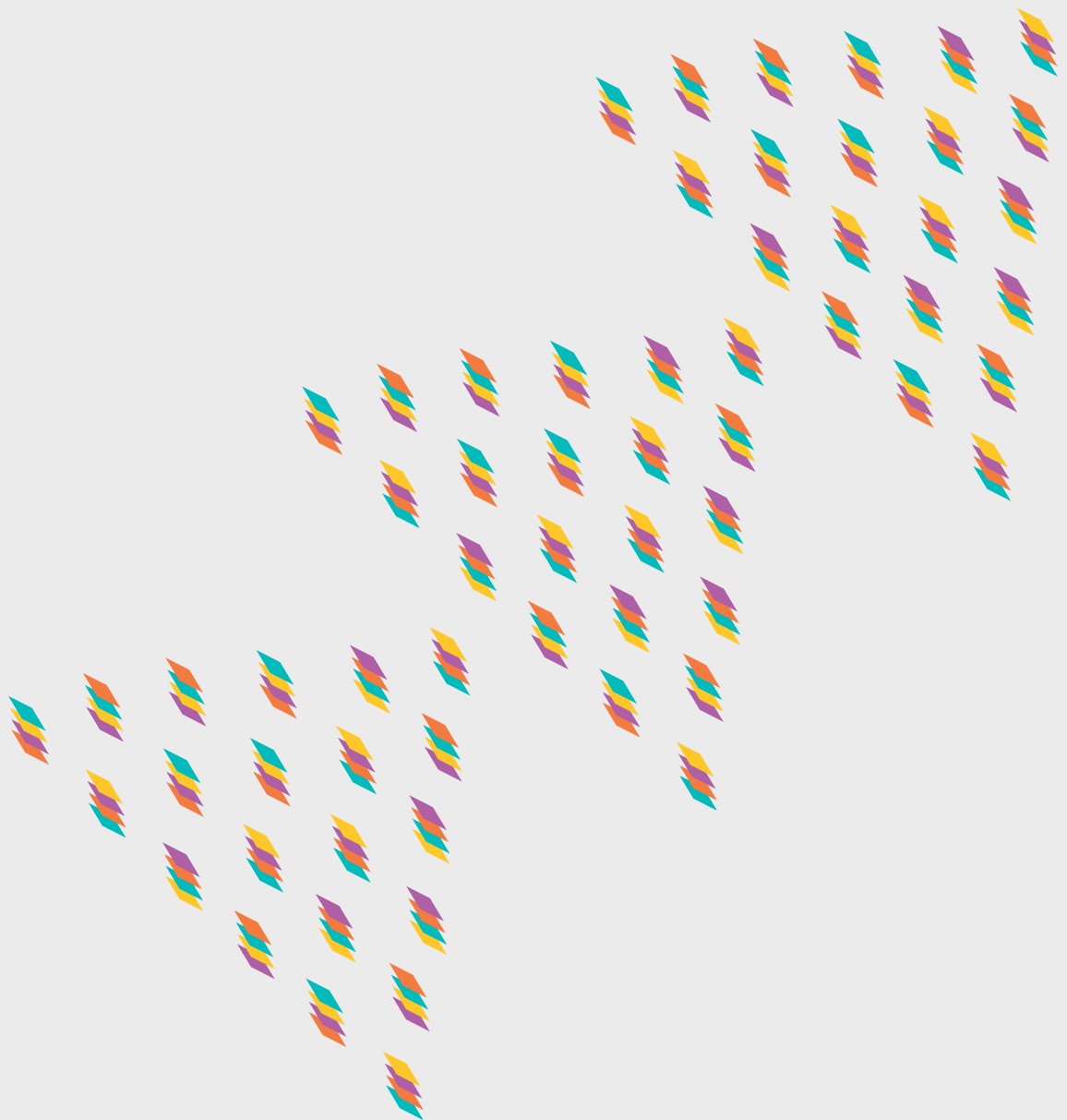


# HIGHER EDUCATION IN ENGLAND: PROVISION, SKILLS AND GRADUATES



Universities UK

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## **PREFACE: UNIVERSITIES UK REVIEW OF SKILLS**

This paper provides background evidence and identifies questions to be explored in the Review of Skills being conducted by Universities UK in autumn 2016.

As this paper will go on to describe, it is clear that graduates develop many skills that are valued by employers, and employment rates for graduates remain high. There are, however, challenges for the higher education sector. It must continue to work with employers to ensure that skills gaps are addressed, that skills mismatches are reduced, that graduates continue to meet employers' needs, and that opportunities available to all students and graduates to develop skills and improve employability are enhanced.

The UUK Review of Skills, through a survey of providers and a wider call for evidence, especially from employers, will aim to get a better understanding of what universities and employers are doing to address these challenges, what works best for which employers and students, and what universities and employers will need to do in the future.

## INTRODUCTION

During 2014–15 the UK higher education sector catered to over two million students who hailed from approximately 200 countries and studied over 90 different types of courses, across 1,000+ different detailed subjects. These students attended nearly 800 institutions, which can be categorised into three broad types: higher education institutions, which are traditionally universities, further education colleges (FECs) and alternative providers (APs). There is also increasing complexity in the policy environments and priorities for higher education in the different nations of the UK. It is, therefore, a sector with an immensely diverse set of students, practices, aims, outcomes and challenges.

There are various sets of data available on the different parts of the sector in the different parts of the UK relating to types of programmes, level and mode of study and outcomes of these programmes in terms of skills and employment. In an environment where the nature of funding for teaching is changing, especially in England, there is an increased focus on value and the link between qualifications and positive outcomes for graduates, for example with the development of the Teaching Excellence Framework in England.

This paper provides a high-level summary of higher education provision while linking, at a rather aggregate level, this provision to graduates' skills development and destinations, such as further study, employment and earnings patterns. While it discusses what we know about the links between qualification, skills development and graduate outcomes it also seeks to pinpoint what we don't know and where there are pertinent – but realistic – avenues for further investigation.

In this paper, the term 'higher education sector' refers to all higher education provision, be it at a traditional university (which we often refer to as a higher education institution), an FEC, or an AP, regardless of whether they are non-profit or profit. Higher education provision itself refers to any course that is designated as Level4+ on the Quality Assurance Agency's Framework for Higher Education Qualifications system.

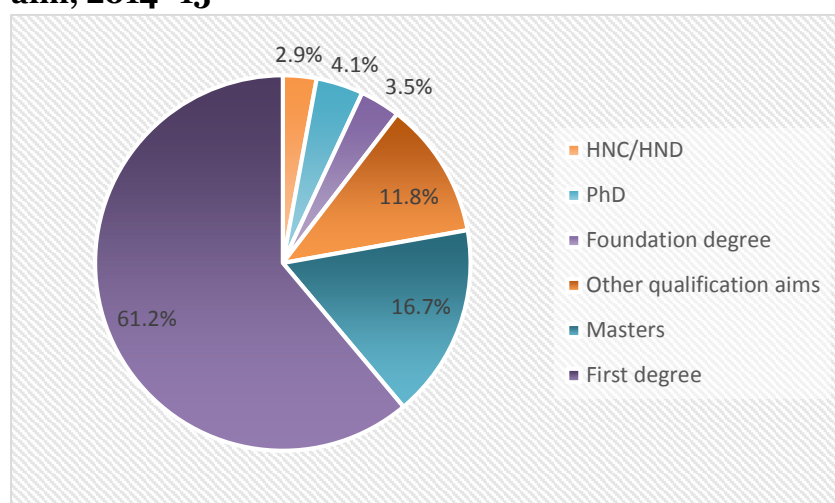
Where possible, we combine data on all three types of higher education providers, though due to the limited nature of FEC and AP data we often focus on traditional universities. This is particularly the case for graduate outcomes data, where unless otherwise noted, Destinations of Leavers from Higher Education (DLHE) data, for universities only, is used. As a result of limited FEC and AP data, we also focus on those institutions located within England in chapter 1, on provision. An added dimension deserving of further consideration and analysis is the regional and local dimension of provision, skills needs and labour markets; this analysis has focused on the data for England as a whole.

# 1. DIVERSITY OF HIGHER EDUCATION PROVISION

## Level of study

In 2014–15 there were 2.02 million students studying on higher education-level courses at English institutions. The vast majority of these students (61%) were on First degree courses, though as many as 337,870 (17%) were studying for Master’s degrees, 82,140 (4%) PhDs, 70,297 (3%) Foundation degrees<sup>1</sup>, 31,973 (2%) Higher National Certificates (HNCs) and 26,600 (1%) Higher National Diplomas (HNDs)<sup>2</sup>; 238,368 (12%) were studying for other types of qualifications, such as an award or diploma.

**Figure 1: Students on higher education-level courses, by qualification aim, 2014–15**



Source: HESA Student Record 2014–15; SFA Individualised Learner Record 2014–15, [HESA Alternative Providers Experimental Statistical First Release, 2014–15](#)

At first glance, the high proportion of students studying for qualifications classified as ‘other’ is somewhat surprising. Digging deeper, this appears to reflect the high level of continuing professional development (CPD) that universities provide, excluding bespoke courses provided exclusively to an employer. In fact, within universities, most study that is classified as an ‘other’ qualification aim is done part time (78%) and in subjects allied to medicine, and education and training (32% subjects allied to medicine, 25% education and training).<sup>3</sup>

<sup>1</sup> Foundation Degrees were designed to provide both the skills and theoretical knowledge for a specific occupation, such that graduates could then go on into employment while still having the opportunity to complete a First degree at a later time. However, HESA statistics indicate that a majority of Foundation degree students continue on to a First degree immediately: according to the 2014–15 Destinations of Leavers from Higher Education (DLHE), 45% of Foundation degree graduates were in further study six months after completing their course, with an additional 19% combining work and further study.

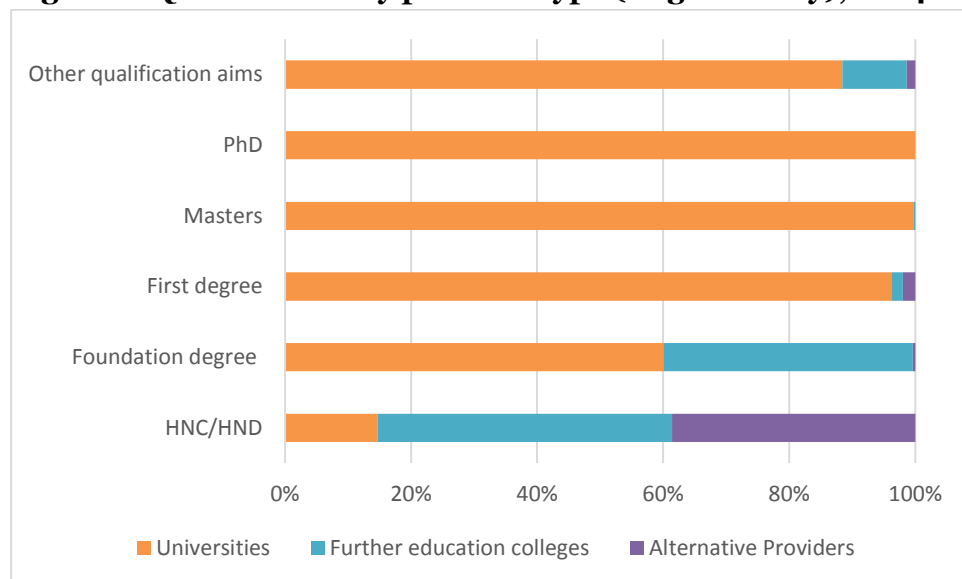
<sup>2</sup> Often, Foundation degrees, HNDs and HNCs are combined into a single category, ‘Other undergraduate’, though sometimes this category only includes HNCs and HNDs. There are, however, differences between the three: HNCs are Level 4 courses that take a year to complete on a full-time basis (two years part time); HNDs are Level 5 courses that typically require two full-time years, after which many students add a third ‘top-up’ year into order to achieve a First degree; Foundation degrees are also a Level 5, two-year course with a top-up option, although unlike HNDs, they do have (non-honours) degree status.

<sup>3</sup> Looking at those studying for other qualification aims in subjects allied to medicine, we see that nearly three-quarters are on courses equivalent to Level 6 or 7 (First or Master’s degree, respectively); 83% of

## Place of study

As far as the available data tells us, the lion's share of higher education-level study is conducted at traditional universities: 92.5%. However, over 500 FECs provide higher education-level courses and 63 APs deliver designated undergraduate courses.<sup>4</sup> While 100% of PhDs, 99% of Master's degrees and 96% of First degrees are provided by universities, FECs and APs provide proportionally more HNCs/HNDs and Foundation Degrees.

**Figure 2: Qualification by provider type (England only), 2014–15**



Source: HESA Student Record 2014–15; SFA Individualised Learner Record 2014–15, [HESA Alternative Providers Experimental Statistical First Release, 2014–15](#)

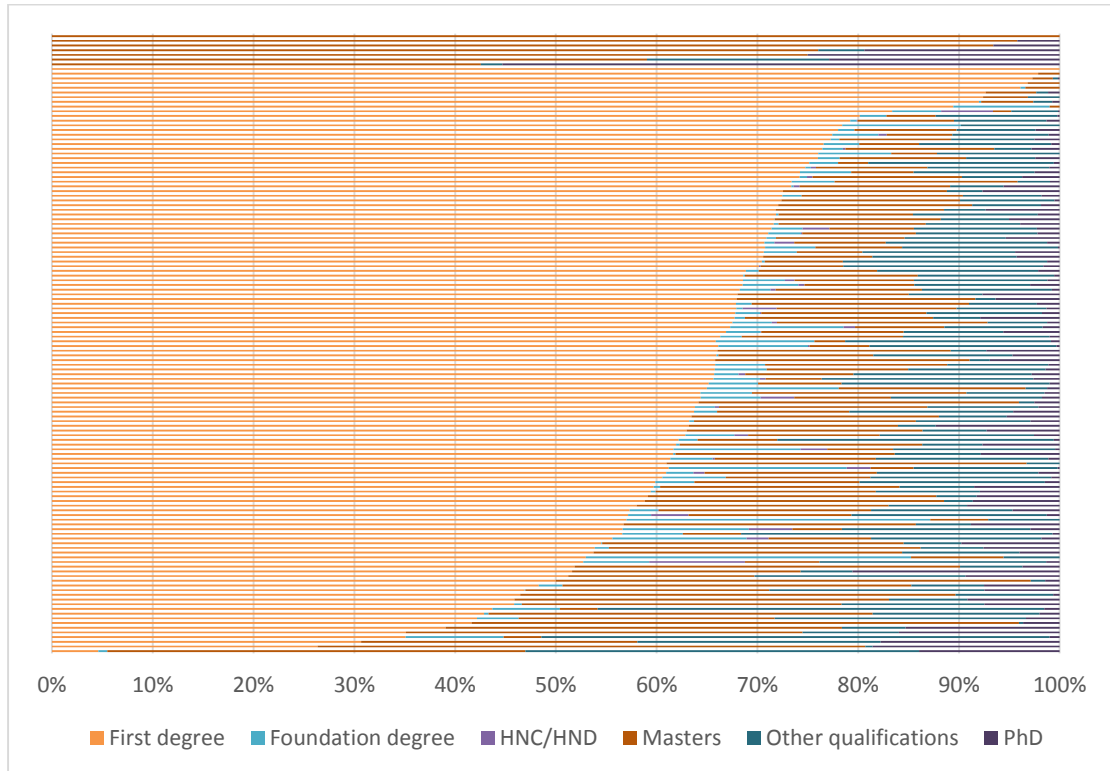
Focusing exclusively on universities, for which we have data, we see a high level of diversity in the levels of study available at different providers; for example, some institutions only offer courses at First degree, Master's and PhD-level, while at others, over 40% of higher education provision is in HNCs, HNDs and Foundation degrees.

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those studying for other qualification aims in education and training are doing so at the equivalent to Master's level. In total, 70% of other qualifications aims are equivalent to Level 6+ and 30% Levels 4 (equivalent to an HNC) and Level 5 (HND, Foundation degree).

<sup>4</sup> HESA defines APs as 'higher education (HE) providers who do not receive recurrent funding from the Higher Education Funding Council for England (HEFCE) or other public bodies and who are not further education (FE) colleges.' However, many APs provide designated courses, for which eligible students can access Student Loans Company loans and grants. In order to provide designated courses the institution must meet government baselines for quality, academic performance, course eligibility, financial sustainability, management and governance.

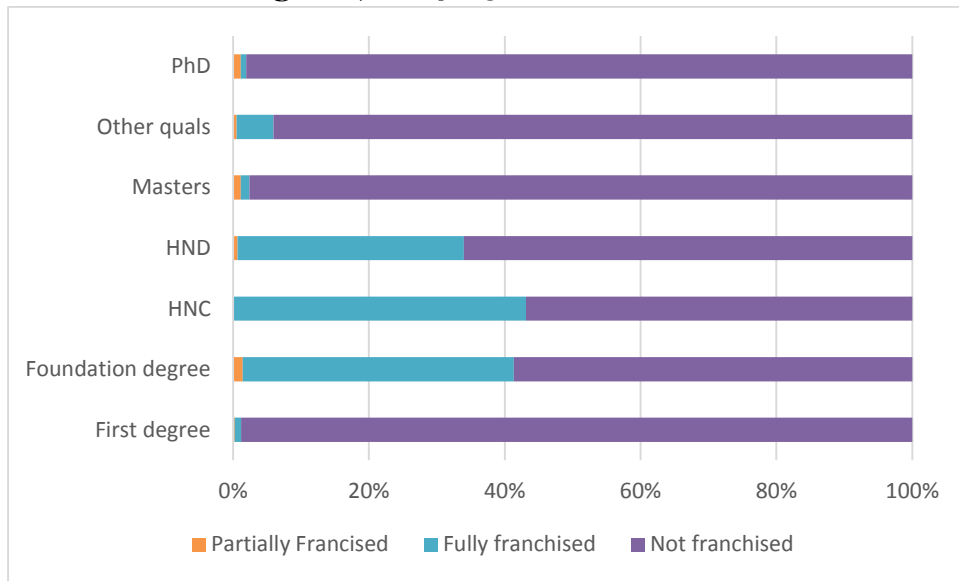
**Figure 3: Mix of course aims, universities only, 2014–15**



Source: HESA Student Record 2014–15

As well as considering the different types of provision delivered by different providers, some higher education is delivered in a range of partnerships between higher education institutions, further education colleges and alternative providers. These collaborations are often at a regional and local level and can offer flexible and helpful ways of meeting local skills needs. Figure 4 below shows the percentage of students registered at universities and taught at FECs; this occurs at approximately 130 universities and mostly on HNC/HND and Foundation degree courses.

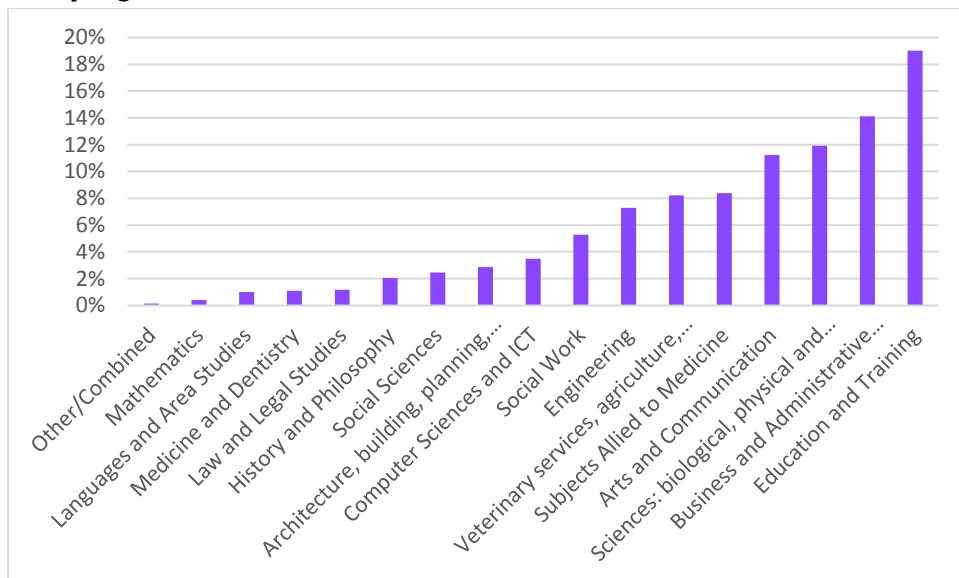
**Figure 4: Franchised provision as a percentage of students registered at universities in England, 2014–15**



Source: HESA Student Record 2014–15

Franchising occurs across a number of subjects, with 19% of all franchised provision (all levels of study) taking place in education and training, 14% in business and administrative studies, 12% in physical and biological sciences and 11% in arts and communication.

**Figure 5: Partially or fully franchised provision by subject (in England), 2014–15**



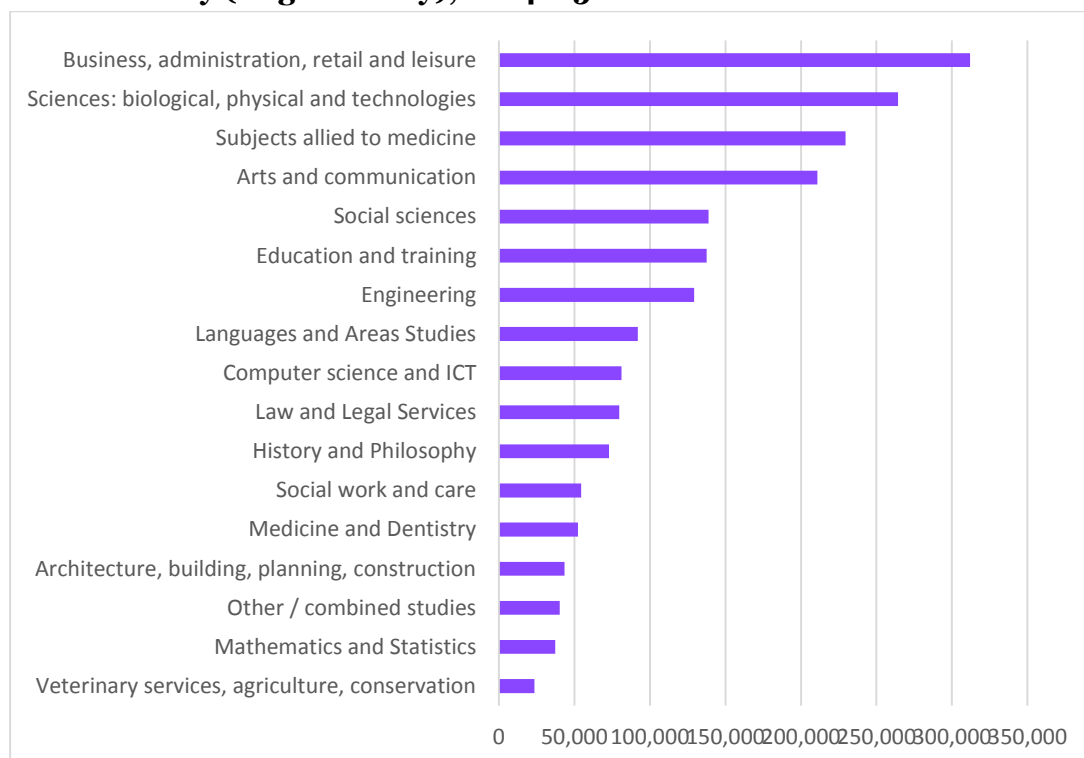
Source: HESA Student Record 2014–15



## Subject of study<sup>5</sup>

Across all types of higher education-providers – universities, FECs and APs – and all qualifications, the highest percentage of students (15.6%) are on business and administrative studies courses, followed by physical and biological sciences and technologies (13.2%) and subjects allied to medicine (11.5%).

**Figure 6: Higher education students by subject, all types of providers and levels of study (England only), 2014–15**



Source: HESA Student Record 2014–15; SFA Individualised Learner Record 2014–15, [HESA Alternative Providers Experimental Statistical First Release, 2014–15](#)

Of course, different providers – and types of providers – may specialise in particular subjects: within APs, there is a particularly high concentration of business and administrative students (54.3% of all designated undergraduate courses), followed by arts and communication (16.5%) at law and legal studies (9.2%).

At FECs, business, administration, retail and leisure are also the most popular courses, although to a lesser extent (20.6% of all higher education-level study at FECs), followed by arts and communication (19.5%), and engineering (15.2%).

Universities, which drive overall sector patterns due to their size, reflect a slightly more distributed subject mix, with the highest proportion of students on either business or science-related courses (14.3 and 14%, respectively).

<sup>5</sup> Data for universities and higher education designated courses in APs is collected by the Higher Education Statistics Agency (HESA) while the Skills Funding Agency (SFA) collects data from FECs. Subject titles between HESA and the SFA differ, so the grouping that appears in this section is a bespoke one designed by an analysis of the detailed principal subjects included in both datasets. Other sections of this paper that focus only on universities will use HESA's traditional subject groups.

**Table 1: Subject of study by provider type (England only), 2014–15**

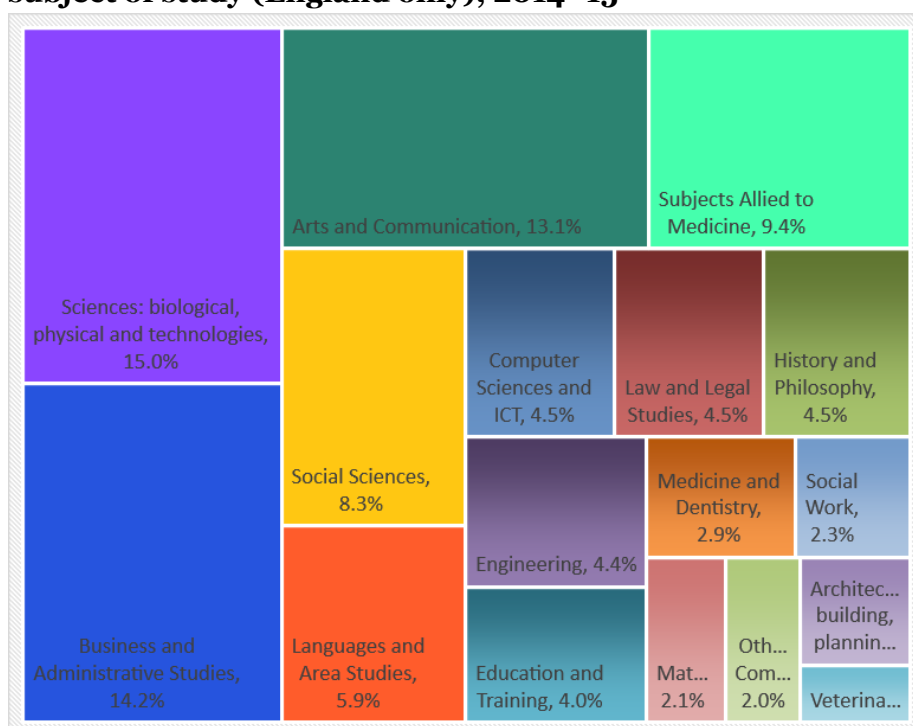
	All levels			All
	Universities	FECs	APs	
<b>Business, administration, retail and leisure</b>	14.3%	20.6%	54.3%	15.6%
<b>Sciences: biological, physical and technologies</b>	14.0%	3.3%	0.8%	13.2%
<b>Subjects allied to medicine</b>	12.2%	1.6%	1.5%	11.5%
<b>Arts and communication</b>	10.0%	19.5%	16.5%	10.5%
<b>Social sciences</b>	7.1%	1.4%	9.2%	6.9%
<b>Education and training</b>	7.1%	5.8%	0.5%	6.9%
<b>Engineering</b>	6.2%	15.2%	1.7%	6.5%
<b>Languages and areas studies</b>	4.9%	0.6%	0.0%	4.6%
<b>Computer science and ICT</b>	4.0%	5.7%	3.5%	4.1%
<b>Law and legal services</b>	4.0%	1.1%	9.7%	4.0%
<b>History and philosophy</b>	3.8%	0.5%	2.3%	3.6%
<b>Social work and care</b>	2.3%	14.4%	0.0%	2.7%
<b>Medicine and dentistry</b>	2.8%	0.1%	0.0%	2.6%
<b>Architecture, building, planning, construction</b>	2.1%	5.3%	0.0%	2.2%
<b>Other/combined studies</b>	2.2%	0.1%	0.0%	2.0%
<b>Mathematics and statistics</b>	2.0%	0.3%	0.0%	1.9%
<b>Veterinary services, agriculture, conservation</b>	1.1%	4.7%	0.0%	1.2%
<b>Total</b>	100%	100%	100%	100%

Source: HESA Student Record 2014–15; SFA Individualised Learner Record 2014–15, [HESA Alternative Providers Experimental Statistical First Release, 2014–15](#)

While the popularity of particular subjects varies by type of institution, it also varies by qualification. At FECs and universities combined<sup>6</sup>, the highest proportion of First degree students are on courses related to physical sciences, biological sciences and technologies (15%; 181,461 students in all years of study), followed by business and administrative-related courses (14.2%; 172,488), and arts and communication (13.1%; 159,282).

<sup>6</sup> Subject-level data for APs is not disaggregated by qualification, so they are excluded from this section.

**Figure 7: First degree study at universities and FECs (combined) by subject of study (England only), 2014–15**



Source: HESA Student Record 2014–15; SFA Individualised Learner Record 2014–15

At the Foundation Degree level, the top three courses are business and administration (19.5%, 13,629), education and training (13.8%; 9,684), and arts and communication (13.2%; 9,230).

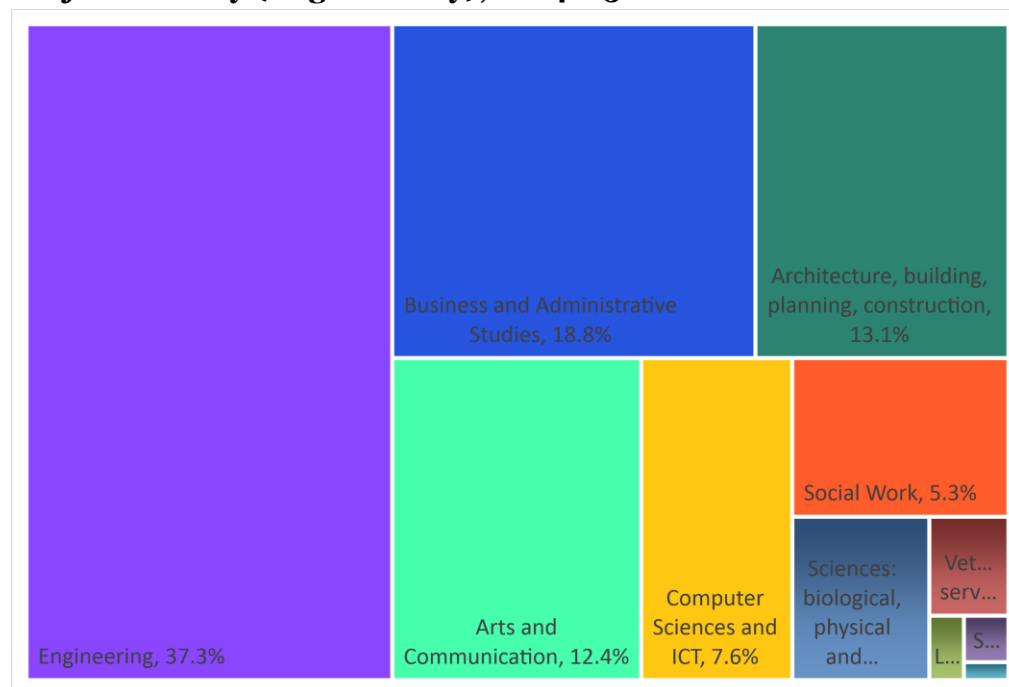
**Figure 8: Foundation degree study at universities and FECs (combined) by subject of study (England only), 2014–15**



Source: HESA Student Record 2014–15; SFA Individualised Learner Record 2014–15

HNCs and HNDs, which are offered in fewer subject areas, tend to be concentrated in engineering (37.3%; 13,357), business and administrative studies (18.8%; 6,747) and architecture, building, planning and construction (13.1%; 4,700).

**Figure 9: HNC/HND study at universities and FECs (combined) by subject of study (England only), 2014–15**



Source: HESA Student Record 2014–15; SFA Individualised Learner Record 2014–15

### ‘Vocational provision’

There is no clear definition of what the term ‘vocational education’ includes; many of the transferable skills, such as analysis, problem-solving and communication, that are provided through higher education allow one to develop careers in an array of different vocations.

Many higher education courses also have strong links with professional bodies and have to meet rigorous requirements laid down by a particular profession that graduates will be employed in. If, we consider a definition of vocational education as being designed to offer a pathway to a specific career or profession – by deploying specific, technical skills used in that career – then we could, from the principal subjects listed within HESA’s Student Record<sup>7</sup> and the Skills Funding Agency’s Individualised Learner Record<sup>8</sup>, conservatively identify nine possible areas of study:

1. Social work and care
2. Veterinary, agriculture and environment
3. Education and training
4. Computer science and ICT
5. Subjects allied to medicine
6. Engineering
7. Architecture, building and planning

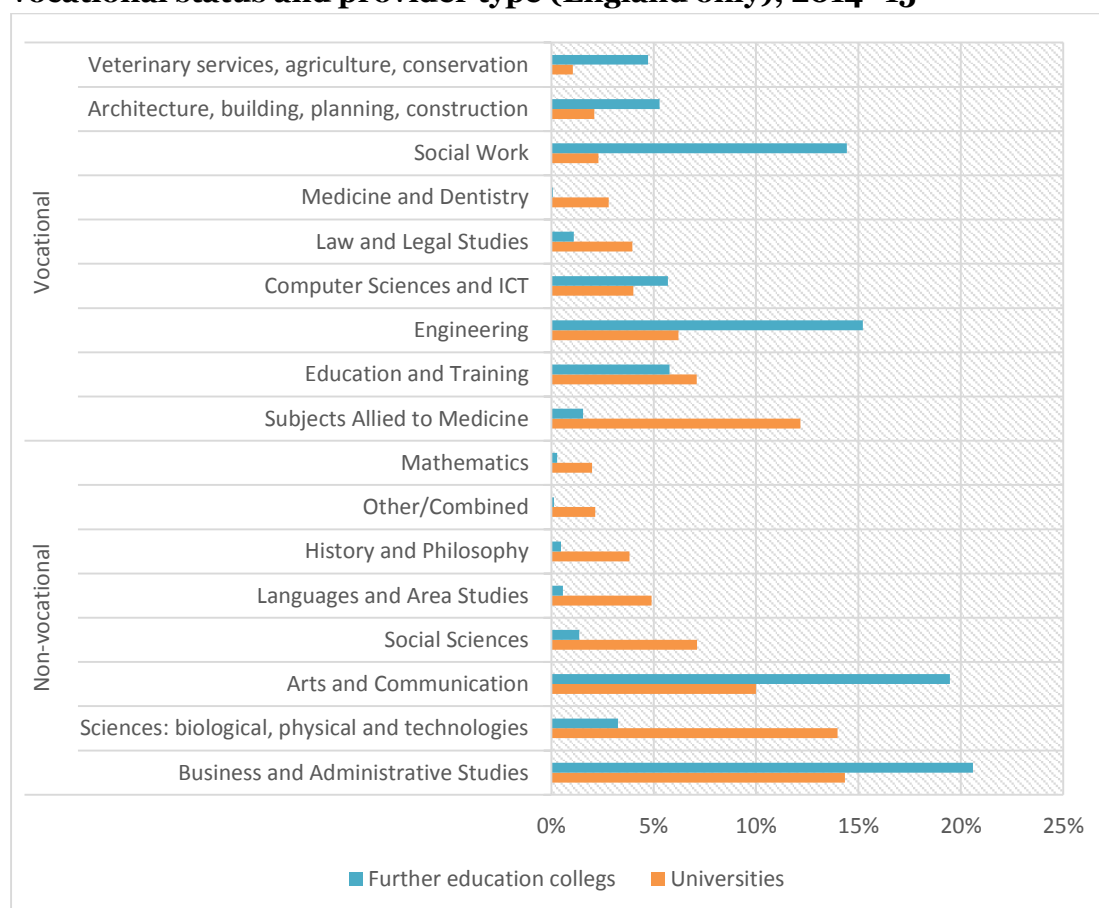
<sup>7</sup> Relevant to those courses undertaken

<sup>8</sup> Relevant to those courses undertaken at FECs

- 8. Medicine and dentistry
- 9. Law and legal studies

Across all levels of study, nearly 42% of provision at universities is in subject areas that, according to the above definition, we would classify as vocational, including over 12% of students on courses in subjects allied to medicine, 7% in education and training and 6% in engineering. At FECs, 54% of higher education-level courses (those courses designated Level 4+) would be classified as vocational, with 15% of higher education-level study at FECs in engineering, 15% in social work and 6% in education. At universities, business and sciences are the largest non-vocational subjects (14% each), whereas at FECs, business and arts/communication are the largest non-vocational subjects (21% and 20%, respectively).<sup>9</sup>

**Figure 10: Percentage of higher education-level students on subjects by vocational status and provider type (England only), 2014–15**



Source: HESA Student Record 2014–15; SFA Individualised Learner Record 2014–15

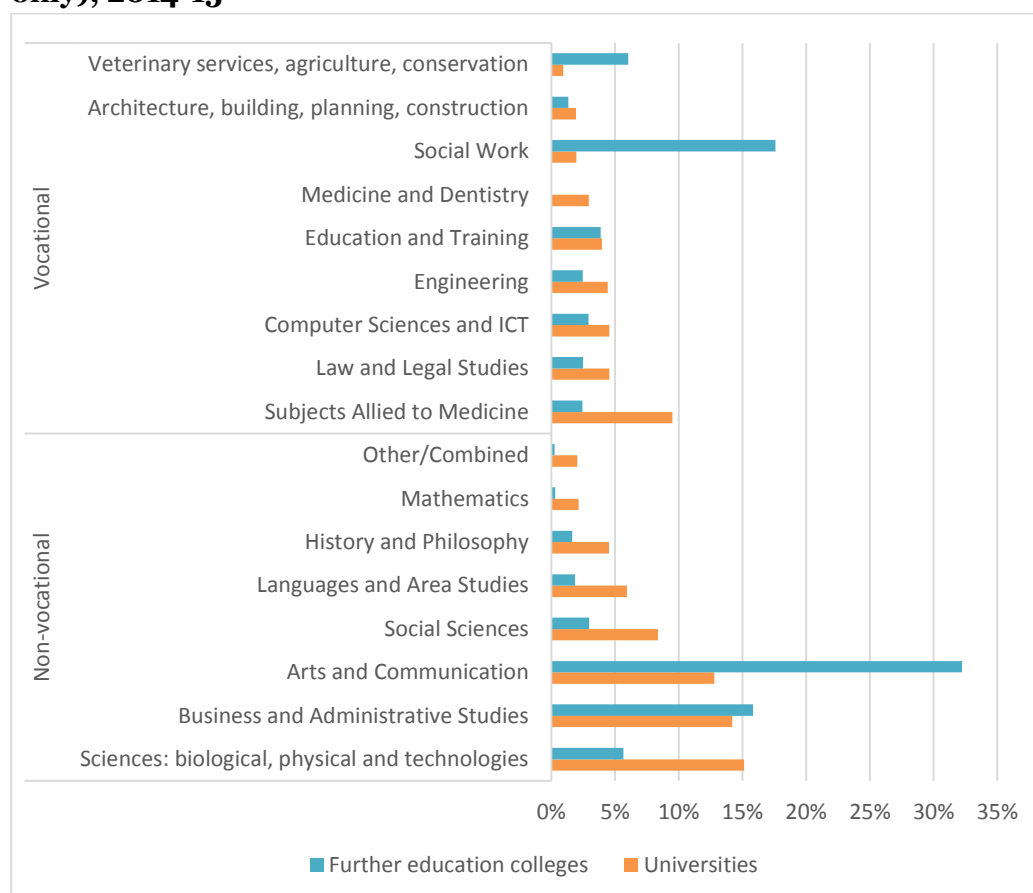
When we focus specifically on first degrees, differences in the proportion of vocational study provided by each type of institution narrow: at FECs, 39% of all First degree study is in subjects that would be classified as vocational under the above definition; at universities the figure is 35%.

<sup>9</sup> This analysis excludes courses undertaken at APs because disaggregated subject codes are not available, which limits the ability to transform them into our bespoke HEI/FEC consistent subject grouping.

The most popular vocational subjects at universities include subjects allied to medicine (10% of all First degrees), law (5%) and computer science (5%). At FECs vocational First degrees are dominated by social work and care (18%), followed by veterinary services, agriculture and conservation (6%) and education (4%).

Focusing specifically on non-vocational subjects, sciences and business/administration are the most popular First degree subjects within universities (15% and 14% of all First degree study, respectively), whereas arts and communication (32%) are by far the most popular First degree subjects (vocational or non-vocational) at FECs.

**Figure 11: Percentage of First degree subjects by provider type (England only), 2014-15**



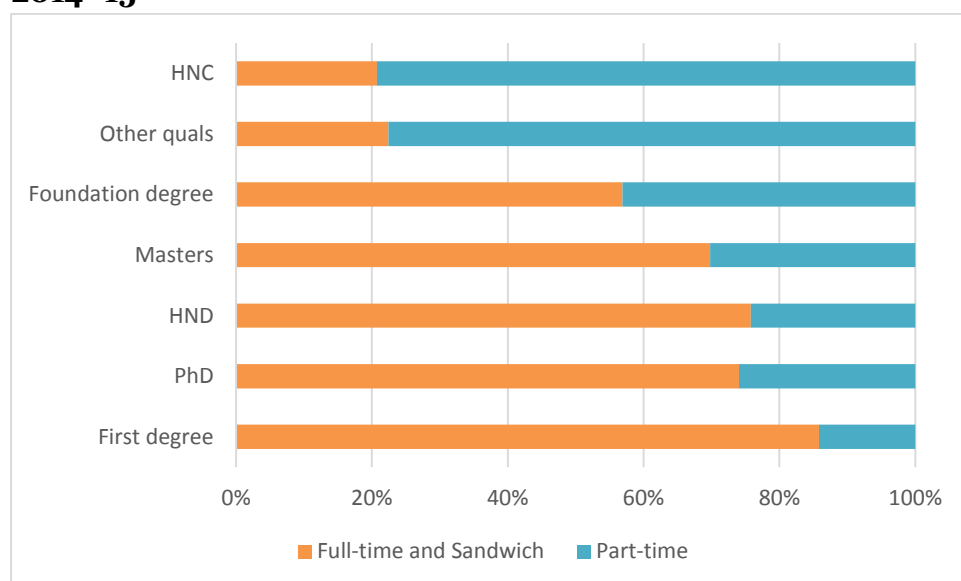
Source: HESA Student Record 2014–15; SFA Individualised Learner Record 2014–15

### Mode of study

Overall, a majority of students on higher education-level courses study full time; data for APs and universities<sup>10</sup> indicates that during 2014–15, 68% of higher education-level students were studying full time, 25% part time and 7% on sandwich years. Of course, this tends to vary by subject aim; looking exclusively at universities, we see that while, for example, First degree study is mainly done full time (75.2%), HNCs are largely completed on a part-time basis (79.2%) while Master’s degrees are a mix between the two (67% full time, 30% part time).

<sup>10</sup> We do not have robust mode of study data for FECs.

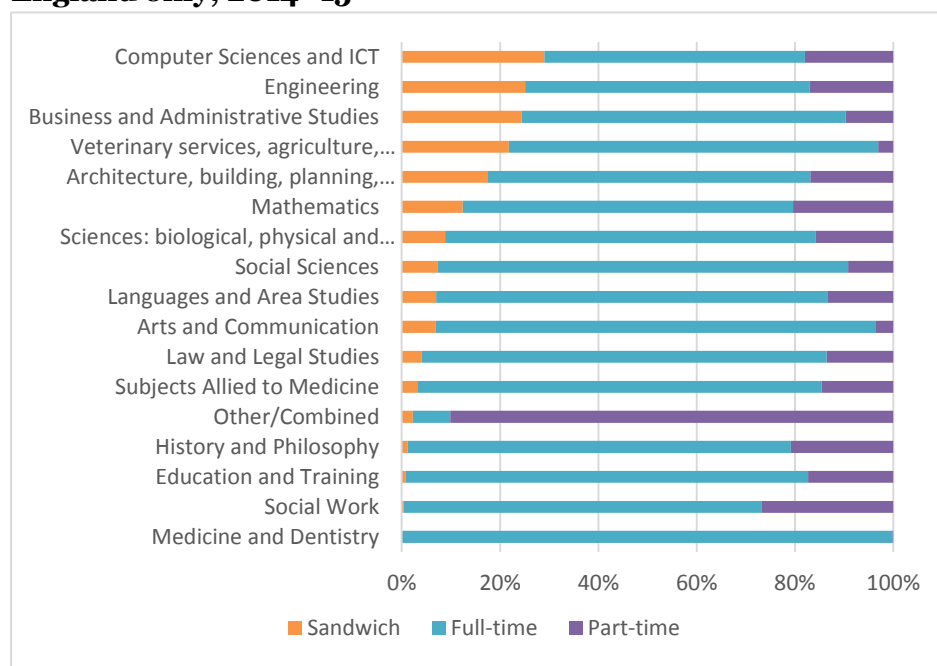
**Figure 12: Mode of study by course aim, universities in England only, 2014–15**



Source: HESA Student Record 2014–15

A number of universities offer ‘sandwich years’, a year of formal work experience built into the course. The proportion of First degree students taking a sandwich year at universities appears to be on the rise: from 9% in 2010–11 to 11% in 2014–15. During 2014–15, 126,135 First degree students were on a sandwich year. The practice appears most popular among computer science, engineering and business students (29%, 25.1%, 24.4%) though it is worth noting that the practice also exists across degree subjects whether or not they have been perceived as ‘vocational’, such as languages and area studies (6.9%) and social sciences (7.3%).

**Figure 13: Mode of study by subject, First degrees, universities in England only, 2014–15**



Source: HESA Student Record 2014–15

## **Conclusion**

Higher education in England is incredibly diverse; while 60% of study is done at the First degree level, the remaining 40% is spread over a number of qualifications, from Level 4 awards and diplomas to PhDs. Higher education providers are a diverse group themselves: while some specialise in particular qualifications, others display a more evenly distributed mix.

To speak of a 'typical graduate' or a 'typical university' belies not just the diversity of provision set out above but also the diversity of students and their higher education experience, the activities they have taken part in and the services they have benefited from. This presents challenges for both policy makers and providers when seeking to address the legitimate desire to explain, evidence and provide value, which can often be expressed in terms of generic expectations or entitlements, while at the same time translating this into meaningful experiences and outcomes for the wide diversity of students which implies careful tailoring of interventions and support.

In the next chapter we consider the data on skills development, which skills are developed by graduates, how well they are developed and where they are best developed.

## **2. HIGHER EDUCATION PROVISION AND SKILLS DEVELOPMENT: GRADUATE PERSPECTIVES**

This chapter attempts to link higher education participation, as well as qualification and subjects, with graduates' own perceptions of skills development. While an analysis of the data on qualifications, subjects and modes of study can tell us about the depth and body of knowledge that students acquire, it tells us less about what skills we might expect them to develop during their higher education experience, ways to develop these skills and whether or not these skills match the needs of employers.

Each higher education course will have in its programme specifications a description of both subject-specific knowledge (eg a particular understanding of engineering principles, or a grasp of political theory) and transferable skills (eg communication, analysis, self-management) that will be developed as part of the lectures, reading, classwork and assessment included in their course. These will be developed in the context of subject benchmark statements, professional and regulatory body requirements and the wider quality code of practice.

Transferable skills, or 'employability skills', are those which will help graduates not just in their transition from the classroom to the workplace but throughout their entire career. Frequently referred to but quite broadly defined, our brief analysis of research of employer and graduate skill surveys found 49 different skills: from analysis, to enterprise and creativity, communication, teamwork, to problem solving



and using IT effectively<sup>11</sup> (see the annexe for a complete list). The skills developed through higher education should equip students with skills that will be relevant throughout their career but also in different contexts such as volunteering and charity work, or in setting up their own businesses and social enterprises.

The paragraphs below illustrate the extent to which graduates believe their experience helped them to develop a number of these transferable and work-related skills. To a certain extent, aggregating these views at a high level can prove useful: evidence suggests that in a knowledge economy, employers increasingly expect all highly-skilled workers to have high-level communication, problem-solving, ICT, team working and influencing skills<sup>12</sup>

As far as the data tell us, those with a background in higher education are more likely to enter the labour force with these skills and capacities, although there are challenges in identifying the best mechanisms and settings in which students can develop and hone them.

### **Graduate perceptions of skills development**

The Longitudinal Destinations of Leavers from Higher Education (DLHE) survey, which asks university leavers what they are doing 40 months after graduation, also prompts them to reflect on their higher education experience, the skills they feel it helped them develop and the factors that helped them attain to their current job<sup>13</sup>. When asked 40 months after graduation to reflect on how their higher education experience developed the skills set out below in Figure 14, a majority of all respondents reported that to a great or to some extent, higher education developed their work-related capacity to innovate, problem solve, communicate effectively, make good decisions, work effectively with others, and take initiative and personal responsibility. Note that the DLHE data refers specifically to university graduates.

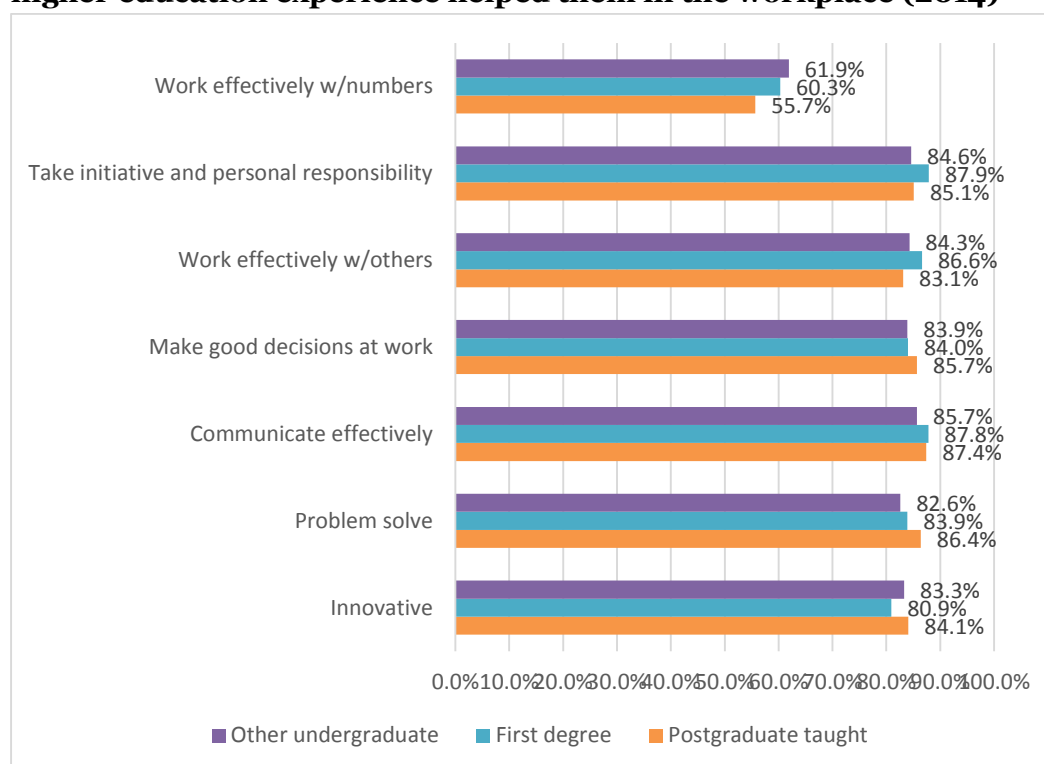
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<sup>11</sup> [CBI/UUK \(2009\)](#); [CBI/NUS \(2011\)](#); [CBI/Pearson \(2016\)](#); [UKCES \(2016\)](#); [HEA Employability Framework](#); [UKCES \(2010\)](#); [World Economic Forum \(2016\)](#); [Greatbatch and Lewis \(2007\)](#); [Council for Industry and Higher Education \(2008\)](#); [Edge Foundation \(2011\)](#)

<sup>12</sup> See for example [UKCES 2014](#) p. 20

<sup>13</sup> Respondents are from universities only.

**Figure 14: Percentage of 2010–11 UK graduates reporting that their higher education experience helped them in the workplace (2014)**



Source: HESA Longitudinal Destinations of Leavers from Higher Education (2010–11)

Across all levels of study surveyed (taught postgraduate, First degree and other undergraduate at universities only) a majority of respondents stated that their higher education experience helped develop all of these skills and capacities to a great extent or to some extent.<sup>14</sup>

While a majority of all respondents from all qualifications reported that higher education developed their numeracy skills, this was the lowest rated skill overall. This is likely driven by courses' different aims, which becomes apparent when looking at variance by subject aim. Postgraduates rated good decision making highest, as compared to First degree graduates, the largest proportion of whom identified the capacity to take initiative and personal responsibility, and other undergraduates, who cited the ability to communicate effectively. However, the overall differences in perceived skills development between qualifications are quite minimal.

There is some predictable variation by subject. For example, just 32% of language graduates found that higher education developed their capacity to work effectively with numbers, as compared to 94% of mathematics graduates. However, there are also striking similarities across the board. Table 2 is based on the same 2014 survey of 2010–11 graduates referred to in Figure 14; it focuses on First degree graduates and breaks their answers down to subject level, with columns denoting the proportion of respondents who felt that higher education helped them develop particular skills to some/a great extent.

<sup>14</sup> Respondents are from universities only.

The highest rated skills for each subject are highlighted in purple and lowest rated in blue. Note the predominance of maths as a lowest-rated skill, across numerous subjects, including many STEM-related subjects as well as the predominance of highly-rated communication skills, teamwork and personal responsibility.

**Table 2: Skills reported to have developed during higher education; all levels, university graduates domiciled in the UK only**

	Innovative	Problem solve	Communicate effectively	Make good decisions at work	Work effectively w/others	Take initiative and personal responsibility in your work	Work effectively w/numbers
Medicine & dentistry	87%	94%	95%	96%	94%	93%	75%
Subjects allied to medicine	90%	91%	93%	93%	93%	92%	73%
Biological sciences	80%	85%	89%	85%	88%	89%	74%
Veterinary science	89%	96%	96%	98%	96%	94%	78%
Agriculture & related subjects	84%	84%	87%	85%	87%	89%	68%
Physical sciences	82%	89%	87%	86%	88%	89%	83%
Mathematical sciences	74%	90%	75%	84%	76%	85%	94%
Computer science	79%	85%	79%	81%	82%	83%	69%
Engineering & technology	84%	90%	85%	87%	86%	87%	84%
Architecture, building & planning	84%	86%	86%	84%	86%	86%	68%
Social studies	79%	84%	88%	84%	85%	86%	53%
Law	75%	83%	87%	83%	80%	84%	40%
Business & administrative studies	80%	85%	87%	85%	88%	86%	72%
Mass communications & documentation	82%	78%	87%	81%	87%	86%	38%
Languages	75%	76%	89%	75%	78%	84%	25%
Historical & philosophical studies	75%	78%	85%	79%	77%	83%	32%
Creative arts & design	83%	79%	85%	79%	84%	86%	35%
Education	90%	87%	90%	89%	89%	89%	64%
Combined	65%	66%	72%	68%	62%	66%	47%

Source: HESA Longitudinal Destinations of Leavers from Higher Education (2010–11)

Apart from some expected differences in subject-level skills development (eg numeracy), there does appear to be a fair level of consistency in perceived skills development across qualification aims and subject level, even if the objective sophistication of these skills may vary across these areas.

## **Conclusion**

Overall, graduates appear quite positive when reflecting on the actual skills that they developed during their higher education experience, even if we do not quite know the extent to which they use them, and/or are enabled to use them, in their current job. Also, there appears to be some broad similarities – both positive (communication skills and team working) and negative (the ability to effectively work with numbers) – across a number of diverse subject areas.

We should also bear in mind the dynamic nature of the entire system of university and programme choice, graduate recruitment and career choice. Many jobs do not require a specific subject but value the broader skills graduates develop. Many students do not go into jobs related to the subject they studied either because they choose not to or because the particular jobs aren't available. Also industries such as engineering or construction need a whole variety of graduate skills for the many different roles they provide and many industries need a combination of subjects and skills.

However, such information only seems to raise further questions, such as:

1. Are these the 'right' skills to ask graduates about? Are they critical for determining success in the labour market and are they appropriate for all academic subjects and industries?
2. If they are the 'right' – or at least broadly appropriate – skills and capacities to ask graduates about, where during their higher education experience do graduates feel they were best able to develop them: in the classroom, through work experience programmes, as a result of participation in extracurricular activities such as sports teams or societies?
3. To what extent do employer views of graduate skills match up with graduates' own perceptions? Where there are differences, what drives them and what can be done to alleviate them?

These are, of course, quite daunting questions that elude the scope of this paper but will be considered throughout the course of our review. Many of the issues are inextricably linked to our knowledge – and our perceptions – of graduate destinations, in terms of employment or further study, occupation type and earnings, discussed in the next chapter.

### 3. GRADUATE DESTINATIONS

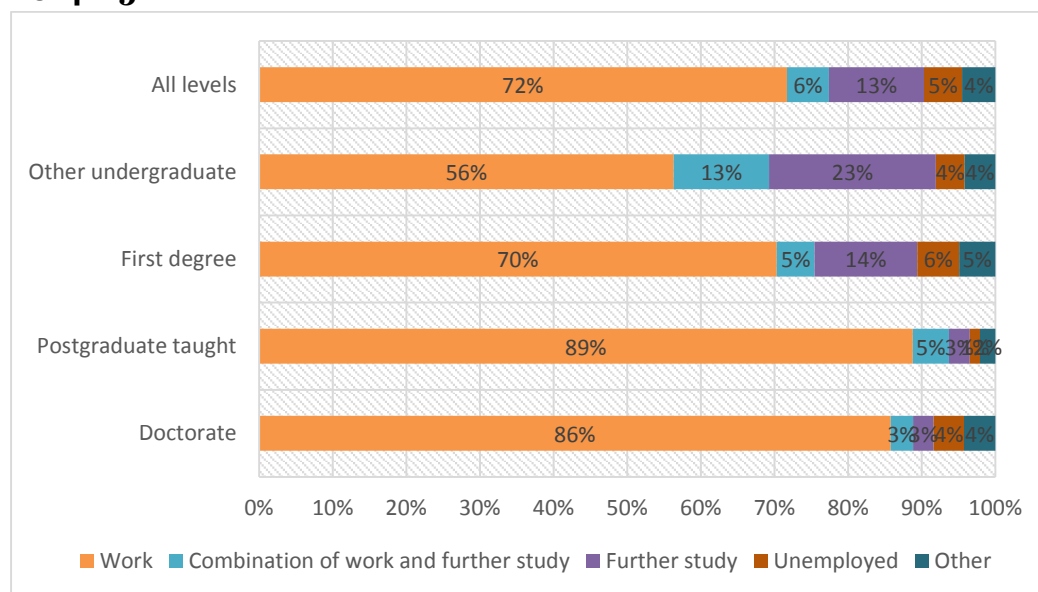
This chapter outlines graduate destinations six and forty months after leaving university. It points to similarities in employment rates – particularly as compared to non-graduates – but also notes differences among graduates in the types of roles and industries they enter into, and the salaries they earn.

While information on university graduates is more robust, at least for the first six months to three years, we have less – and considerably less granular – information on the outcomes of higher education-level qualifiers from further education colleges (FECs) and, especially alternative providers (Aps), where outcomes data is not yet available. As such this section focuses exclusively on graduates from universities.

#### Main destination: six and forty months

Data from the 2014–15 Destinations of Leavers from Higher Education (DLHE) survey, which has a response rate of over 79% (399,345) for graduates living in the UK and EU, tells us that within six months of graduation in 2014–15, 72% of qualifiers from all levels (and from institutions across the entire UK) are in work (68% within the UK and 4% overseas; in addition to this 72%, 6% report to be both working and studying, 19% are in further study (including the 6% who are working and studying), 5% unemployed and 4% doing something else, such as travelling.

**Figure 15: Destinations at six months, EU- and UK-domiciled graduates, 2014–15**



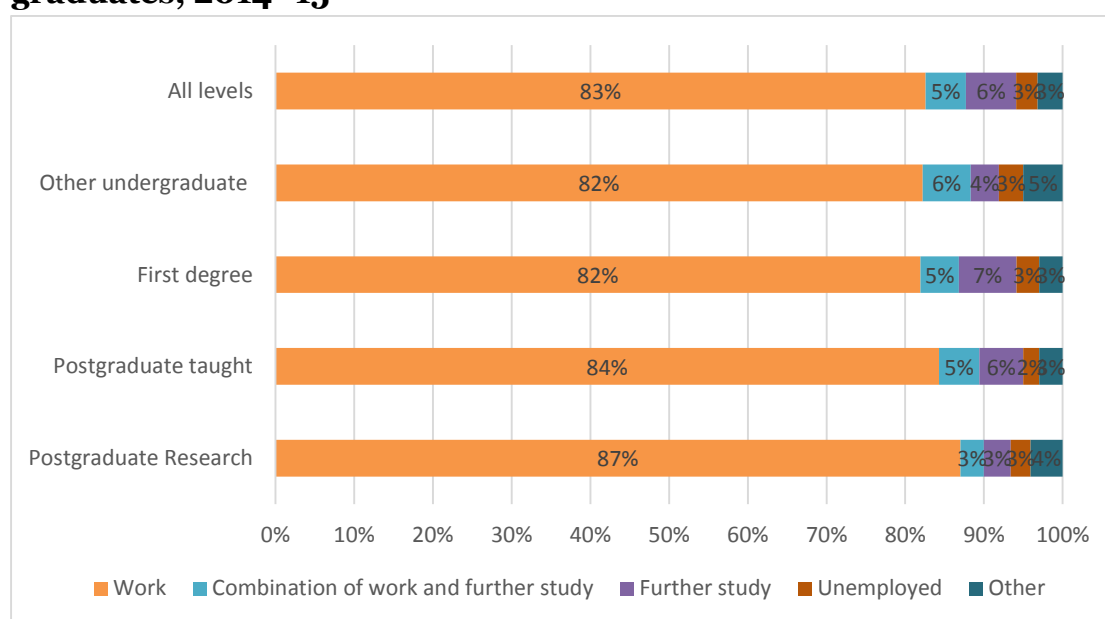
Source: HESA Destinations of Leavers from Higher Education (DLHE), 2014–15

There are of course variations by qualification level. As many as 36% of other undergraduate qualifiers reported that they continued on to further study – potentially taking a ‘top up’ year, which would result in a First degree (Foundation degree and HND students can add a ‘top-up year’ at the end of their course and achieve a First degree). The proportion of First degree graduates going on to further

study within six months of leaving higher education was 19%, followed by taught postgraduate (8%), and PhDs (6%).

As would be expected, employment rates are on the whole higher three years after graduation, as many will have completed further study and/or any post-study transitional arrangements, such as gap years and other time out. Indeed, when asked for their employment status 40 months (3.5 years) after graduation, 83% of 2010–11 qualifiers domiciled in the UK and EU were in work, 11% were in further study (5% were working while studying and 6% in further study alone), 3% were assumed to be unemployed and 3% were not available for employment or had an unknown employment mode.

**Figure 16: Destinations at 40 months, EU- and UK-domiciled graduates, 2014–15**



Source: HESA Longitudinal Destinations of Leavers from Higher Education (2010–11)

Breaking these figures down to qualification, we see an across-the-board increase in the proportion of those who reported being in work; for example, the proportion of First degree graduates in work rose from 70% to 82%, and other undergraduate employment rose from 56% to 82%. Relatedly, the rate of further study (including where combined with work) declined: for First degree graduates this was from 19% to 12% and for other undergraduate from 36% to 10%.

### Employment type: six and forty months

Of those full-time UK-domiciled leavers in work within six months of leaving university, 90.8% of postgraduate leavers were in what HESA calls ‘professional’-level employment, an indicator based on the proportion of graduates in occupations that the Office for National Statistics classifies as being managerial, professional or associate professional occupations.<sup>15</sup> 70.5% of employed First degree graduates were

<sup>15</sup> The Standard Occupational Classification (SOC 2010) system features ten major categories of occupations. HESA terms all occupations that sit within major categories one (managers, directors and

in professional-level employment, as were 60.4% of other undergraduate (including Foundation Degrees, HNDs and HNCs) qualifiers.

While the ‘professional’ employment indicator provides a broad illustration of the types of roles graduates enter into, there are limitations to the occupational categories it is based on. These classifications cannot adjust to the arrival of new occupations, often brought on by technological, social or organisational change, nor can they account for occupations’ skill requirements shifting over time – both of which have produced a rise in the number and proportion of graduate jobs in the UK, according to academic research by [Green and Henseke \(2014\)](#).

Forty months after leaving full-time higher education, 91.8% of 2010–11 postgraduate (taught and research) qualifiers were in ‘professional’ employment, as were 77.2% of First degree graduates and 72% of other undergraduate (including Foundation degrees, HNDs and HNCs) qualifiers.

There is, as would be expected, subject-based variation in professional employment. Looking at First degree graduates, we see that nearly all medicine and dentistry leavers found themselves in professional-level employment within six months of leaving higher education, perhaps an unsurprising outcome given their natural professional pathways.

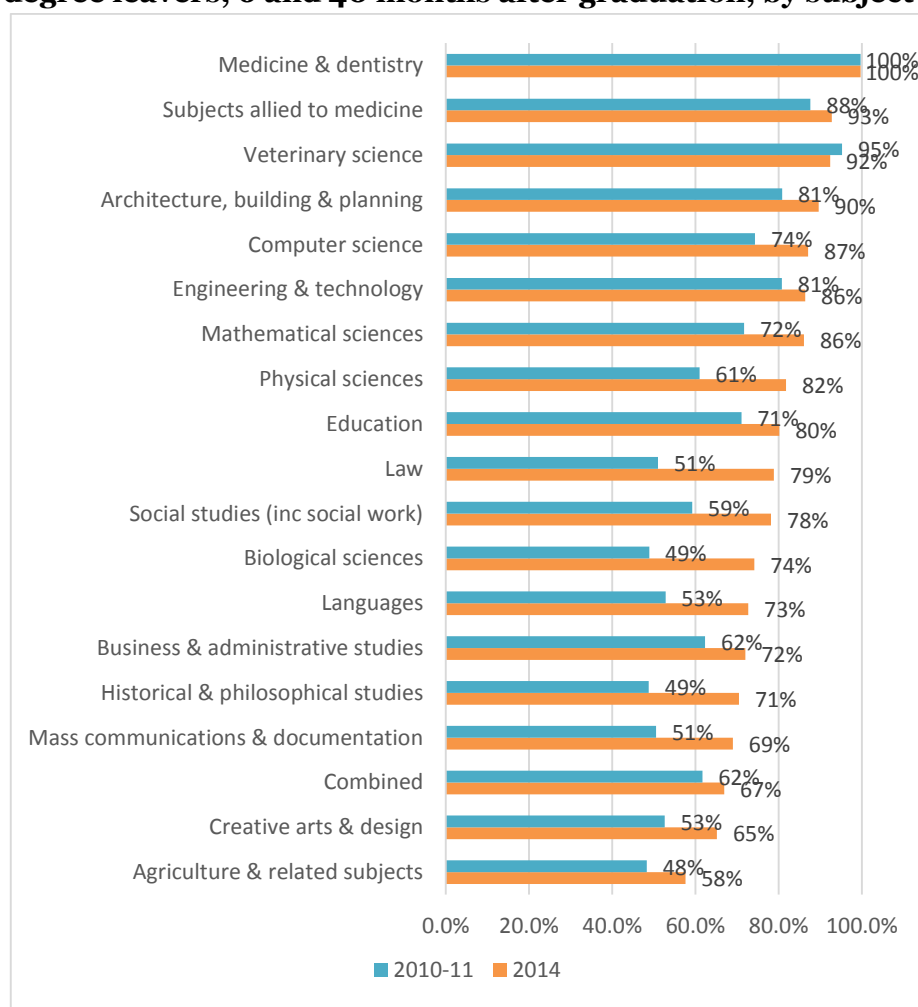
However, graduates from other subjects can take longer to find their way into professional-level jobs. For example, 48.9% of 2010–11 biological science graduates were in professional employment within six months as compared to 2014, by which point 74.2% of 2010–11 biological science graduates had found their way into professional-level employment.

This is illustrated in Figure 17, below, which shows professional employment rates for 2010–11 First degree graduates six months and then three years after leaving university, according to subject. However, due to limitations in data availability, figures for 2010–11 graduates at three years refer exclusively to those who studied full time whereas those for 2010–11 graduates refer to graduates who studied full- and part-time combined.

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senior officials), two (professional occupations) and three (associate professional and technical occupations) ‘professional employment’. The former Department for Business, Innovation and Skills, in its Graduate Labour Market Statistics series of publications, labelled these ‘high skilled employment.’

**Figure 17: Professional-level employment, UK-domiciled 2010–11 First degree leavers, 6 and 40 months after graduation, by subject**

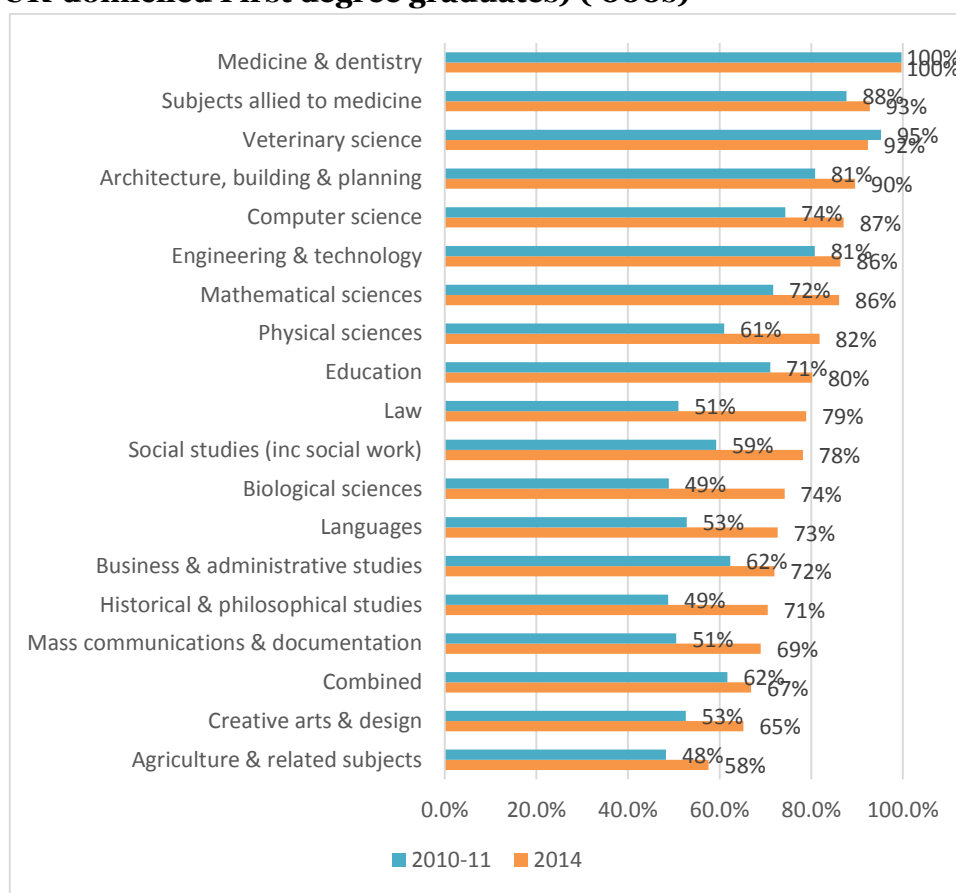


Source: HESA Longitudinal Destinations of Leavers from Higher Education 2010–11; HESA Destinations of Leavers from Higher Education 2010–11

These different paces of career development are also reflected in salary: graduates from all subjects tend to see median salary increases of between 15 and 50% in the first three years after completing their First degree. For example, the median wage of UK-domiciled creative arts First degree graduates was £16,000 in 2011, six months after having left higher education, to £22,500 in 2014, three years after leaving higher education, an increase of 41%. The median salary of law graduates rose from £17,000 six months after leaving higher education to £25,000 at the 40 months mark (an increase of 47%); and medicine and dentistry graduates from £30,000 at six months to £41,000 at 40 months (a 37% rise). Of course, absolute differences in median salary should not be taken as the sole indicator of a particular subject’s ‘success’; often they reflect a graduate’s own occupational, or locational, preference.



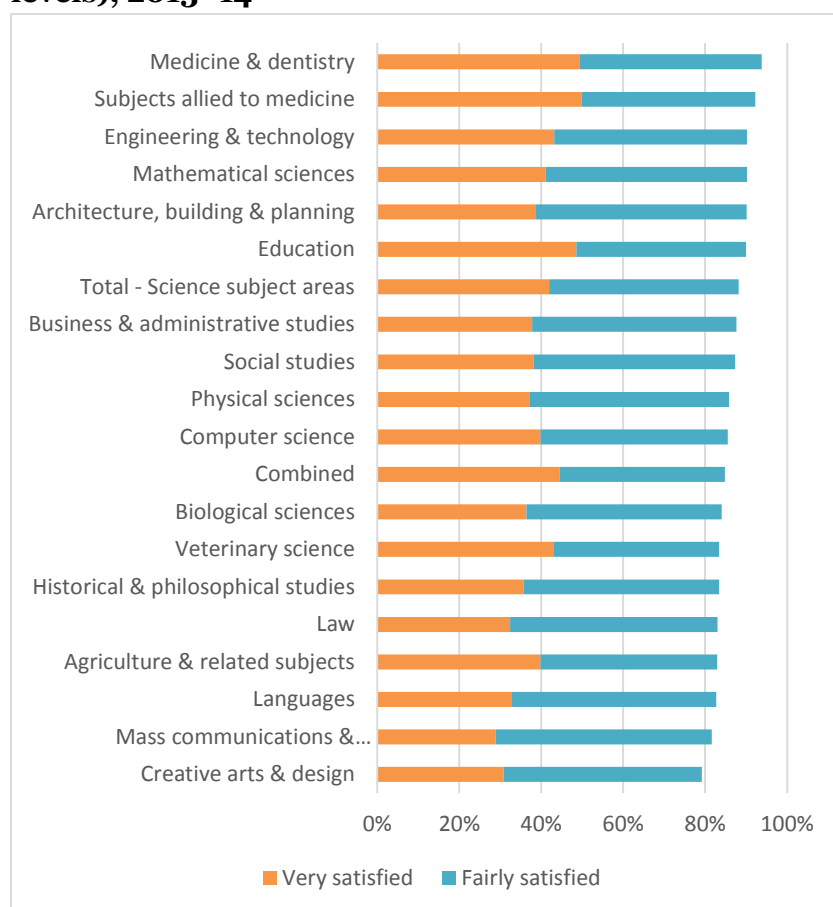
**Figure 18: Median salary at 6 and 40 months after graduation, 2010–11 UK-domiciled First degree graduates) ('000s)**



Source: HESA Longitudinal Destinations of Leavers from Higher Education 2010–11; HESA Destinations of Leavers from Higher Education 2010–11

Where persistently low salaries are accompanied by indicators of low career satisfaction, important questions about skills development would need to be asked. As far as the data tells us, however, an overwhelming majority of graduates are very or fairly satisfied with their careers within three years of leaving university: 86% of 2010–11 graduates (all levels) reported this when surveyed in November 2014, including 79% of creative arts graduates, 83% of law, 87% of social studies and 94% of medicine and dentistry graduates.

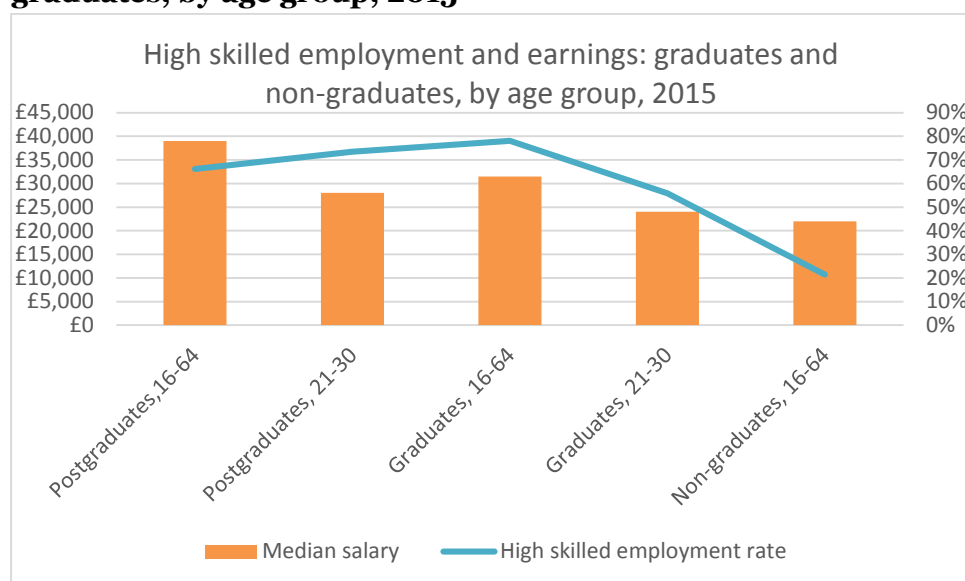
**Figure 19: Very/fairly satisfied with career, 2010–11 graduates (all levels), 2013–14**



Source: HESA, Longitudinal Destinations of Leavers from Higher Education (DLHE), 2013–14

We do know that, as a whole, today’s graduates have significantly higher earnings and higher rates of professional employment than non-graduates; this applies to young graduates (ages 21 to 30) as well as to the wider labour force (16 to 64). While the median salary of young graduates in 2015 was £24,000, their non-graduate counterparts were earning just £18,000; their high-skilled employment rate, similar to the aforementioned ‘professional employment’ figure, was 56% as compared to 17% for young non-graduates.

**Figure 20: High-skilled employment and earnings: graduates and non-graduates, by age group, 2015**



Source: Graduate Labour Market Statistics, 2015, Department for Business, Innovation and Skills

### Variation by graduate background

While graduates perform particularly well when compared to non-graduates, there does appear to be variation in employment outcomes according to background, including ethnicity: six months after leaving university in 2014–15, 96.8% of white full-time undergraduate leavers were in employment or further study, compared to 92.6% of those whose ethnicity is unknown, 92.3% other, 91.5% of graduates who identify as Asian and 91.3% of graduates who identify as Black.

The drivers underlying such variance are complex and manifold; such differences cannot be solely ascribed to universities, however it is important that universities work alongside employers, students and other stakeholders to understand the reasons for such gaps and identify clear, practical solutions.

### Graduate destinations into industry

How do graduates go on to address labour market requirements, and in particular, specific skills needs? Many graduates do immediately go on to work in industries related to their profession; for example, the longitudinal DLHE tells us that within 40 months of graduation, 96.5% of full-time First degree medicine and dentistry graduates were working in human health and social work activities, just as 76.9% of education graduates were working in the education sector.

However, there is evidence to suggest that graduates with subject knowledge that is in short supply actually go on to work in other, sometimes more generalist, industries. In our December 2015 report, [Supply and demand for higher-level skills](#), we noted that despite a high demand for graduates with many STEM and, in particular, engineering skills, DLHE data suggests that a considerable proportion go on to work in education, finance and insurance, and information and

communication.

While some of these findings could be driven by complexity in classifying occupations and industries<sup>16</sup>, they do represent a clear challenge to education providers and industry: often, ‘mismatched’ destinations reflect graduates’ personal preferences, such as a job’s location or the salary it offers. How can we encourage graduates with highly demanded skills into the occupations where they are most needed?

While the recent [Wakeham Review of STEM Degree Provision and Graduate Employability](#) (2016) focused on employability of graduates more so than employers’ challenges in accessing graduates, it did note that graduates will be better prepared for work when, as students, they have access to work experience (a finding that has resonated for graduates of all subjects<sup>17</sup>). It also emphasized the need to embed specific work-related skills into courses, improve careers advice and, relatedly, improve the quality of graduate destinations data so as to achieve a more granular illustration of the flows of graduates from particular courses into particular sectors. Improved data sources may help inform our understanding of the supply and demand for specific skills – an outcome of likely benefit to employers searching for vacancies. However, the European Centre for the Development of Vocational Training (CEDEFOP) points to a host of additional factors including pay and ‘inefficient recruitment and training strategies.’<sup>18</sup>

Of course, it is not always possible – or helpful – to try to adopt a rigid model of supply and demand for all graduates: in a knowledge economy such as the UK, graduates with a core set of analytical, critical and creative skills may excel in any number of highly-skilled occupations and industries. For example, a social science graduate may have developed the skills to allow them to flourish in a number of different occupations and industries, from finance to market research; an attempt to rigidly match supply and demand for their skills and subject knowledge would potentially undermine the core set of capacities that should help them to adapt to an ever-changing, knowledge-based labour market.

This indicates that providers could do an excellent job in developing the skills and subject knowledge of graduates, including providing a range of opportunities to experience work and link with employers, but where those graduates end up is a choice driven by a whole range of factors in addition to their qualification and skills. With the strong employment rate of graduates combined with reported skills shortages, perhaps becoming exacerbated by demographic trends and reduced immigration in light of the UK’s vote to leave the EU, there is a market for talent and employers will need to actively engage with this market to meet their needs and persuade graduates to work for them.

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<sup>16</sup>The DLHE classifies graduate jobs into different industries using the Standard Industrial Classification system, wherein jobs are coded according to an employer’s industry. While this may make sense for a doctor – they do a health-related job for a health employer – it may muddle other classifications: an accountant at a construction firm would be classified as working in construction, as would its in-house legal adviser.

<sup>17</sup> QAA (2016) *Evaluating the impact of higher education providers’ employability measures*

<sup>18</sup> CEDEFOP (2014) *Skills mismatch: more than meets the eye*

Conclusion Data showing overall high rates of highly skilled – and highly paid – graduates suggests that their experience during higher education has given them a significant boost in life and indeed contributed to the skills needs of the economy. While the skills developed in higher education will allow many graduates to adapt and excel across a wide range of occupations and industries, there remains a question about how to ensure graduates with specific skills that are in high demand are encouraged into the areas that need them most.

We also know less about the specific factors that graduates believed helped them transition into the labour market – and the extent to which their assessments match up with employer priorities. What matters most: degree classification, subject, work experience or interview preparation?

And of course, we are concerned not just with what helps graduates transition into employment but also how they – and their employers – succeed, making the best use of their skills and knowledge.

## **4. TRANSITIONING INTO – AND SUCCEEDING IN – THE LABOUR MARKET: WHAT SKILLS AND EXPERIENCE MATTER MOST?**

This chapter briefly compares Destinations of Leavers from Higher Education (DLHE) survey questions that ask graduates, 40 months after leaving higher education, what helped them into their current roles against what employers list as the most important factors under consideration when recruiting a graduate.

It then outlines how, according to a small number of surveys, employers feel that graduates perform in these areas, before going on to ask where and how some of these skills and capabilities might best be developed.

### **Graduates on entering the labour market**

What, according to graduates, mattered most for attaining their job? The longitudinal DLHE (university graduates only) includes a series of questions asking graduates to indicate whether a particular attribute was a formal requirement or important factor in attaining their current job. The attributes include type of qualification, subject studied, degree class, skills and competencies, relevant work experience and formal work experience that was part of their qualification (eg a sandwich year).

For graduates of all levels and all subject areas, skills and competencies came first (82.4% reported this to be a formal or important requirement), followed by relevant work experience (66.7%), type of qualification (63%), subject studied (58.9%), degree class (43.3%) and formal placement (39.7%). The latter is not a surprising outcome given the low proportion of graduates who will have completed a sandwich year.

Table 3, below, lists the results at subject level for all levels of higher education qualifications; cells highlighted in purple denote the highest rated attribute for a particular subject, those in blue note the second highest and green, the lowest.

**Table 3: Importance of attributes in attaining current job, UK-domiciled graduates from universities only, all qualifications**

All levels	Type of qualification: Formal/important	Subject studied: formal/important	Degree class: Formal/important	Skills and competencies: formal/important	Formal/important: Relevant work experience from previous employment
Historical & philosophical studies	48%	29.60%	39.10%	78.70%	67.50%
Mathematical sciences	67%	61.00%	55.70%	84.70%	48.20%
Combined	48%	39.20%	31.40%	70.00%	71.80%
Languages	54%	37.30%	40.40%	82.00%	70.80%
Physical sciences	63%	54.70%	45.40%	80.40%	56.70%
Creative arts & design	44%	45.60%	26.30%	75.60%	64.00%
Law	62%	57.40%	53.10%	83.00%	67.40%
Computer science	57%	61.80%	42.60%	79.60%	58.10%
Mass communications & documentation	46%	44.10%	29.80%	79.70%	70.50%
Business & administrative studies	54%	50.00%	39.80%	79.50%	69.60%
Biological sciences	57%	51.20%	42.00%	79.40%	68.00%
Engineering & technology	69%	70.70%	51.20%	82.80%	57.90%
Social studies	59%	49.00%	42.40%	83.00%	71.90%
Agriculture & related subjects	49%	55.20%	31.10%	76.20%	68.60%
Architecture, building & planning	73%	73.50%	46.70%	83.00%	70.00%
Subjects allied to medicine	83%	85.10%	50.20%	88.50%	64.60%
Medicine & dentistry	89%	90.10%	42.50%	91.00%	66.50%
Education	81%	81.00%	53.60%	88.80%	68.50%
Veterinary science	92%	95.40%	24.60%	93.40%	72.60%
<b>Total all levels</b>	<b>63%</b>	<b>58.90%</b>	<b>43.30%</b>	<b>82.40%</b>	<b>66.70%</b>

Source: HESA Longitudinal Destinations of Leavers from Higher Education 2010–11

There is a striking degree of similarity across subject areas: skills and competencies are the highest rated attribute by a substantial margin, whether or not a subject may fall into a vocational or non-vocational category. This is followed by relevant work experience and type of qualification.

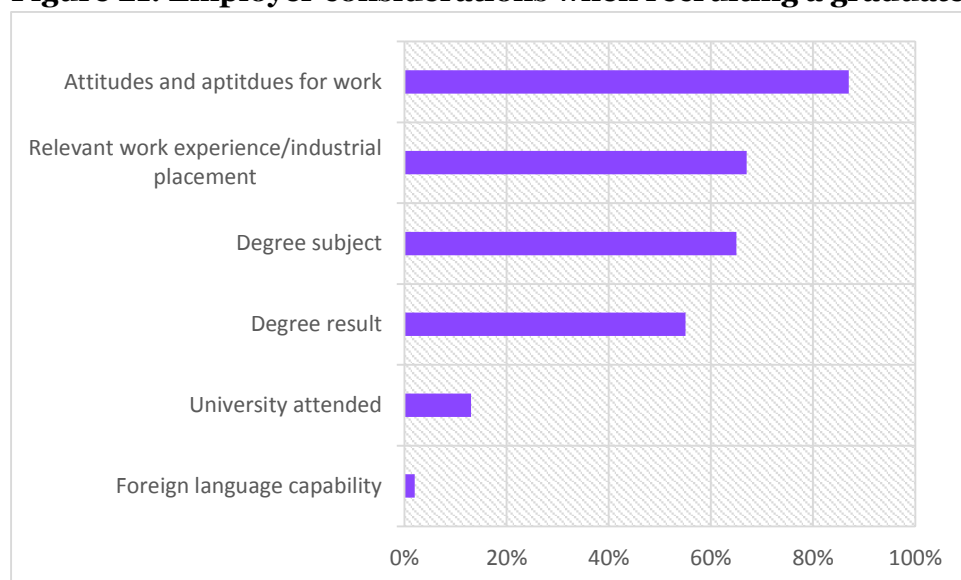
One interpretation of the data would suggest that this is not particularly surprising: while a degree may be a baseline requirement for attaining a job, an applicant’s ability to demonstrate the skills and competencies that they can bring to the workplace will allow them to stand out from their graduate counterparts. Work experience could have helped them translate the skills and competencies picked up through higher education into a formal work environment. However, this interpretation would require further interrogation, not just of the data but of both graduate and indeed employer perspectives.

### **Employer perspectives on graduate recruitment and graduate skills**

Each year the Confederation of British Industry (CBI) and Pearson conduct a survey on recruitment and skills, part of which includes a series of questions asking employers to list the most important factors under consideration when recruiting graduates, and a series of questions asking them to assess their graduate recruits’ skills.

In 2016, employers listed attitudes and aptitudes for work (reported by 87% of employers), relevant work experience (67%) and degree subject (65%, particularly more important for businesses in the manufacturing, engineering and high-tech sectors) as the most important factors under consideration when recruiting a graduate.

**Figure 21: Employer considerations when recruiting a graduate, 2016**



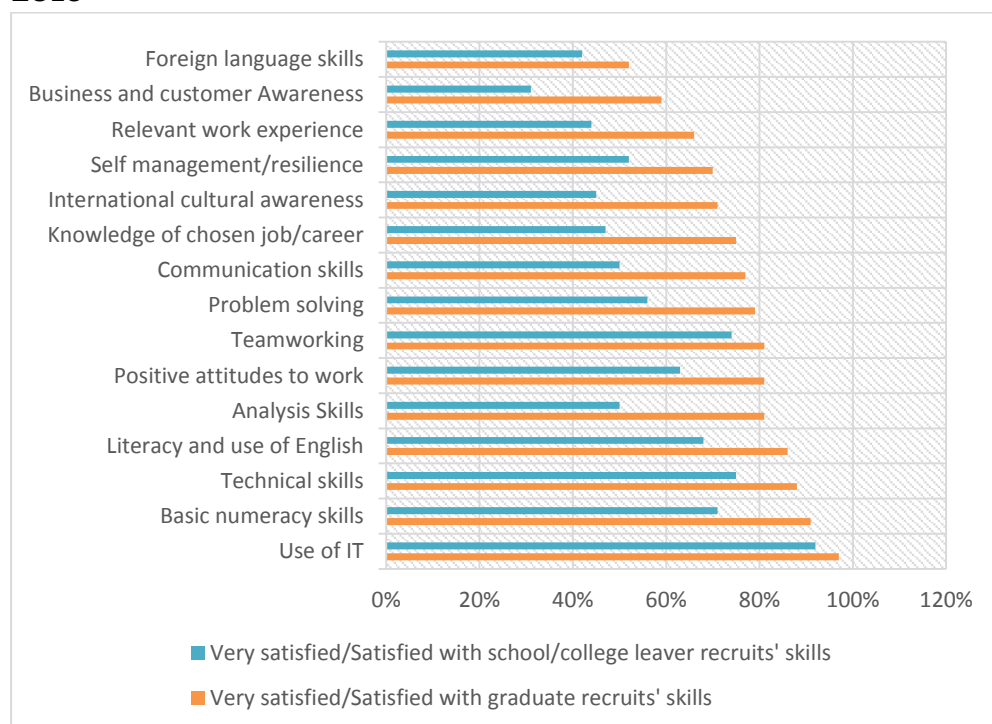
Source: CBI/Pearson Education and Skills Survey 2016

If we were to suggest a degree of similarity between the CBI’s definitions of attitudes and aptitudes and the DLHE’s ‘skills and competencies’ then there appears to be coherence among graduate and employer views: both rated skills/aptitudes and

relevant work experience as the first and second most important factors in attaining employment.

How have employers actually rated graduates' skills and attributes? The CBI/Pearson survey indicates that employers are, on the whole, quite satisfied with their graduate recruits' skills, particularly when compared to those of other types of education leavers.

**Figure 22: Employer assessments of recruits' skills by education level, 2016**



Source: CBI/Pearson Education and Skills Survey 2016

The survey does not tell us, however, how much this satisfaction varies by industry or the extent to which employers rate each of these skills as important (eg how many employers feel that their graduates' less-than-satisfying foreign language skills are a problem?). Yet it does point out particular areas of success (IT, numeracy) as well as capacities that, relative to other areas, could be seen as a problem (business and customer awareness, work experience, self-management and resilience).

It is interesting that analysis skills, which would be considered a core skill developed through higher education study, is identified as a highly valued and work-relevant skill. The survey also clearly identifies the difference higher education study makes in terms of the satisfaction of employers with the skills of their recruits. In previous chapters we have considered which higher education subjects might be considered more vocational or professional than others and which might be considered more technically focused. The survey clearly demonstrates considerable employer satisfaction with the technical skills of the graduates they recruit.

There are also interesting differences between employers' and graduates' skills



assessments. While, for example, just 60.3% of 2010–11 First degree graduates reported that their higher education experience enabled them to work effectively with numbers to a great or to some extent, 91% of employers reported being very satisfied or satisfied with their graduate recruits' numeracy skills. Conversely, 87% of graduates reported having developed their communication skills during higher education but only 77% of employers reported being satisfied with them.

Other skill assessments appear to be rated similarly by both employers and graduates: 86.6% of graduates reported that higher education enabled them to work effectively with others while 81% of employers reported satisfaction with their graduate recruits' team working skills. 83.9% of graduates reported that higher education helped them develop their problem-solving skills, as compared to 79% of employers who are satisfied with them.

There could be a number of issues that limit our ability to compare graduate and employer skill assessments. On the one hand, these could be data related; it is likely that different employers and of course different roles require different skills; reporting figures at such an aggregate level masks important trends. It is also highly probable that some disjuncture is driven by language or, more specifically, the absence of a clear framework that both employers and universities can use to identify and describe different sets of skills, both technical and transferable.

It might be helpful, therefore, to focus on a set of more easily described and understood skills, universal throughout different roles and industries but specifically pertinent to highly skilled workers. The 2016 Association of Graduate Recruiters Survey, for example, asked employers to assess the skills displayed by graduates when hired, including: managing up, dealing with conflict, negotiating/influencing, self-awareness, problem-solving and others.

**Figure 23: Employer assessments of graduate skills, 2016**



Source: AGR Annual Survey 2016

The results raise a number of interesting points and questions: graduates appear to perform best in terms of teamwork, communication and problem-solving and slightly

less well in negotiating, dealing with conflict and managing up, although a majority of employers classify this as an expected issue.

As a consequence, we are left to ask which of these skills are best developed during higher education – and in what facets of higher education – and which in the workplace? Is there a role for employers and providers to collaborate on these areas, and if so what is the most appropriate avenue: course design, open days, work experience opportunities? How do these views differ not just within the higher education sector but between universities and employers themselves?

Much of the data presented in this paper resonates with that discussed in employability surveys and literature.

Graduates from all subjects tend to do well in the labour market, with most employers prioritising graduates' ability to demonstrate their skills and capacities over degree subject. As research conducted by the [QAA/Institute for Employment Research and IFF Research](#), [CBI/Pearson 2016 survey](#), [Wakeham Review](#) and [Shadbolt Review of Computer Science Degree Provision and Employability](#) have all shown, employers in industries that require particular technical skills and/or subject knowledge will pay more attention to subject of study than others in industries that don't. There remains a question around how, and what forms of occupational shortage and graduate destinations data can be best used to inform prospective student choice. Likewise, there are questions around the forms of university-business collaboration that will prove most effective in encouraging technically skilled graduates to go into the industries that need them most.

Of course, those same pieces of research have found that graduates' ability to identify, describe and demonstrate work-relevant skills are critical to success in the labour market. Unfortunately, however, students and graduates often struggle to understand how skills developed on their course or in their extracurricular activities might be relevant to the workplace.

In fact, there are particular skills and knowledge bases that are more naturally developed in the workplace, such as business and customer awareness and managing up. This speaks to the importance of work experience as a common prerequisite to attaining a graduate-level job and having an easier transition into the workplace. However, the impact of work experience will vary according to its length, type and content.

Moreover, the importance of work experience – and students' understanding of how higher education-developed skills can be translated into the workplace – points to the need for a more decentralised level of careers advice.

**Conclusion** The UK higher education sector is immensely diverse, producing graduates with a wide variety of specific and transferable skills as well as clear competencies around problem solving, communication and teamwork. For the most part, these graduates go on to excel in the labour market and their skills and attributes are highly valued by employers.

But there are still a number of graduates who fare less well, a number of employers struggling to find the skills they require and concerns about some skills such as business and customer awareness and relevant work experience. All this raises questions in need of further exploration: the ability to demonstrate transferable skills and competencies appears critical to allowing graduates to transition into the labour market, but how can students best attain them? Should they be integrated into course design, central careers services, or learned through formal work placements? Does this vary by level, subject, or indeed university?

in the case of work placements, is there a particular format that best prepares graduates and most benefits employers? How are these best organised, funded, advertised and allocated? What models of university-employer engagement open up an array of opportunities to all students?

How can universities and employers work together to meet specific skills needs; what are the best collaborative mechanisms for allowing a clear, steady pipeline between in-demand graduates and employers with skill shortages?

And finally, how can universities ensure that the skills graduates leave with will remain relevant throughout eras of robust – and potentially unsettling – economic, organisational and technological change?

These are big questions we intend to address, and through the Universities UK Review of Skills we are inviting the sector and our stakeholders to work with us to address them.

## **ANNEXE: LIST OF TRANSFERABLE SKILLS**

Active listening  
Analysis and decision making  
Application of IT  
Application of numeracy  
Attitudes and aptitudes for work  
Basic numeracy skills  
Business and customer awareness  
Character/personality  
Cognitive flexibility  
Common sense  
Communication skills  
Complex problem solving  
Confidence  
Coordinating with others  
Creativity  
Critical thinking  
Data handling  
Emotional intelligence  
Entrepreneurship/enterprise  
Foreign language skills  
Initiative and also follow instructions  
Intellectual ability  
International cultural awareness  
Interpersonal and communication  
Judgement and decision making  
Knowledge of chosen job/career  
Leadership  
Literacy  
Management of learning  
Managing others/People Management  
Motivation, tenacity, commitment  
Negotiation  
Numeracy  
Passion  
Personal development skills  
Persuading/influencing  
Planning and organisational skills  
Poor education  
Positive attitudes to work  
Problem solving  
Quality Control  
Reasoning  
Resilience  
Self management/resilience  
Service orientation  
Team working  
Technical skills  
Using IT effectively

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