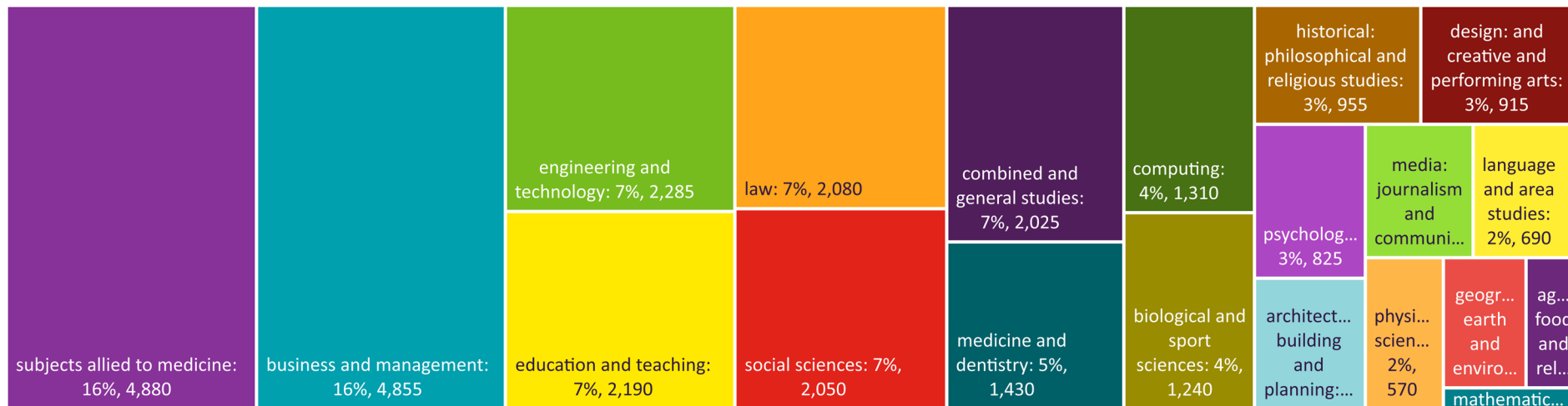
55. Universities in the North-east offer courses across a range of subject areas, as illustrated in Fig. 6, which shows enrolments at all levels of university study in 2020-21. Universities in this region also enrolled 485 students on Graduate Level Apprenticeship programmes in this region as part of their offer of work-based learning.⁵ Just over half (53%, 255) of these were in business and management courses, 21% (105) were on engineering and technology courses and 17% (85) were on computing courses.
56. Across all types of courses, subjects allied to medicine, which includes subjects related to nursing and midwifery, pharmacology, medical sciences and allied health, made up 16% of all university enrolments in the North-east in 2020-21, when split by subject area, equivalent to 4,880 enrolments. This is closely followed by business and management, which also formed 16% of enrolments by subject, or 4,855 enrolments in 2020-21. The only subject area not offered at universities in the North-east in 2020-21 was veterinary sciences.

⁴ See [College Statistics 2020-21](#) report

⁵ The Graduate Apprenticeship Programme was launched in 2017-18 and provides work-based learning opportunities up to Master's degree level for new and existing employees.

University enrolments in the Northeast, by subject area, 2020-21

- subjects allied to medicine: 16%, 4,880
- business and management: 16%, 4,855
- engineering and technology: 7%, 2,285
- education and teaching: 7%, 2,190
- law: 7%, 2,080
- social sciences: 7%, 2,050
- combined and general studies: 7%, 2,025
- medicine and dentistry: 5%, 1,430
- computing: 4%, 1,310
- biological and sport sciences: 4%, 1,240
- historical: philosophical and religious studies: 3%, 955
- design: and creative and performing arts: 3%, 915
- psychology: 3%, 825
- architecture: building and planning: 2%, 700
- media: journalism and communications: 2%, 695
- language and area studies: 2%, 690
- physical sciences: 2%, 570
- geography: earth and environmental studies: 2%, 520
- agriculture: food and related studies: 1%, 340
- mathematical sciences: 0.5%, 140



Subject areas with no enrolments: veterinary sciences

Figure 6: Enrolments by subject and qualification level at North East universities

57. Most enrolments at North-east universities are at first degree (undergraduate) level (61%, 18,845). Postgraduate (taught) enrolments (30%, 9,225) make up a relatively large proportion of enrolments in the areas of Business and management, Education and teaching, and Subjects allied to medicine.

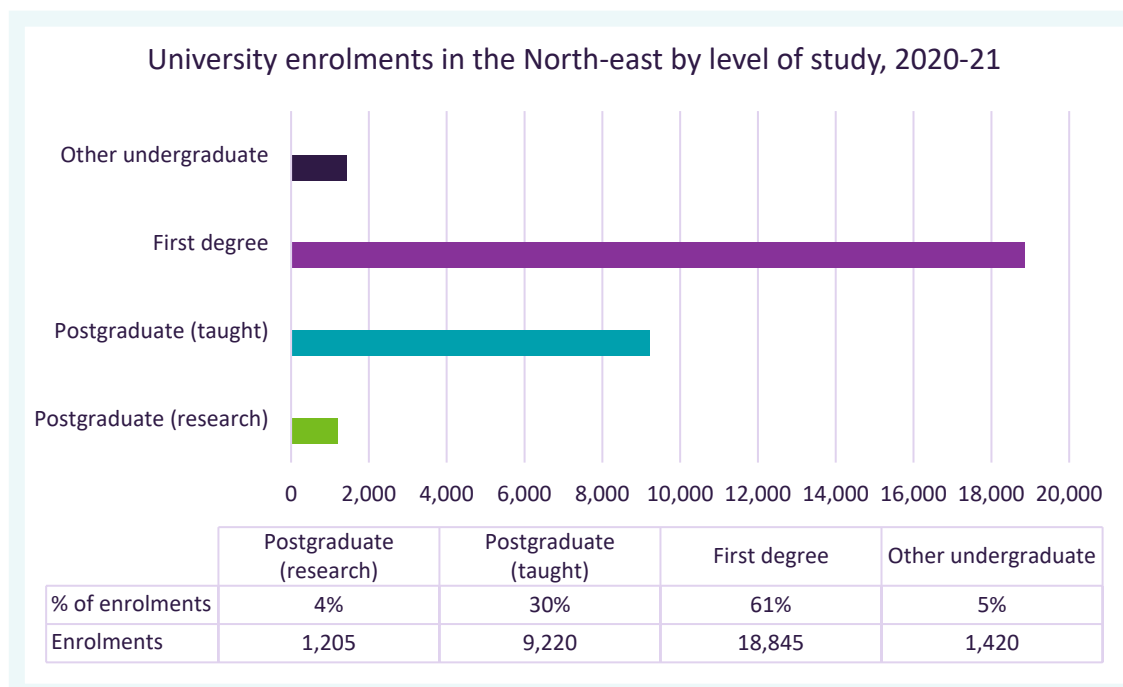


Figure 7: University enrolments in the North-east by level of study, 2020-21

58. Looking at university enrolments in the North-east by level of study (fig. 7), first degree students make up 61% of university enrolments in the North-east, at 18,845 enrolments. This includes 1,910 students on integrated undergraduate/postgraduate taught master's degrees, equivalent to 10% of first-degree students (not shown in figure above). Universities in the North-east have a significant taught postgraduate offering, with nearly a third (30%) of its university enrolments at taught postgraduate level, equivalent to 9,220 enrolments. Postgraduate (research) enrolments, which are entirely made up of students on doctorate degrees, make up 4% of university enrolments in this region, or 1,205 enrolments. Other undergraduate, which includes HNC, HND, CertHE and DipHE qualifications amongst others, make up 5% of university enrolments in this region, equivalent to 1,420 enrolments.
59. Looking at the college offering in the North-east (fig.8), the sector offers enrolments⁶

⁶ Enrolments is one way of providing a snapshot of college provision. One student can be enrolled on multiple programmes. For more information on the credit-based system for colleges, see [College Statistics 2020-21 \(sfc.ac.uk\)](https://www.sfc.ac.uk/College-Statistics-2020-21).

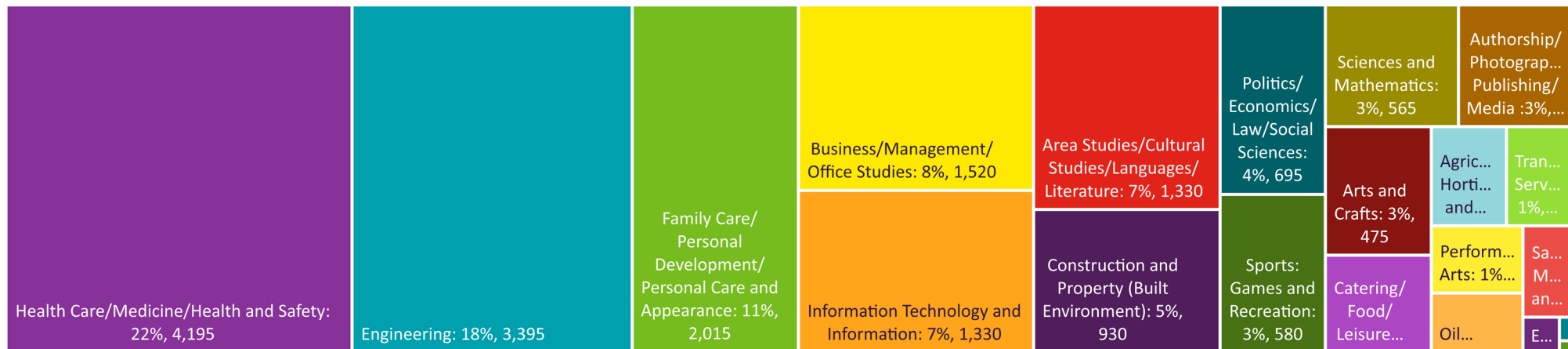
across a range of subject superclasses⁷, with only Manufacturing/Production Work and Humanities subjects not offered at colleges in the North-east in 2020-21. A little over a fifth (22%) of enrolments were in Health Care/Medicine/Health and Safety, at 4,195 enrolments in 2020-21. There is also a sizeable Engineering offering in the region, with 18% of enrolments offered in this subject superclass. Almost all of these FTEs are on non-short courses (less than 10 hours in length, with Engineering having less than 0.1 FTE comprised of students on short courses).

⁷ College subject areas. A breakdown of superclasses can be found here: [Credit Guidance for Colleges AY 2022-23 \(sfc.ac.uk\)](https://www.sfc.ac.uk/colleges-ay-2022-23).

College enrolments by subject superclass in the North East, 2020-21



- Health Care/Medicine/Health and Safety: 22%, 4,195
- Family Care/Personal Development/Personal Care and Appearance: 11%, 2,015
- Information Technology and Information: 7%, 1,330
- Construction and Property (Built Environment): 5%, 930
- Sports: Games and Recreation: 3%, 580
- Authorship/Photography/Publishing/Media :3%, 480
- Catering/Food/Leisure Services/Tourism: 2%, 360
- Transport Services: 1%, 225
- Oil/Mining/Plastics/Chemicals: 1%, 190
- Education/Training/Teaching: 0.2%, 45
- Engineering: 18%, 3,395
- Business/Management/Office Studies: 8%, 1,520
- Area Studies/Cultural Studies/Languages/Literature: 7%, 1,330
- Politics/Economics/Law/Social Sciences: 4%, 695
- Sciences and Mathematics: 3%, 565
- Arts and Crafts: 3%, 475
- Agriculture: Horticulture and Animal Care: 1%, 260
- Performing Arts: 1%, 215
- Sales: Marketing and Retailing: 1%, 155
- Environment Protection/Energy/Cleansing/Security: 0.1%, 10



Subject areas with no enrolments: Manufacturing/Production Work, Humanities

Figure 8: College enrolments by subject superclass in the North-east, 2020-21

60. Colleges offer a substantial amount of work-based learning, with colleges in the North-east enrolling 250 students on Foundation Level Apprenticeship (FA) courses and 1,575 students on Modern Apprenticeships (MA) in 2020-21. FA students were concentrated in the Health Care/Medicine/Health and Safety (27%, 70), Business/Management/Office Studies (16%, 40), Engineering (14%, 35) and Authorship/Photography/Publishing/Media (14%, 35) subject superclasses. MA students were concentrated in Engineering (61%, 955) and Construction and Property (Built Environment) (25%, 390)⁸. There were no Graduate Apprenticeship students at colleges in the North-east in 2020-21, with these being provided by the university sector in the region.

...and how it has changed over time

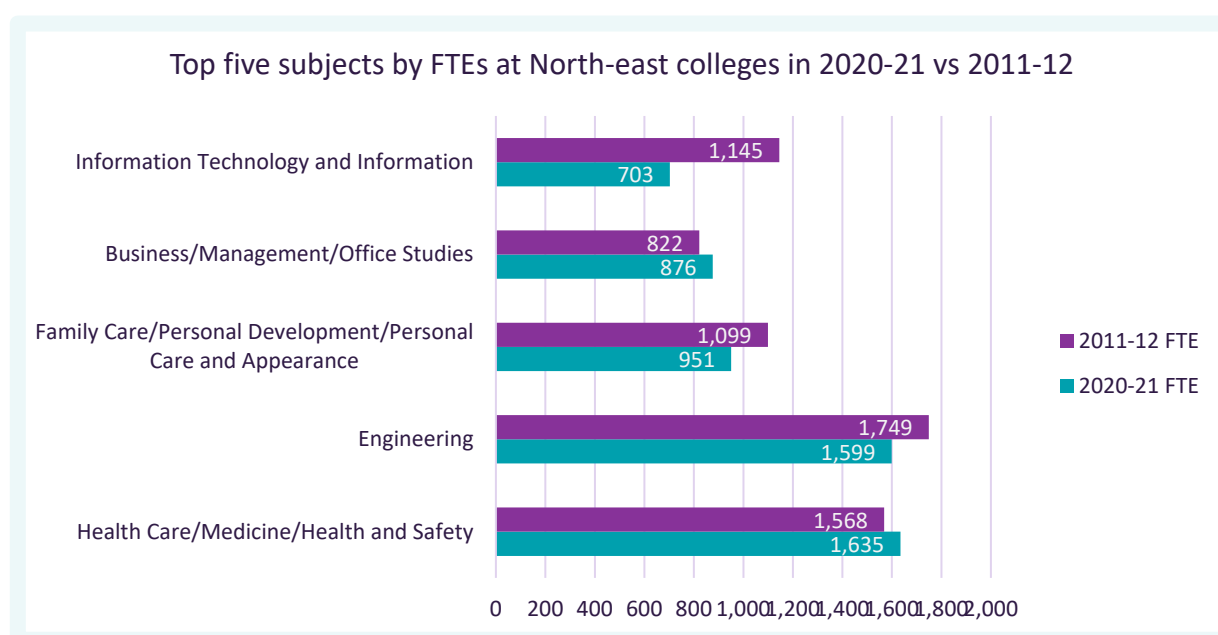


Figure 9: enrolments by subject (top five) in Northeast colleges in 2011-12 and 2020-21

61. Fig. 9 shows the top five most popular subject superclasses at colleges in the Northeast, by FTE delivered in 2020-21. In 2011-12 Engineering was the most popular subject by FTEs delivered. However, by 2020-21 Health Care/Medicine/Health and Safety has become the most popular subject, with 1,635 FTEs delivered in 2020-21 compared to 1,599 in 2011-12. This is primarily because of a reduction in FTEs delivered in Engineering over the decade (150 fewer FTEs) against a small (66 FTE) increase in the number on Health Care and related courses. Information Technology and Information has seen a drop in activity over the decade, from 1,145 FTEs in 2011-12 to 703 FTEs in 2020-21.

⁸ Not all MA qualifications are delivered by colleges – many are delivered by local authorities or private training providers, so are not captured by the college data presented here. In 2021-22, 3,015 learners were undertaking MA qualifications in the North-east of Scotland.

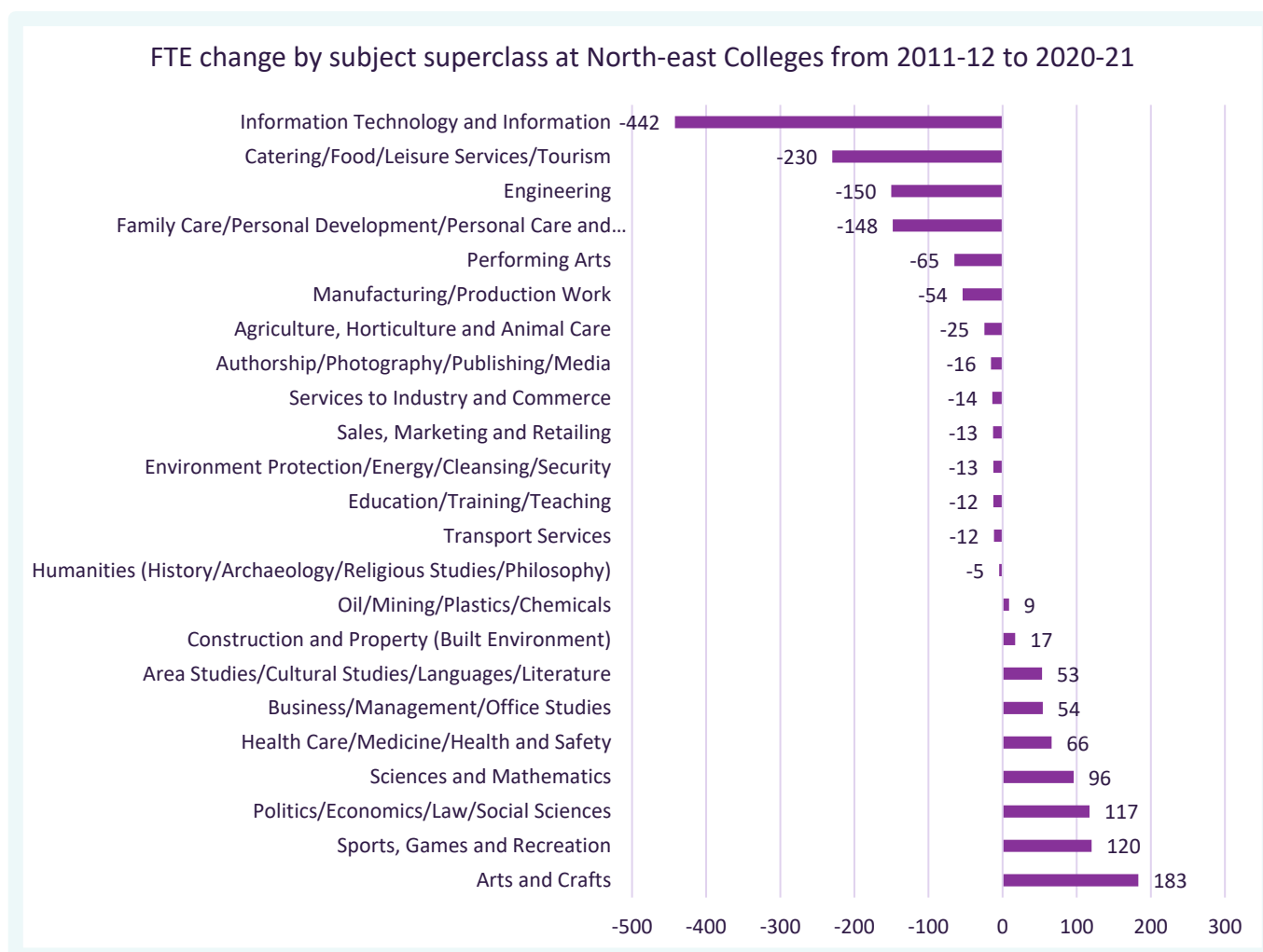


Figure 10: FTE change by subject superclass at North-east colleges

62. Fig. 10 shows the change in FTEs delivered at colleges in the Northeast between 2011-12 and 2020-21, by subject superclass. There was less learning activity taking place within Information Technology and Information at colleges in the Northeast compared to a decade ago, with 442 fewer FTEs, down to 703 in 2020-21. Likewise Catering/Food/Leisure Services/Tourism has seen a big decline in learning activity over the decade, decreasing by 230 FTEs to 339 in 2020-21. Furthermore, many subject superclasses have seen very little change in the amount of learning activity taking place.
63. The sector-wide decline in short courses over the decade is not a major factor in the decrease in FTEs for some subjects over the decade. There were 6 FTEs on Engineering on short courses in the North-east in 2011-12 compared to less than 0.1 FTE in 2020-21, however the total amount of FTE activity declined by 150 FTEs over the decade, therefore almost entirely from student studying longer courses. The subject with the second largest amount of FTEs in short courses in 2011-12 was Catering/Food/Leisure Services/Tourism, with 0.7 FTEs, which therefore had a minimal impact on the 230 FTE decline overall.

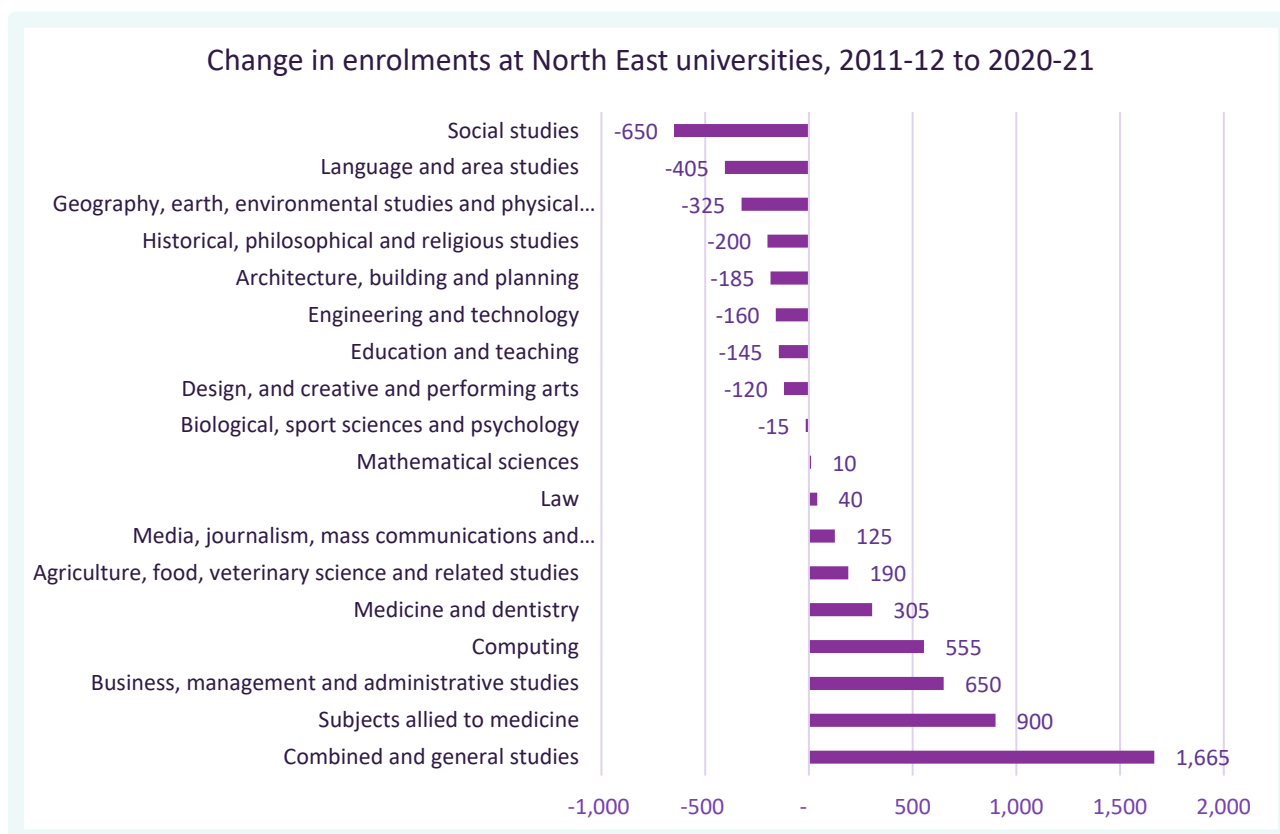


Figure 11: Change in enrolments at North-east universities, 2011-12 to 2020-21

64. Fig. 11 shows how the count of enrolments have changed across subject groups between 2011-12 and 2020-21⁹.
65. Subjects allied to medicine, which includes nursing and midwifery, pharmacology, medical sciences and allied health, have increased by 900 enrolments over the decade. Engineering, like in the college sector as shown in the previous chart, has seen a decline in activity in North-east universities over the decade, declining by 160 enrolments over the decade. Meanwhile Computing enrolments increased by 555 at universities in the North-east whilst having a large decrease in the college sector as shown in Fig. 9.

⁹ For the 2019-20 academic year onwards, HESA implemented a new subject coding system; the Higher Education Classification of Subjects (HECoS). This replaces the Joint Academic Coding System (JACS) that was used to classify subjects in previous years, including 2011-12. Subject groups defined using the JACS coding system for 2011-12 have been mapped to subject groups using the HECoS hierarchy in 2020-21 using guidance provided by HESA, in order to see changes in subject provision over the decade.

South of Scotland region

What provision looks like...

66. Most university provision in the South of Scotland is centred around design and creative and performing arts subjects, which made up 38% of university enrolments in this region in 2020-21, equivalent to 660 enrolments (fig. 12). This provision is provided entirely by Heriot-Watt's Galashiels campus. Subjects allied to medicine are the second largest subject area at university campuses in the region, making up 15% or 250 of enrolments. This takes place entirely at University of the West of Scotland's Dumfries Campus, as do the 14% of enrolments (240) in education and teaching. Likewise, the 8% of enrolments in agriculture, food and related studies is provided entirely at SRUC's Barony Campus. Business and management on the other hand is offered at three of the university campuses across the region with the exception of SRUC Barony Campus, making up 4% or 65 enrolments in this subject area. As noted below, many subject areas are not available to study at university campuses in the South of Scotland. Graduate Level Apprenticeships were not offered at universities in the South of Scotland in 2020-21.

University enrolments in the South of Scotland, by subject area, 2020-21

- design, and creative and performing arts: 38%, 660
- subjects allied to medicine: 15%, 250
- education and teaching: 14%, 240
- agriculture, food and related studies: 8%, 130
- social sciences: 6%, 105
- geography, earth and environmental studies: 6%, 95
- veterinary sciences: 6%, 95
- business and management: 4%, 65
- historical, philosophical and religious studies: 3%, 60
- computing: 0.6%, 10
- physical sciences: 0.3%, 5



Subject areas with no enrolments: psychology; architecture, building and planning; language and area studies; biological and sport sciences; law; engineering and technology; medicine and dentistry; mathematical sciences; combined and general studies; media, journalism and communications

Figure 12: University enrolments in the South of Scotland by subject area, 2020-21

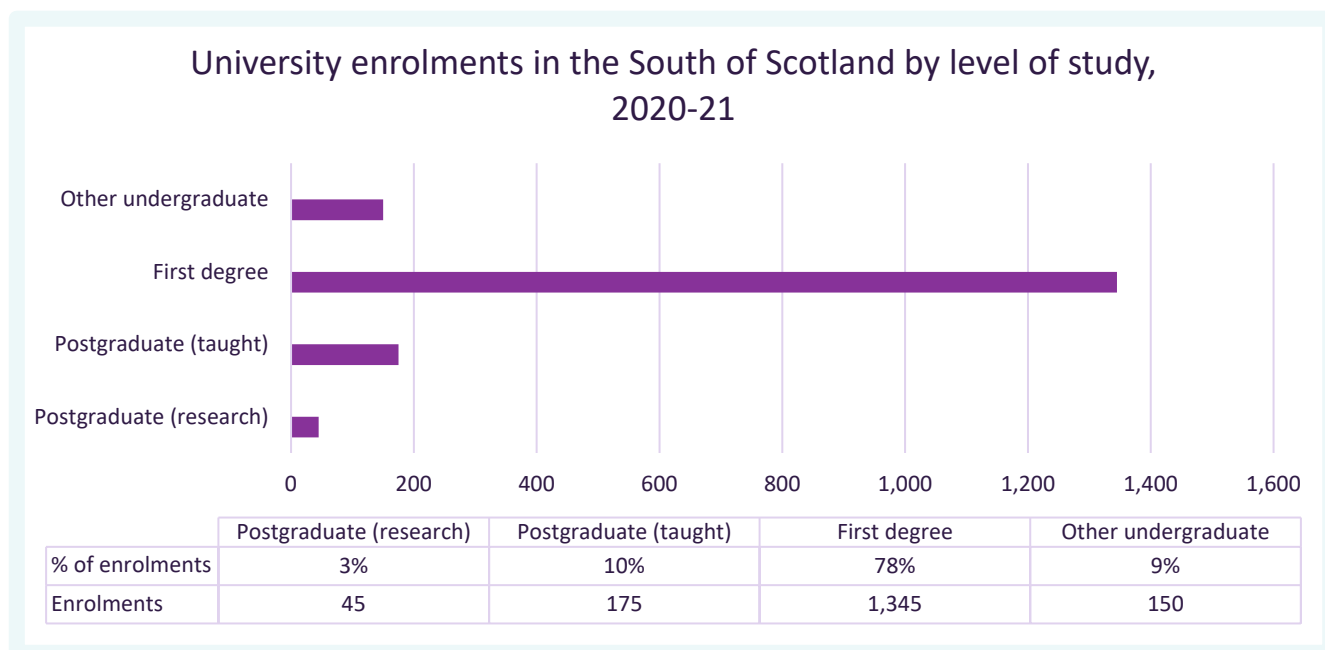
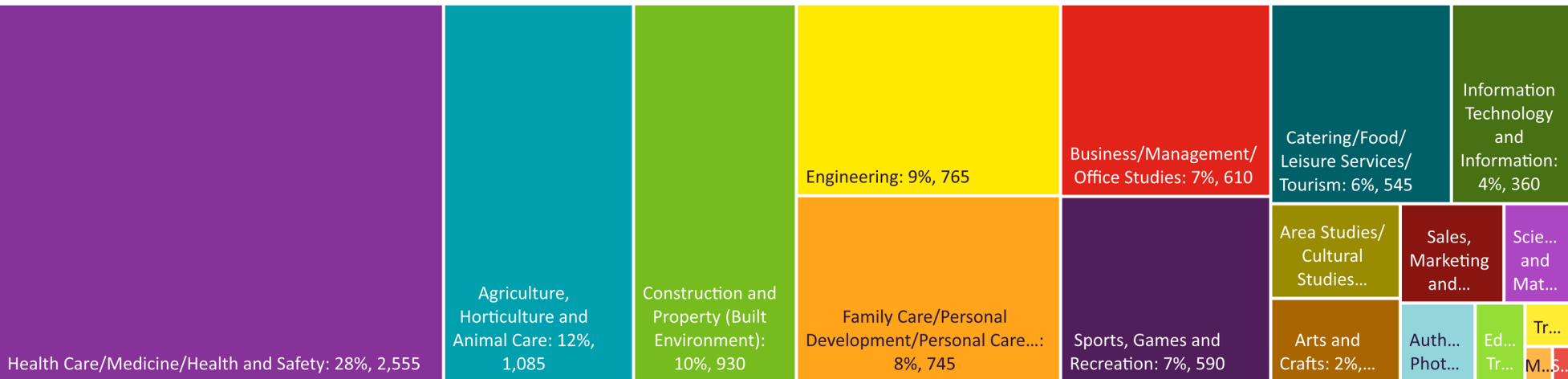


Figure 13: University enrolments in the South of Scotland by level of study, 2020-21

67. University enrolments in the South of Scotland are predominantly at first degree level, with 78% of enrolments in 2020-21 being at this level of study (fig. 13). Integrated undergraduate/postgraduate taught masters degrees are not available in the South of Scotland. Postgraduate taught provision made up one-in-ten enrolments in this region while only 3% are on research postgraduate courses. Close to one-in-ten are on other undergraduate courses (9%, 150 enrolments), with 70 of these on HNCs and 40 on HNDs.

College enrolments in the South of Scotland, by subject superclass, 2020-21

- Health Care/Medicine/Health and Safety: 28%, 2,555
- Construction and Property (Built Environment): 10%, 930
- Family Care/Personal Development/Personal Care...: 8%, 745
- Sports, Games and Recreation: 7%, 590
- Information Technology and Information: 4%, 360
- Arts and Crafts: 2%, 165
- Sciences and Mathematics: 1%, 100
- Education/Training/Teaching: 1%, 60
- Manufacturing/Production Work: 0.2%, 15
- Agriculture, Horticulture and Animal Care: 12%, 1,085
- Engineering: 9%, 765
- Business/Management/Office Studies: 7%, 610
- Catering/Food/Leisure Services/Tourism: 6%, 545
- Area Studies/Cultural Studies/Languages/Lit: 2%, 185
- Sales, Marketing and Retailing: 2%, 155
- Authorship/Photography/Publishing/Media: 1%, 90
- Transport Services: 0.3%, 30
- Services to Industry and Commerce: 0.1%, 10



Subject areas with no enrolments: Humanities; Politics/Economics/Law/Social Sciences; Performing Arts; Environment Protection/Energy/Cleansing/Security; Oil/Mining/Plastics/Chemicals

Figure 14: College enrolments in the South of Scotland by subject superclass, 2020-21

68. Fig. 14 shows the proportion of enrolments at colleges in the South of Scotland, by subject superclass. Just over a quarter of enrolments in 2020-21 were in Health Care/Medicine/Health and Safety, at 28% or 2,555 enrolments. Agriculture, Horticulture and Animal Care make up 12% of enrolments. There are five subject superclass groups at colleges in the South of Scotland with no enrolments. Looking at apprenticeship offer within work-based learning, colleges in the region enrolled 15 students in Graduate Level Apprenticeships, all of which were in the Business/Management/Office Studies superclass. In 2020-21 130 students were enrolled in Foundation Level Apprenticeship programmes, half of these (51%, 65) were in Health Care/Medicine/Health and Safety, while 26% (35 enrolments) were in Engineering. 960 students were enrolled in MAs¹⁰, with the majority of these in Construction and Property (Built Environment) (39%, 370), Engineering (22%, 210) and Health Care/Medicine/Health and Safety (19%, 180).
69. Furthermore, there was very little activity in short courses in colleges in the South of Scotland in 2020-21, at less than 1 FTE total across the following subject superclasses: Information Technology and Information, Agriculture, Horticulture and Animal Care, Construction and Property (Built Environment), Engineering.

...and how has it changed over time

70. Fig. 15 below shows the top five subject superclasses in 2020-21 by FTEs at South of Scotland colleges compared to 2011-12. The top two subject superclasses are unchanged from a decade ago, with both Health Care/Medicine/Health and Safety and Agriculture, Horticulture and Animal care as the top two superclasses in 2020-21 and 2011, with 1,121 and 1 644 and 858 and 554 FTEs respectively. A decade ago, Family Care was the second most popular superclass by amount of learning activity, with 659 FTEs. In 2020-21 this has dropped down to fourth superclass by activity, at 496 FTEs.

¹⁰ Not all MA qualifications are delivered by colleges – many are delivered by local authorities or private training providers, so are not captured by the college data presented here. In 2021-22, 1,875 learners were undertaking MA qualifications in the South of Scotland.

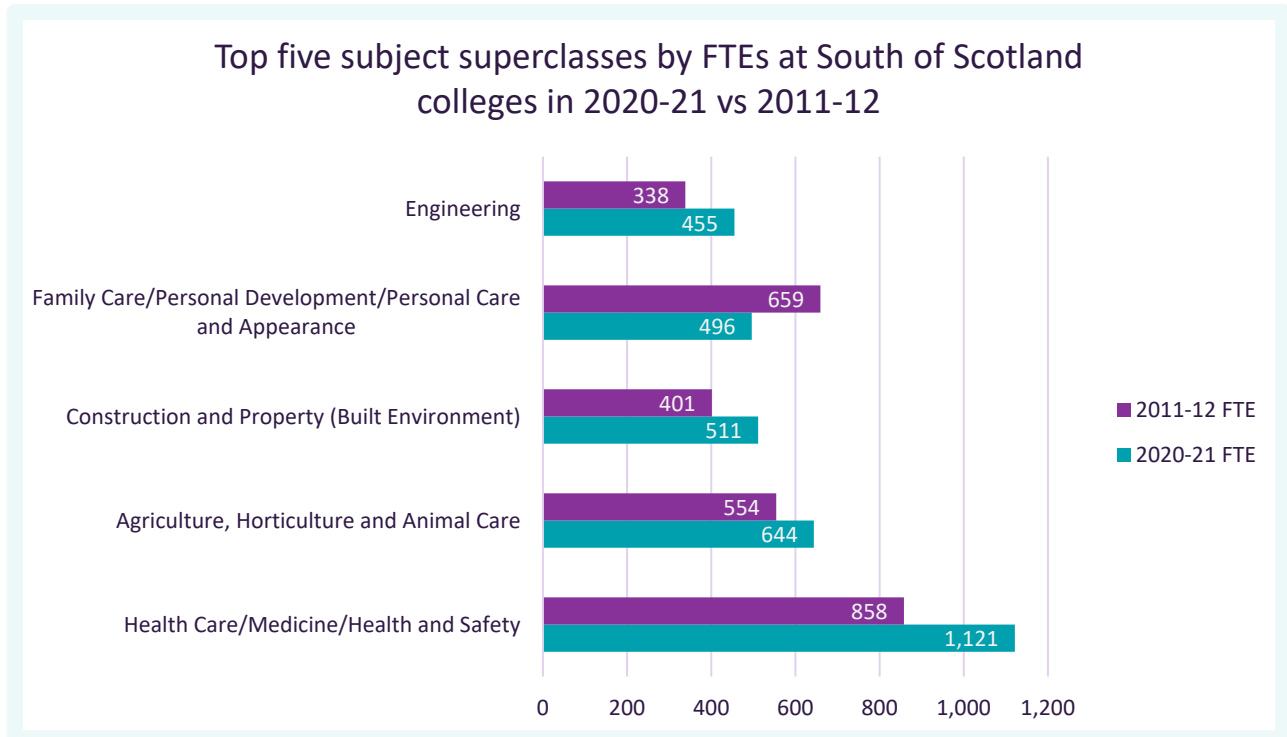


Figure 15: Top five subject superclasses by FTEs at South of Scotland colleges in 2020-21 vs 2011-12

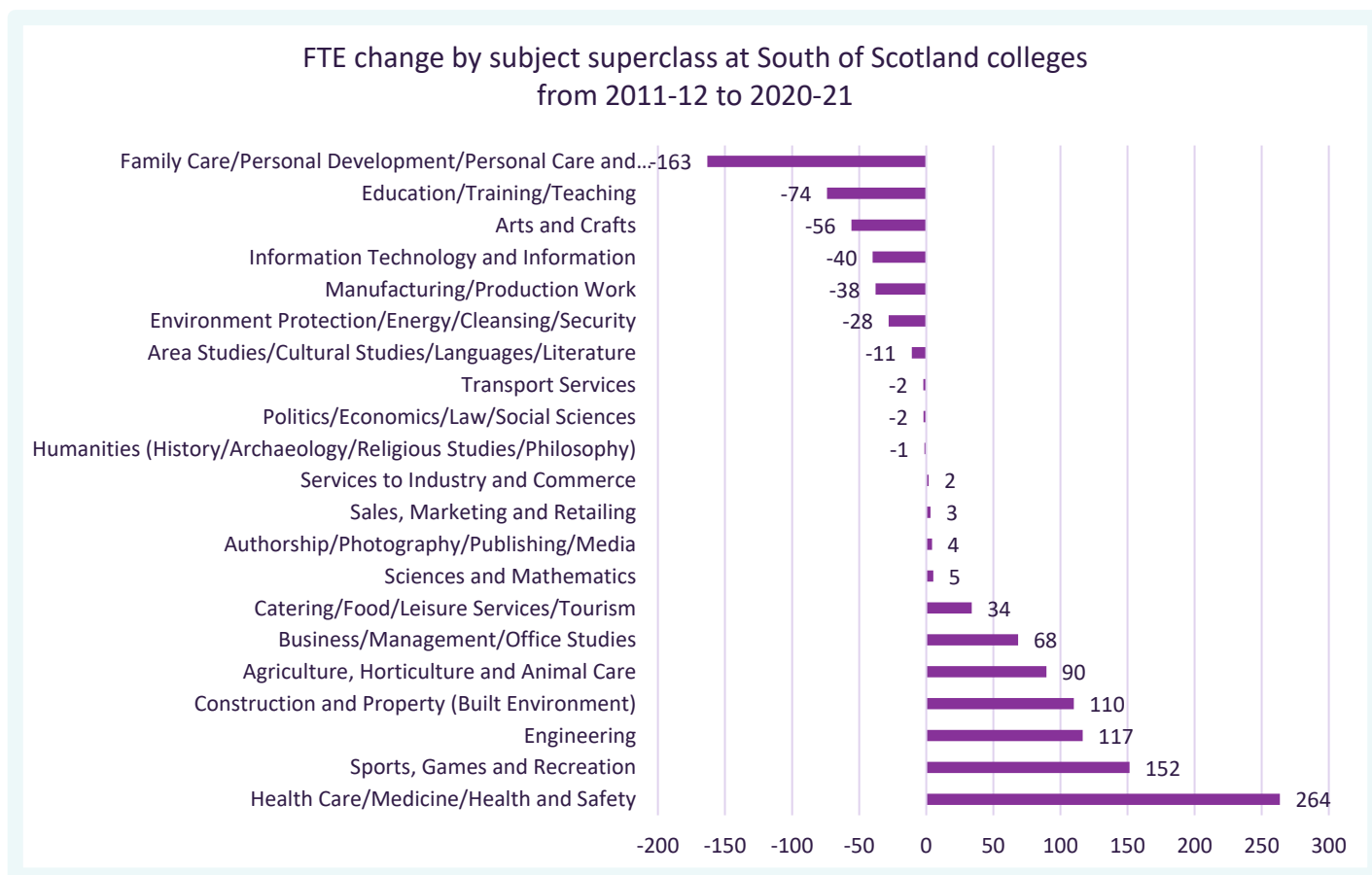


Figure 16: FTE change by subject superclass at South of Scotland colleges from 2011-12 to 2020-21

71. Fig. 16 shows the change in FTEs over the decade for all subject superclasses offered at colleges in the South of Scotland. The amount of learning activity delivered towards Family Care/Personal Development/Personal Care declined by 163 FTEs over the decade. Many subject areas saw growth in learning activity over the decade.
72. The decline in FTEs on short courses over the decade is not a significant contributing factor in some of the above subjects showing a decline in activity over the decade. The subjects with the highest FTEs on short courses in 2011-12 were Health Care/Medicine/Health and Safety (3.6 FTE), Agriculture, Horticulture and Animal Care (2.9 FTE) and Catering/Food/Leisure Services/Tourism (2.7 FTE). As previously noted, there was less than 1 FTE total on short courses in the South of Scotland in 2020-21.

Change in enrolments at South of Scotland universities, 2011-12 to 2020-21

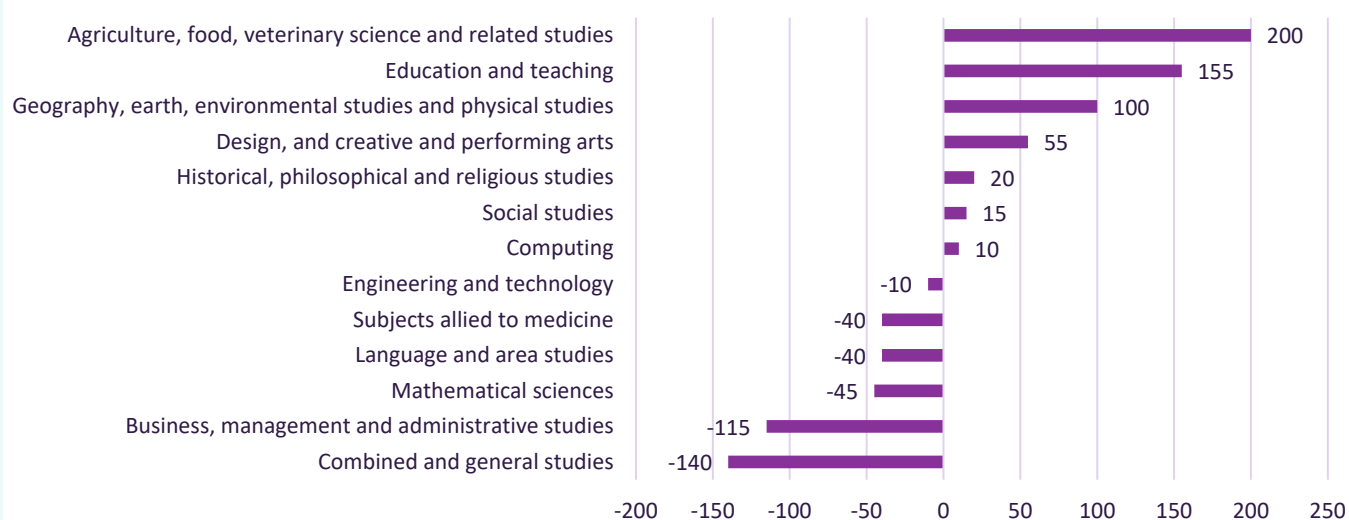


Figure 17: Change in enrolments at South of Scotland universities, 2011-12 to 2020-21

73. Fig. 17 shows the change in enrolments by subject at university campuses in the South of Scotland. Campuses in this region are offering more places on courses related to Agriculture, food, veterinary science and related studies; Education and teaching; and geography, earth, environmental studies and physical sciences compared to a decade ago, with 200, 155 and 100 more enrolments than a decade ago, respectively. Mathematical sciences; Language and area studies; and Engineering and technology were enrolled on in 2011-12 but did not register any enrolments in 2020-21. Geography, earth, environmental studies and physical studies did not register any enrolments against it a decade ago but has since been introduced in the region and as of 2020-21 has 100 enrolments against it.

Qualitative insights

74. This section presents some key findings from interviews with institutional representatives and with employers. These engagements aimed to capture some of the changes to provision that may not be immediately obvious through quantitative data analysis, in particular those changes to curricula that are not captured by mapping provision over time, and to capture the links between employers and institutions. These themes are explored in greater detail in a supplementary report.

Changing curricula

75. Institutions have placed increasing focus on **developing employability skills throughout curricula**. This includes introducing virtual reality (e.g., Borders College) which simulates the workplace environment and smooths the transition into the workplace; an increased focus on multi-disciplinary projects addressing real world challenges (e.g., RGU); and homing in on the range of skills or attributes that students should develop (e.g., Graduate Attributes at University of Aberdeen or ASPIRE at the University of West of Scotland). Employers report that **soft skills** such as communication skills are amongst the most important for work readiness.
76. **Work placements and work-based learning** are valued by employers as key methods for building work readiness. This value is recognised by institutions, and they report that an increasing number of learners have access to this opportunity, whether through a formal work-based learning programme such as an accredited industrial placement, or through internships or other co-curricular activity with employers. Some institutions identified they would still like to offer more of these opportunities to learners.
77. **Subject curricula have undergone significant change** in some areas since 2011. Some institutions noted the significant change in environmental science programmes, with an increased focus on sustainability and climate change, and an increased focus on cyber security in computer science programmes, for example.
78. Every programme undergoes a **regular cycle of review**, which usually includes an evaluation from learners and educators, an assessment against relevant performance indicators and an engagement with external drivers such as national policy initiatives and employer needs.

Learner Pathways

79. This section explores the pathways into and through education and training in the regions. It presents entry, exit and transition points for learners in the regions, providing insight into opportunities and uptake.
80. These trends are explored in greater detail in an accompanying supplementary report which will be published in due course.

North-east region

81. Fig. 18 presents data published by Scottish Government¹¹ showing the destination of school leavers from publicly funded secondary schools in the North-east in the 2020-21 academic year, surveyed approximately nine months after graduation. Data was originally presented for each local authority area in Scotland, which we have combined to show findings for the Pathfinder regions. The chart shows the percentage of leavers in the North-east by their destination category, with the blue bar representing 2020-21 leaver data, the black box representing the 2011-12 leaver data, and the orange diamond representing the 2020-21 figure for Scottish publicly funded schools as a whole.

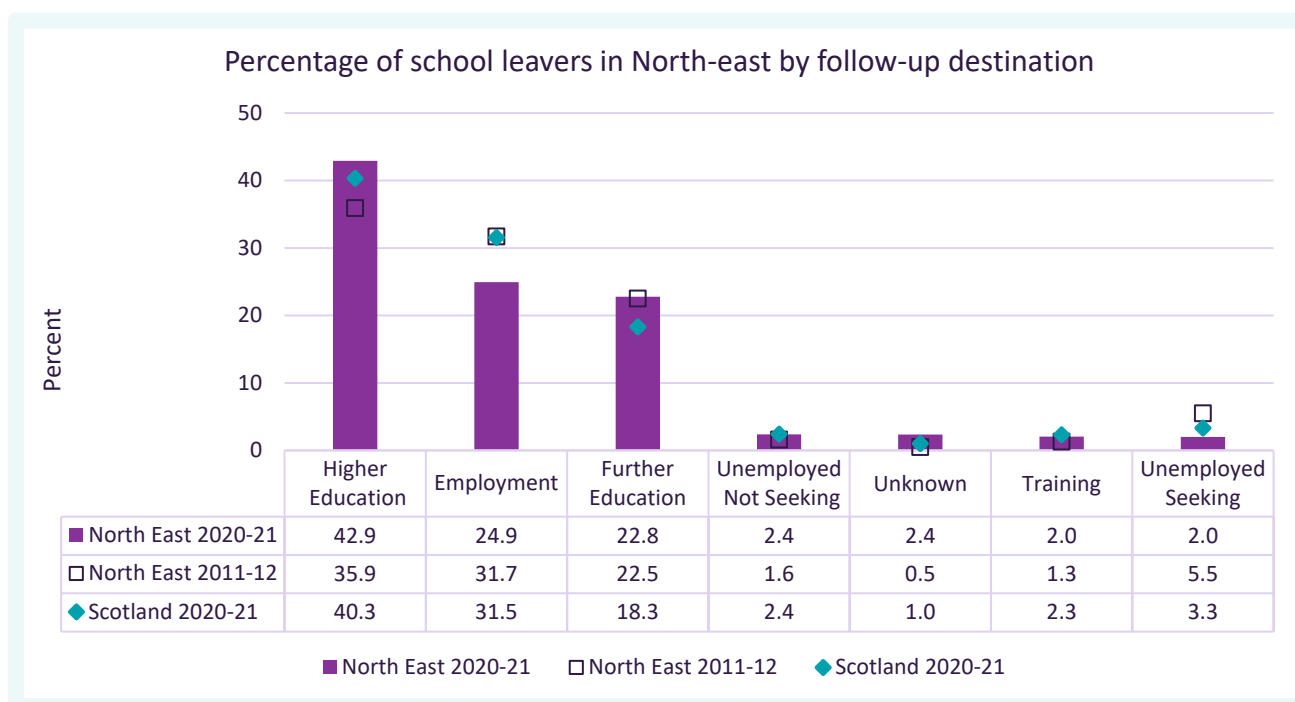


Figure 18: Percentage of school-leavers in North-east by follow-up destination

¹¹ Source: Summary Statistics for Follow-up Leaver Destinations, No. 4: 2022 Edition – Scottish Government

82. A relatively high proportion of school leavers in the North-east enter higher or further education immediately after leaving secondary school (fig. 18). Data shows that for leavers from the 2020-21 academic year, 42.9% were in Higher Education nine months after leaving and 22.8% were in Further Education. This is 2.6pp and 4.5pp higher than the figure for Scotland, respectively. Meanwhile, far fewer school leavers in the North-east immediately entered employment compared to the Scotland average. In the North-east, 24.9% of leavers were in employment¹² after leaving school compared to 31.5% for Scotland as a whole.
83. When we compare the North-east figures to 2011-12, we can see that a greater proportion of school leavers immediately enter Higher Education after leaving school compared to a decade ago, a 7pp increase. Meanwhile, a very similar proportion enter Further Education compared to a decade ago (a 0.3pp increase). A much smaller proportion enter into employment compared to a decade ago, with 24.9% entering employment nine months after leaving school compared to 31.7% a decade prior, a 6.8pp decrease. Positively, a smaller proportion were categorised as Unemployed Seeking compared to a decade ago, at 2.0% in for 2020-21 leavers compared to 5.5% for leavers a decade prior (3.5pp fewer).

¹² Employment figures include school-leavers who progressed to modern apprenticeship (MA) qualifications

Student flows into first degree programmes at universities in the North East.
Shows UK domiciled students on all first degree programmes as of 2020-21.

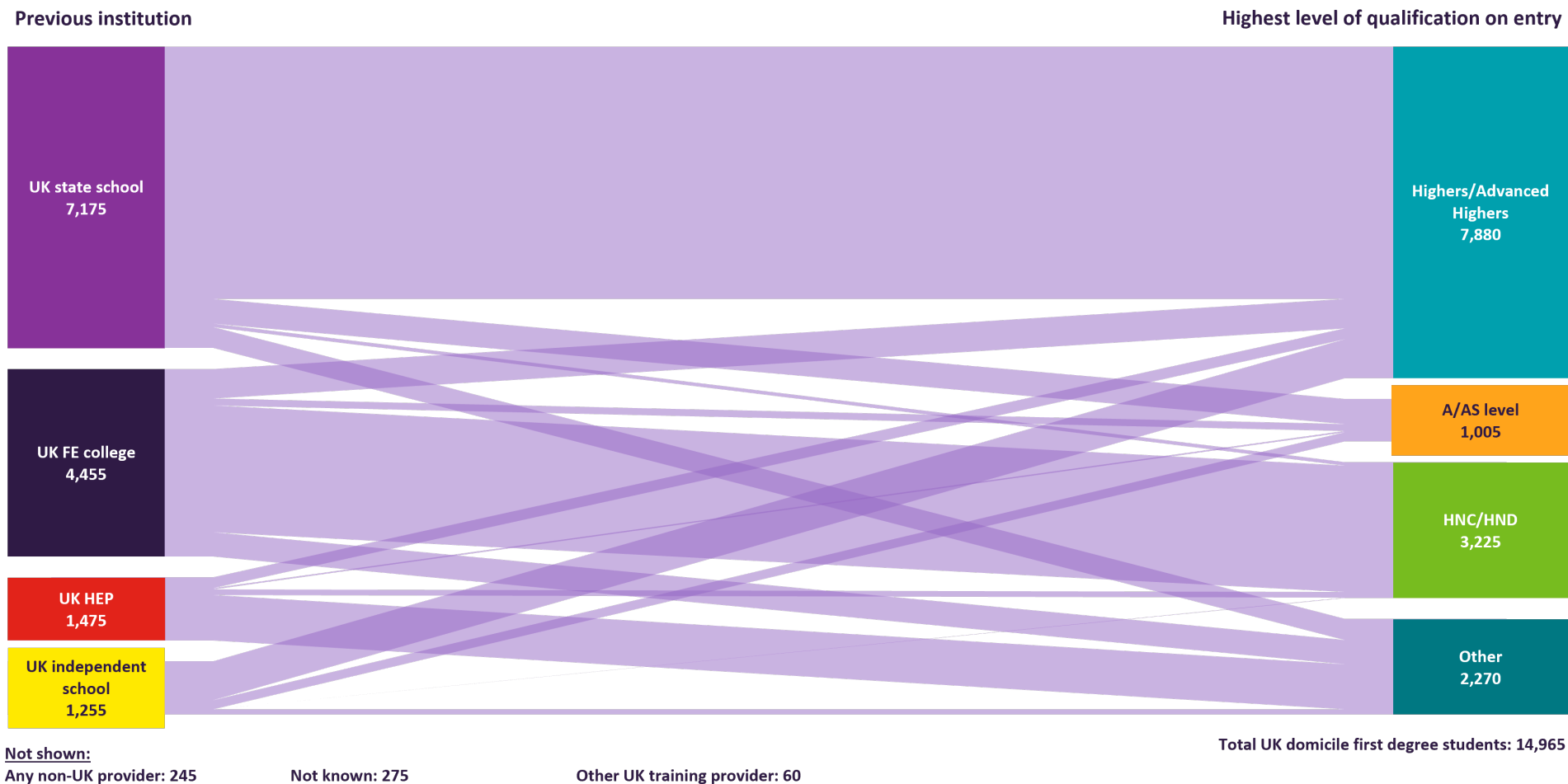


Figure 19: Student flows into first degree programmes at universities in the North-east (2020-21)

84. Fig. 19 shows the flow of UK domiciled students into first degree programmes at universities in the North-east by taking a snapshot of the 2020-21 student population and breaking down their previous institution and their highest qualification on entry. This allows us to see where students are entering first degree university programmes from and what qualifications they enter with. The leftmost part of the chart shows students' previous institution type, and the rightmost part of the chart shows groups by the highest qualification on entry.
85. The chart shows us that almost half (48%) of UK domiciled first degree students at universities in the North-east came from state schools in the UK, the vast majority of whom enter with Highers/Advanced Highers, with small proportions entering with A/AS levels or Other qualifications. Close to a third (30%) entered these programmes in the North-east from colleges, the vast majority of whom do so with HNC/HND qualifications but also a lesser proportion with Highers/Advanced Highers. A little under one-in-ten (8%) are came from UK independent schools.

South of Scotland region

86. Fig. 20 showing the destinations of school leavers from publicly funded secondary schools approximately nine months after graduation indicates that school leavers are taking different routes immediately after leaving school compared to a decade ago. For school leavers from secondary schools in the South of Scotland in 2020-21, 37.0% were in Higher Education nine months after leaving, slightly below the figure for Scotland as a whole at 40.3%. However more school leavers from this region are going immediately into Higher Education compared to a decade ago, when the figure was 33.7%, 3.3pp lower.
87. More school leavers are studying FE courses immediately after leaving school in the South of Scotland compared with Scotland as a whole, with 19.1% progressing in to FE courses after school compared with 18.3% for the rest of Scotland. Far fewer school leavers are going straight into FE compared to a decade ago, when this figure was 29.9%. Employment appears to be a more popular pathway immediately after leaving school in the South of Scotland compared with Scotland as a whole, and compared with the figure for the region a decade ago. In 2020-21 35.7% of leavers went into employment, compared to a 2020-21 Scotland average of 31.5%, and compared the figure for the region ten years ago, at 22.6%. Related to this, 7.3% of leavers in the region were unemployed seeking a decade ago. As of 2020-21 this is back down to 3.3% (same as the Scotland average).

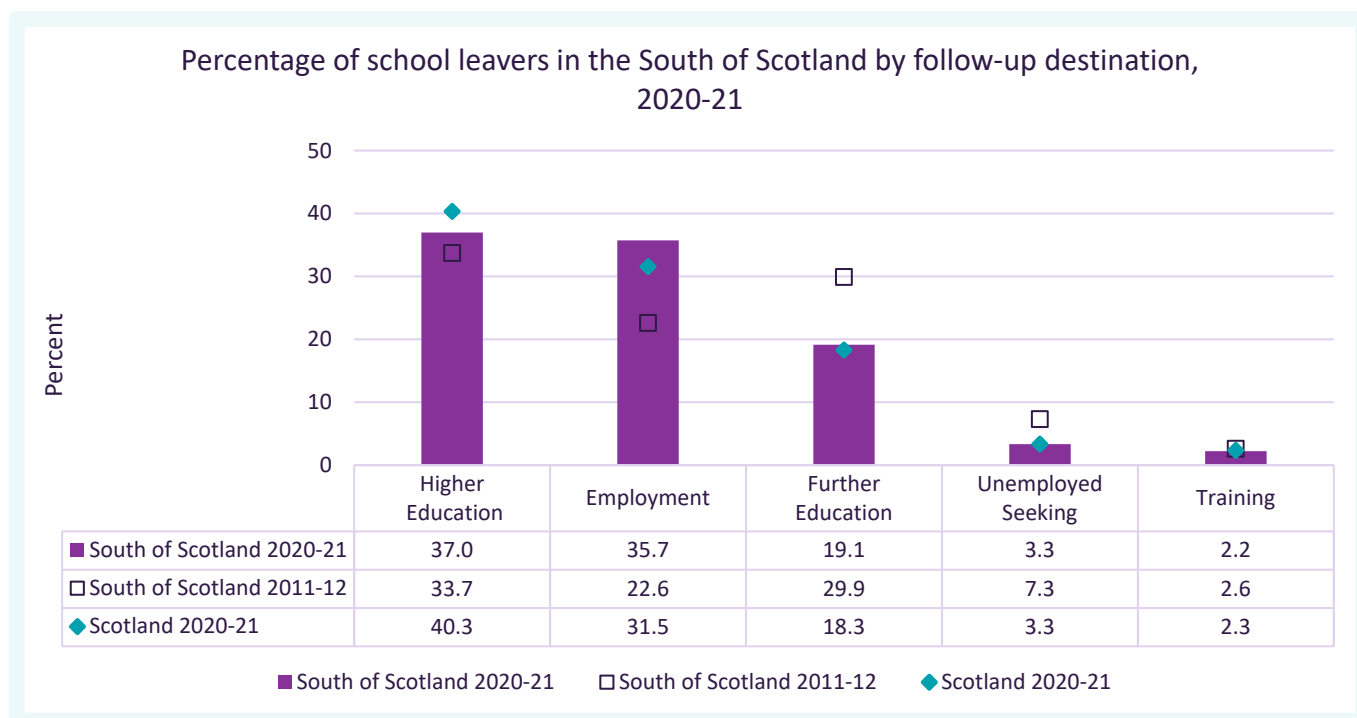
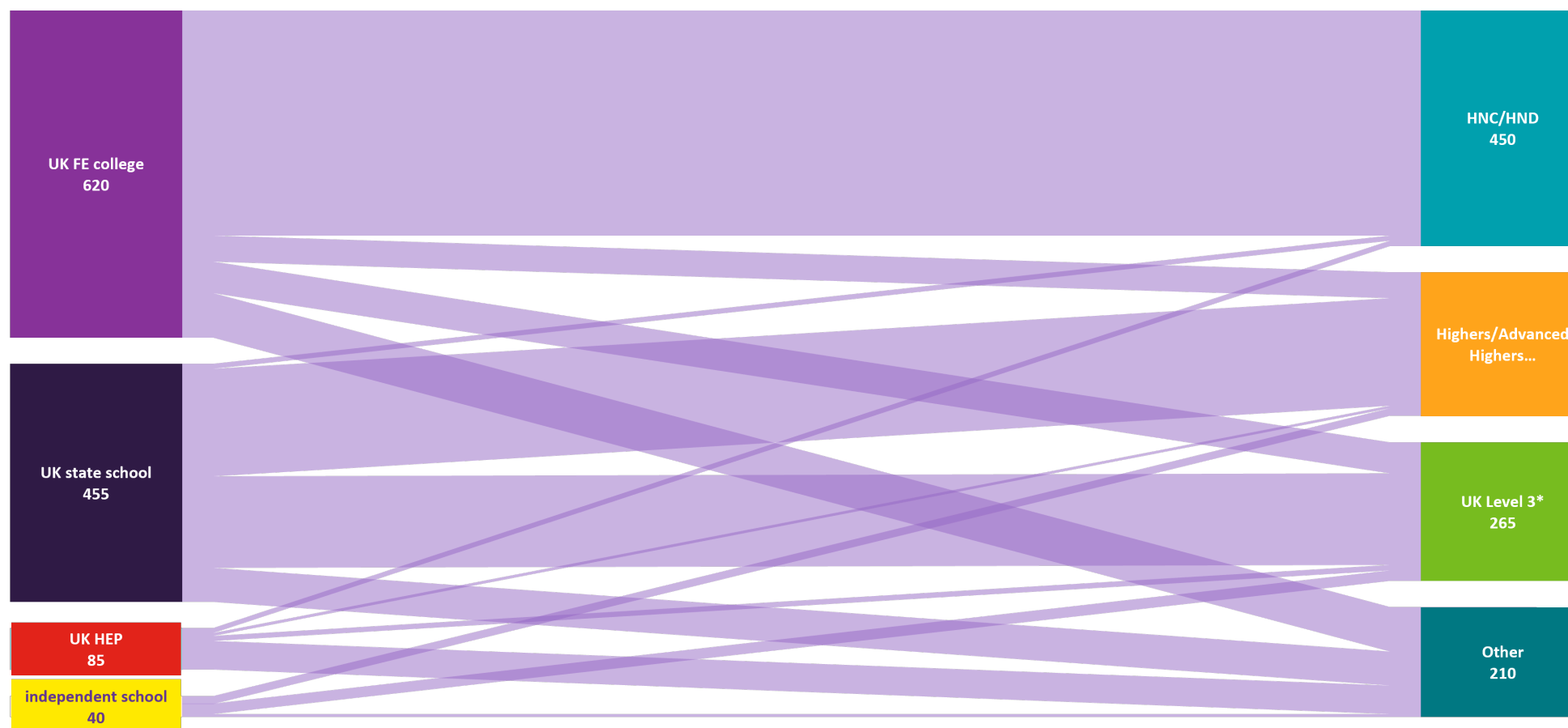


Figure 20: Percentage of school leavers in the South of Scotland by follow-up destination, 2020-21

88. Fig. 21 shows the flow of UK domiciled students into first degree programmes at universities in the South of Scotland by taking a snapshot of the 2020-21 student population and breaking down their previous institution and their highest qualification on entry. This allows us to see where students are entering first degree university programmes from and what qualifications they are entering with. The leftmost part of the chart shows students' previous institution type, and the rightmost part of the chart shows groups by the highest qualification on entry.
89. We can see that at universities in the South of Scotland, the most popular pathway into first degree courses is via college and the most popular qualification on entry was an HNC/HND. In 2020-21, half of first-degree students at universities in the South of Scotland had come from FE colleges (50%) and 37% came from UK state schools. Only 3% of first-degree students in the South of Scotland came from UK independent schools. In 2020-21 36% had entered with HNC/HNDs as their highest qualification on entry while Highers/Advanced Highers were the highest qualification of 22% of students.

Student flows into first degree programmes at universities in the South of Scotland.
Shows UK domiciled students on all first degree programmes as of 2020-21.



Not shown:

Any non-UK provider: 5

Not known: 35

Other UK training provider: 5

*in Scotland this would include Modern Apprenticeships, Foundation Apprenticeships, National Progression Award, National Certificates, some SVQs.

Total UK domicile first degree students: 1,245

Figure 21: Student flows into first-degree programmes at universities in the South of Scotland

Careers Information, Advice and Guidance (CIAG)

90. The Regional Tertiary Provision Pathfinders project recognises the key role careers information, advice and guidance plays in supporting learner transitions into and through education, and in shaping learner demand, which in turn influences provision. This section provides a very high-level overview of the careers provision for school pupils in each Pathfinders region, with further data to be published in due course.

Policy Context

91. The Scottish Government's [*Careers Strategy: Moving Forward*](#) was published in February 2020 and sets out its vision for careers provision that delivers for all.
92. Building on this vision, [*Careers by Design*](#), the main report of the Career Review Programme Board, was published in February 2022 and set out a number of recommendations for enhancing the careers ecosystem. These recommendations were accepted in full by Scottish Government, and the Programme Board is now progressing with an implementation plan. The Review highlights the importance of career education and support throughout the learner journey.
93. In September 2022, the Minister for Higher Education, Further Education, Youth Employment and Training announced an independent review into the skills delivery landscape in Scotland. Alongside a wider consideration of the skills landscape, this Review also considers how the recommendations of the Careers review can best be taken forward and what additional support young people may need to prepare them for the world of work.

Delivery

94. Career services in Scotland are delivered by a range of actors, including schools, colleges, universities, Skills Development Scotland (SDS), third sector organisations and more. This report does not attempt a wholesale analysis of careers support through these various actors. Here we provide a snapshot of the CIAG provision delivered by SDS, the largest actor in this space, in schools and through their universal offer, in each of the two Pathfinder areas. There is some reflection on career education and employability in tertiary institutions in section 2 of this report.

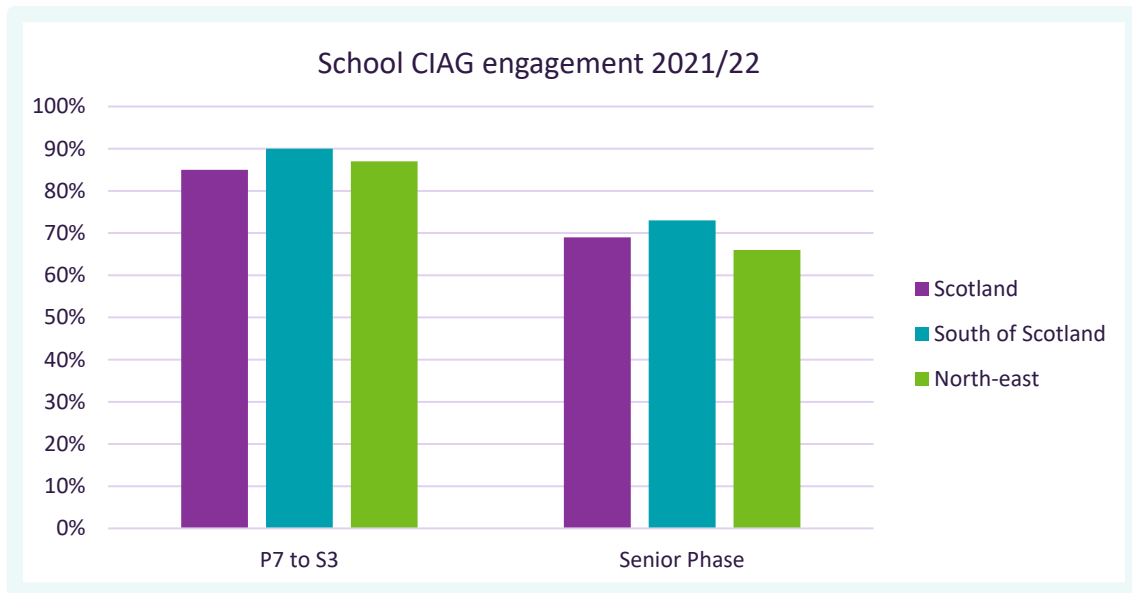


Figure 22: Proportion of school pupils engaging with in-school careers support in the North-east, South and Scotland as a whole

95. In 2021/22, 90% (7,585) of P7-S3 pupils in the South of Scotland region and 87% (12,435) of P7-S3 pupils in the North-east region participated in a careers' session run by SDS in school. 73% (4,590) of senior phase pupils in the South of Scotland region and 66% (6,839) of senior phase pupils in the North-east region participated in a one-to-one careers' session in school.
96. 2,255 and 2,050 individuals accessed SDS' universal face-to-face service in the North-east and South of Scotland respectively in 2021-22.

Conclusion

97. This report summarises the high-level findings from the Regional Tertiary Provision Pathfinders *Data and Analysis* workstream, which aims to develop the evidence-base underpinning the Regional Pathfinders. It presents only the highlights from a number of distinct pieces of research, each of which presents a stand-alone contribution to this work.
98. The *Data and Analysis* workstream supports the Pathfinders project by providing insight into each of the Pathfinders regions, the North-east and the South of Scotland, and the role and place of tertiary institutions therein. It provides some preliminary answers to the questions: *what is the current and future **demand** for skills in each region?; what does **education and skills provision** look like in each region, and how has this changed over time?; and what **opportunities into and through education** are there in each region?*.
99. In answering these questions we can start to explore, among other things, how provision matches up against current and projected demand, how learners progress into and through education in the regions, how institutions respond to these drivers, and how this information can be used, independently and as a whole, to improve the process of provision planning at the service of an education and skills system that is responsive, integrated and supportive of economic recovery and inclusive growth.