

Northern Ireland 2017 Skills Barometer

“Skills in Demand”

Summary Report

June 2017

Northern Ireland Skills Barometer – Summary Report

Contents

- 1. Introduction 3
- 2. Macro-economic forecast..... 4
- 3. The supply/demand (im)balance 7
- 4. Careers Advice..... 14
- 5. Policy implications 17

Northern Ireland Skills Barometer – Summary Report

1. Introduction

Introduction

1. The original skills barometer research was published in November 2015 with the aim of building a model to estimate the quantum of future skill needs and gaps by level, sector and subject area. Since then, significant engagement has occurred across a wide range of stakeholder groups to complement the quantitative findings of the research. These stakeholders have included:
 - **Careers advisors, young people and parents** – in order to help inform young people when choosing their career pathway;
 - **Teachers and schools** – to help inform curriculum development;
 - **Business groups** – to use as a means to articulate skills needs; and
 - **Department for the Economy (DfE) and wider Government** – to inform policy development and level of provision to meet skills needs of the NI economy.
2. This update report has now been completed as part of the 3 year sponsorship arrangement between the Ulster University Economic Policy Centre (UUEPC) and DfE to ensure the information reflects the latest economic conditions.
3. The last 12 months has been a time of significant change in the UK and global macro-economic environment. The EU referendum decision has resulted in important changes to policy:
 - **Monetary policy** – interest rates have been reduced and are likely to stay lower for longer; and
 - **Fiscal policy** – the UK Government has abandoned its target of a balanced budget by 2020.
4. These factors have a significant impact on the economic outlook and as a consequence the areas of the economy where jobs are likely to be created.
5. In addition, the uncertainty will almost certainly continue in 2017 and beyond as negotiations on the UK exit from the EU commence and elections take place across major EU member states (including France, Germany and the Netherlands). Each of these elections has the potential to create instability within the Eurozone which in turn creates more complexity to the Brexit negotiations.
6. This paper provides a brief overview of the detailed results from the research undertaken to forecast both the supply and demand for skills over the next ten years and identify the areas where supply gaps are likely to occur. A more detailed report has been produced and is available separately.

Northern Ireland Skills Barometer – Summary Report

2. Macro-economic forecast

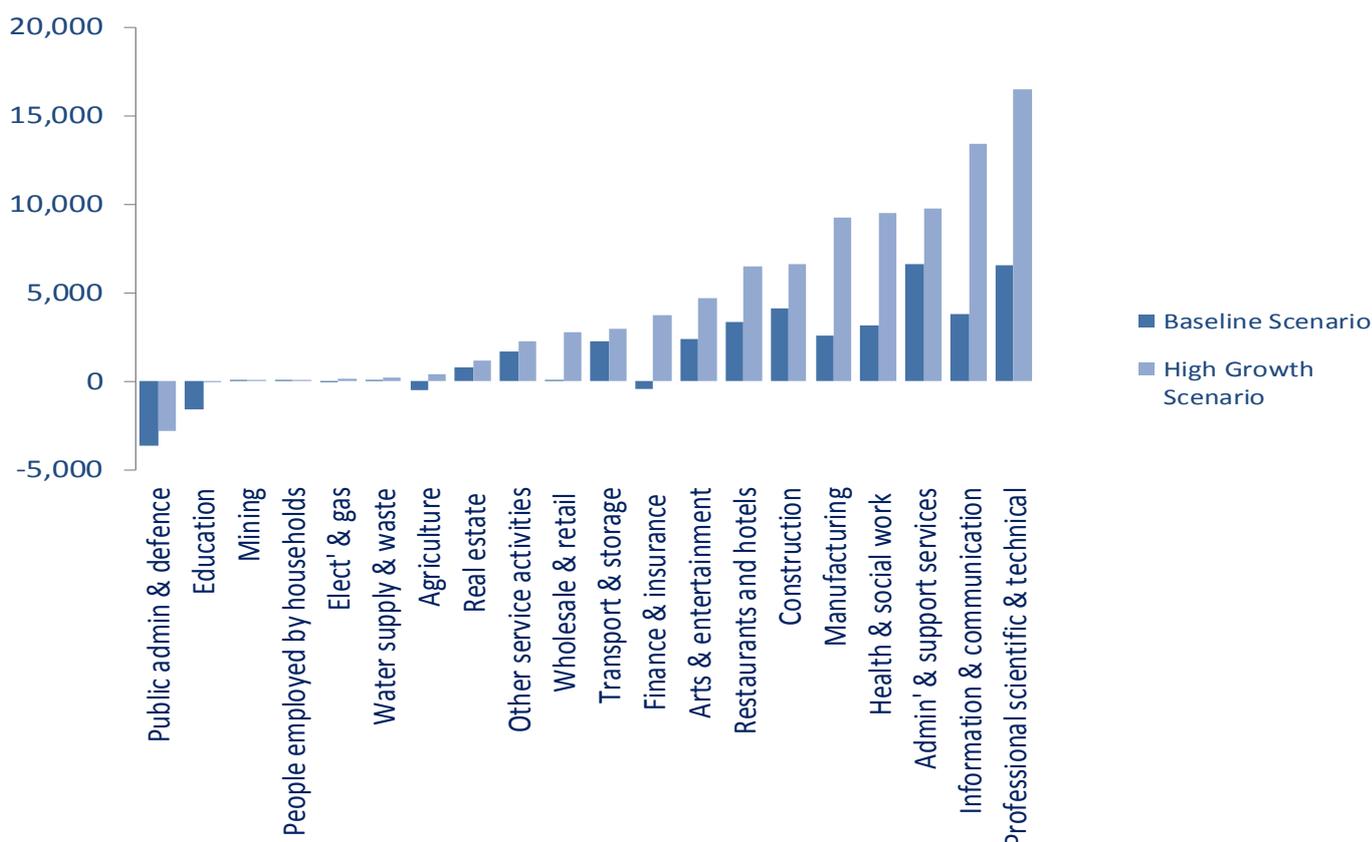
Introduction

1. The job creation assumptions are based on the Ulster University Economic Policy Centre (UUEPC) macro-economic forecast, represented by the most likely economic outcome (i.e. the Baseline scenario forecasting approx. 32k additional jobs by 2026).
2. In addition, if Northern Ireland is to achieve its economic ambitions, a higher level of economic growth and job creation will be required. The assumptions on job creation and in turn the demand for skills are based on this high growth scenario (approx. 87k additional jobs across all sectors by 2026).

Total change in employment

3. Figure 1 below shows the assumed change in employment across sectors over the next 10 years

Figure 1: Total employment change 2016-26 (by 1 digit SIC¹)



Source: UUEPC

¹ SIC – Standard Industrial Classification codes used by the Office of National Statistics to classify industry sectors (e.g. Public Admin & Defence, Education, Finance & Insurance etc.)

Northern Ireland Skills Barometer – Summary Report

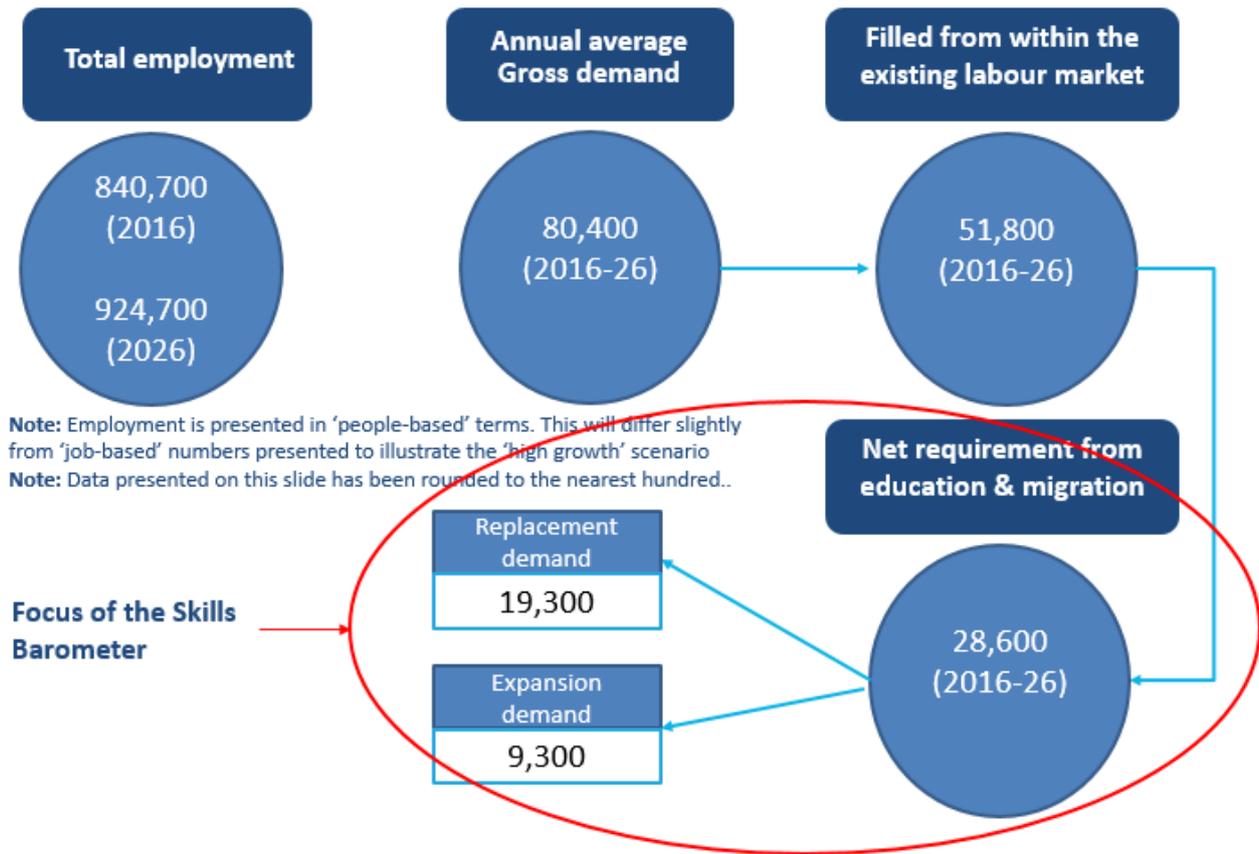
4. This chart shows the change in employment levels across the main sectors in the economy. If Northern Ireland is to achieve its economic ambitions, reasonably strong growth in the following sectors is anticipated:
 - Professional, Scientific and Technical Services
 - Information & communication
 - Administration & Support services
 - Health
 - Manufacturing
5. In addition, a small reduction in employment is anticipated in public sector dominated areas on the basis of lower levels of Government spending:
 - Public Admin & defence
 - Education

Job opportunities created

6. The NI economy currently has total employment levels of approx. 840k people, which is forecast to increase to approx. 924k people by 2026. Furthermore, it is estimated that over the next 10 year period approx. 80k job opportunities will become available each year (annual average gross demand).
7. However, most of those job opportunities (52k) will be filled by people already in the labour market (i.e. people moving from one job to another), but the additional 29k people must be filled from the education system. If the supply from education is insufficient to meet demand, then the balance would typically have been met by inward migration. Looking forward, the potential for greater immigration controls post-Brexit could reduce this potential supply of labour and put greater pressure on local education institutions to supply labour with the appropriate skills.
8. The Skills Barometer focuses on this final component (net requirement from education and migration). See Figure 2 below.

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Figure 2: Job opportunities created



3. The supply/demand (im)balance

Introduction

1. The skills levels used in this analysis are based on the National Qualifications Framework (NQF) scale.

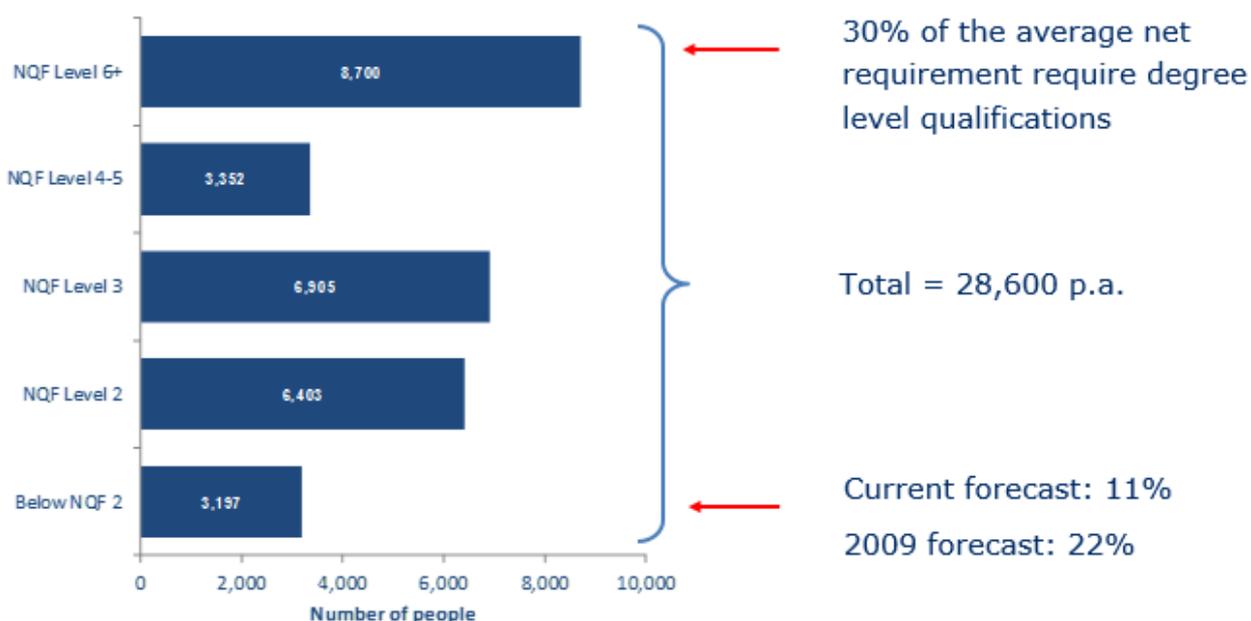
Table 1: National Qualification Framework (NQF) Scale

Level 8 – PhD (or equivalent)
Level 7 – Masters (or equivalent)
Level 6 – Degree (or equivalent)
Level 4-5 – Foundation Degree/ HND/ HNC (or equivalent)
Level 3 – A-Level (or equivalent)
Level 2 – 5 GCSEs Grades A – C (or equivalent)
Level 1 – 5 GCSEs Grades D – G (or equivalent)
Level 0 – No qualifications

Overview of demand

2. The annual average net requirement for skills across all NQF levels from the education system is set out in Figure 3 below. This totals 28,600 across all skills levels and the forecast demand for NQF L6 and above is greater than other individual NQF levels.

Figure 3: Annual Average Net Requirement for Skills



Source: UUEPC

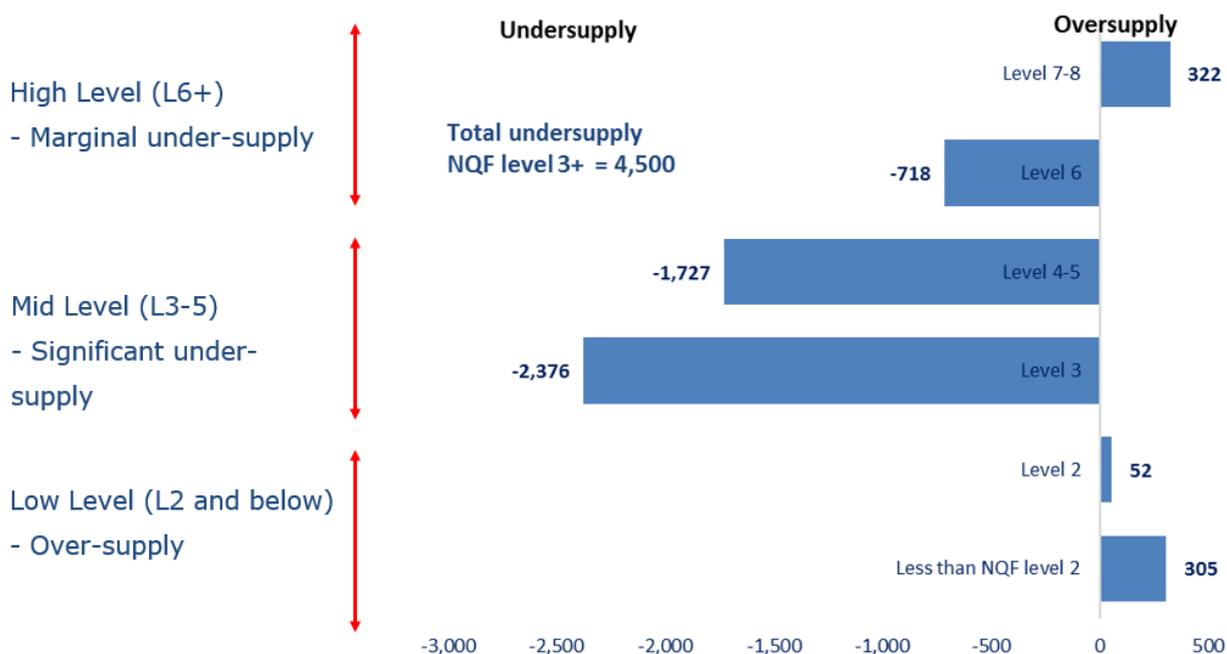
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3. The net requirement analysis above highlight a number of important points:
- **Graduate level skills in high demand** – approximately 30% of demand from the education system is at graduate level entry;
 - **Low demand for low skills** – only 11% of the opportunities arising from education will be for those with below NQF L2 qualifications (i.e less than 5 GCSEs Grades A-C). To put this in context, at present 19% of school leavers achieve less than 5 GCSEs A-C, which increases significantly to 34% for those with 5 GCSEs A-C including Mathematics and English².
 - **Decreasing demand for low skills** – The proportion of job opportunities arising for those with low skills (i.e below NQF L2) is trending down strongly. Skills research completed in 2009 found that approximately 22% of the job opportunities arising would have been for those with below NQF L2 qualifications (compared to the 11% forecast made in this latest research). Therefore achieving higher level qualifications is becoming increasingly important to obtaining employment.

Supply Gap – NQF Level

4. At the macro-level, the demand for skills in Northern Ireland will outstrip supply but the nature of the skills gap varies across NQF levels. See Figure 4 below.

Figure 4: Annual Average Labour Market Supply Gap



Source: UUEPC

² Source: DENI, Qualifications of School Leavers 2014/15. It should be noted that although there is still significant scope for improvement, pass rates have increased considerably over the last 10 years, in 2004/05, 37% did not achieve 5 GCSEs A* - C, rising to 49% including Mathematics and English

Northern Ireland Skills Barometer – Summary Report

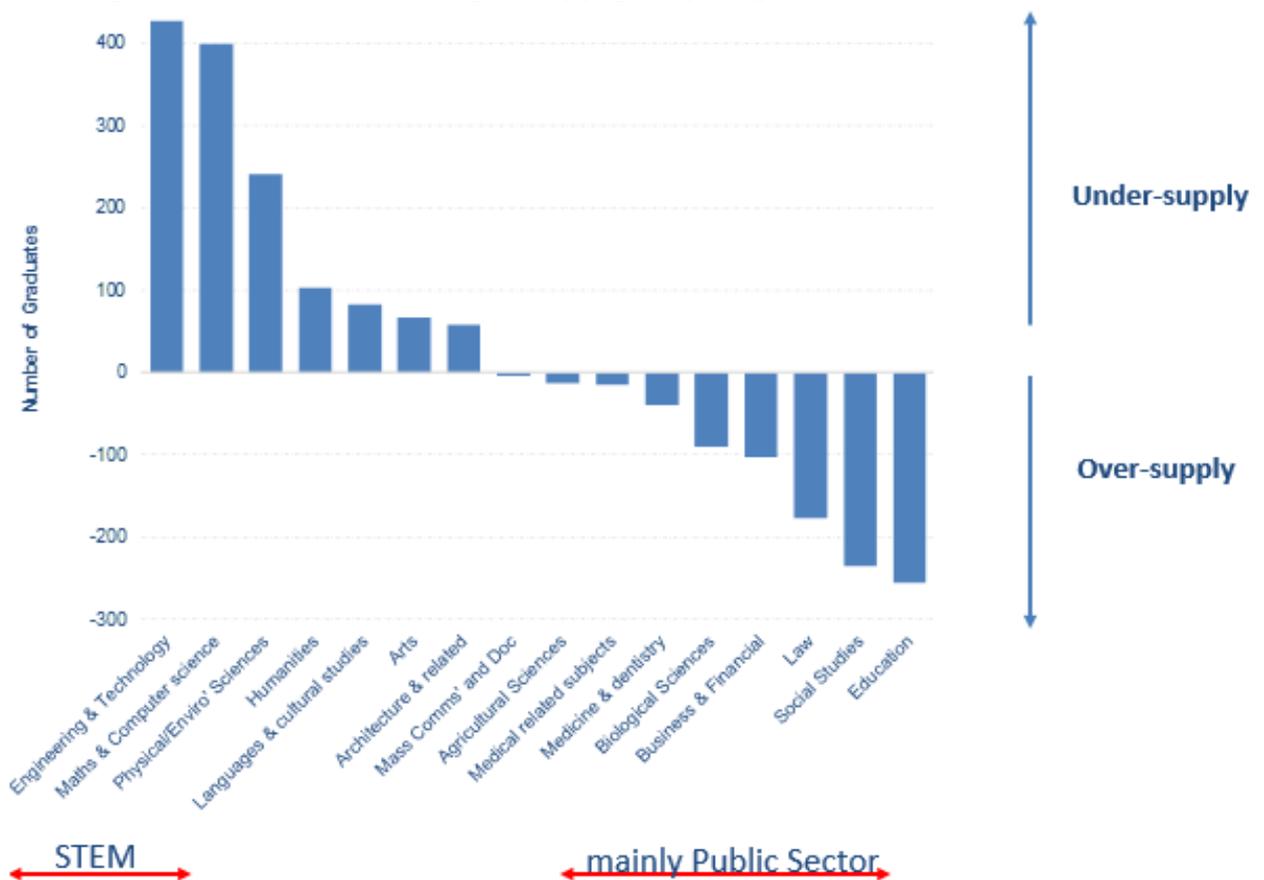
5. This analysis highlights the need to encourage much greater numbers of young people who currently leave school with low/ no qualifications to stay in education.
6. There are a number of findings across different skill levels:
 - **Marginal supply gap at the graduate level (NQF L6+)** – overall the supply of graduates is forecast to fall marginally short of demand. However, the fundamental issue is the mix of subject areas studied which is out of balance. Given the importance of the public sector to the recruitment of those with higher skills, austerity will have an impact on the supply gap.
 - **Shortage most acute in mid-tier skills (NQF L3 and L4-5)** – the largest supply gaps are likely to emerge in the mid-tier skills levels across most subject areas. However this is primarily a supply issue, typically most students studying at NQF Level 3, continue their education thereby reducing the supply leaving education at that level. Therefore, the challenge is to encourage greater numbers who leave education at Level 2 and below to remain in education for longer and achieve a higher skill level;
 - **Over-supply of low and no skills (NQF L2 and below)** – the demand for formal qualifications across all areas of the economy will increasingly impact the employment prospects of people with low or no skills.

Northern Ireland Skills Barometer – Summary Report

Supply Gap – By degree subject area (Level 6+)

- Analysis of NQF Level 6 and above skills shows that whilst the number of graduates and post-graduates combined are marginally undersupplied, there is an imbalance across individual subject areas (see Figure 5).

Figure 5: Annual Average Supply Gap NQF Level 6 and above



Source: UUEPC

- This analysis shows there are some subject areas of significant under and over-supply. The subjects forecast to be predominantly under-supplied are Engineering & Technology, Maths & Computer Sciences and Physical and Environmental Sciences. It is estimated that the economy will require an additional 400 Engineering & Technology graduates and a similar number of additional Maths & Computer Science graduates each year. Strong demand for the STEM related subjects is forecasted.
- This trend reflects the anticipated growth in the ICT, Professional Services and Advanced Manufacturing sectors driving demand for qualifications in computer science and engineering subjects. In contrast, the low/ no growth in public sector spending and the likely lower levels of recruitment will influence the demand for skills in subject areas popular across the public services. These include subjects such as Education, Social Studies and Law.
- However there are a number of **IMPORTANT** points to note when interpreting these results:

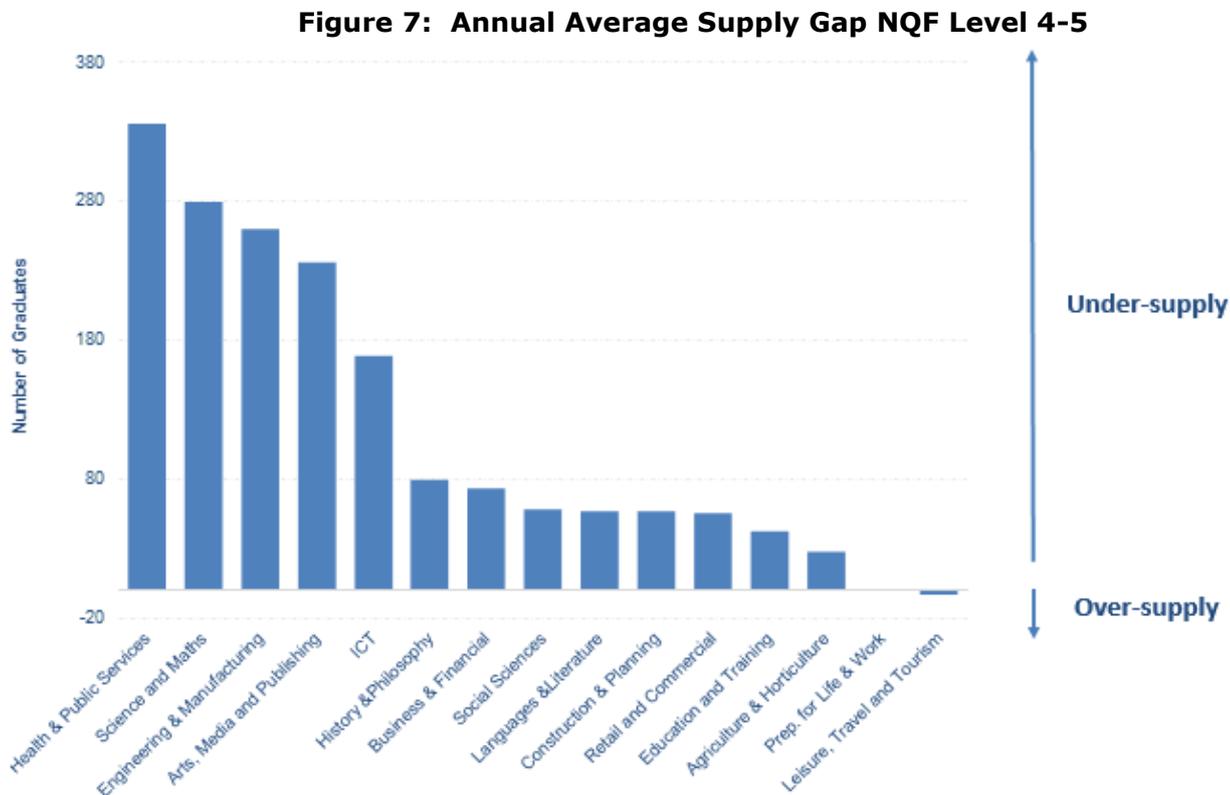
Northern Ireland Skills Barometer – Summary Report

- If a subject area is over-supplied, it does not necessarily mean that a young person should not study a subject in that area, particularly if they have a strong interest or aptitude in the subject. They may learn and develop a wider range of skills in demand in other parts of the economy, but it may be a greater challenge securing employment in the subject related sector.
- Law is identified as an over-supplied subject area and whilst it is generally recognised that most law graduates do not go on to work in the law, it is often recognised a good 'general arts' degree. Law graduates tend to find employment across a wide range of sectors because of the other skills (e.g. analysis, critical thinking, written and oral communication) they have developed.
- Biological sciences is shown as over-supplied and this is driven by an over supply in Psychology and Sports Science (both categorised under Biological Sciences). Other biological science subjects are under-supplied.
- For many subject areas the over/ under-supply is less than 100 and therefore could be broadly considered to be in balance. This analysis should only be considered most relevant in subject areas which have higher levels of over and under-supply.

Northern Ireland Skills Barometer – Summary Report

Supply Gap – by Foundation Degree and equiv. (NQF Level 4-5)

11. Analysis of NQF Level 4-5 skills shows a greater level of under-supply both at the macro level and also across individual subject areas (see Figure 7). Similar to higher level skills, the subject areas with the largest under-supply are STEM related.



Source: UUEPC

12. It is important to recognise that whilst there is an undersupply at this 'technical' level, the undersupply is potentially being met by graduates unable to secure graduate level employment. This is based on anecdotal evidence and further detailed research would be required to confirm this assumption.

Understanding why STEM related subjects are always undersupplied

13. STEM related subjects remain under-supplied and this has been a consistent finding across skills research for several years. There are many reasons for this finding, not least because sectors such as engineering have significant growth potential and STEM skills are in demand across a wide range of sectors and occupations.
14. Further work should be undertaken to understand this in more detail, but findings from the consultations highlighted that engineering is amongst a relatively small number of occupations that typically requires a qualification in a STEM related subject discipline. Whilst those with STEM related qualifications are not bound to these sectors. As a consequence, this places greater reliance on the volume of qualifications being achieved in these subjects relative to other subject areas.

Northern Ireland Skills Barometer – Summary Report

15. In contrast, other professions (e.g. accountancy) do not recruit solely from sector specific subject disciplines. Perhaps recruiting from a broader range of subject areas alongside a comprehensive training programme could help alleviate shortages.

Northern Ireland Skills Barometer – Summary Report

4. Careers Advice

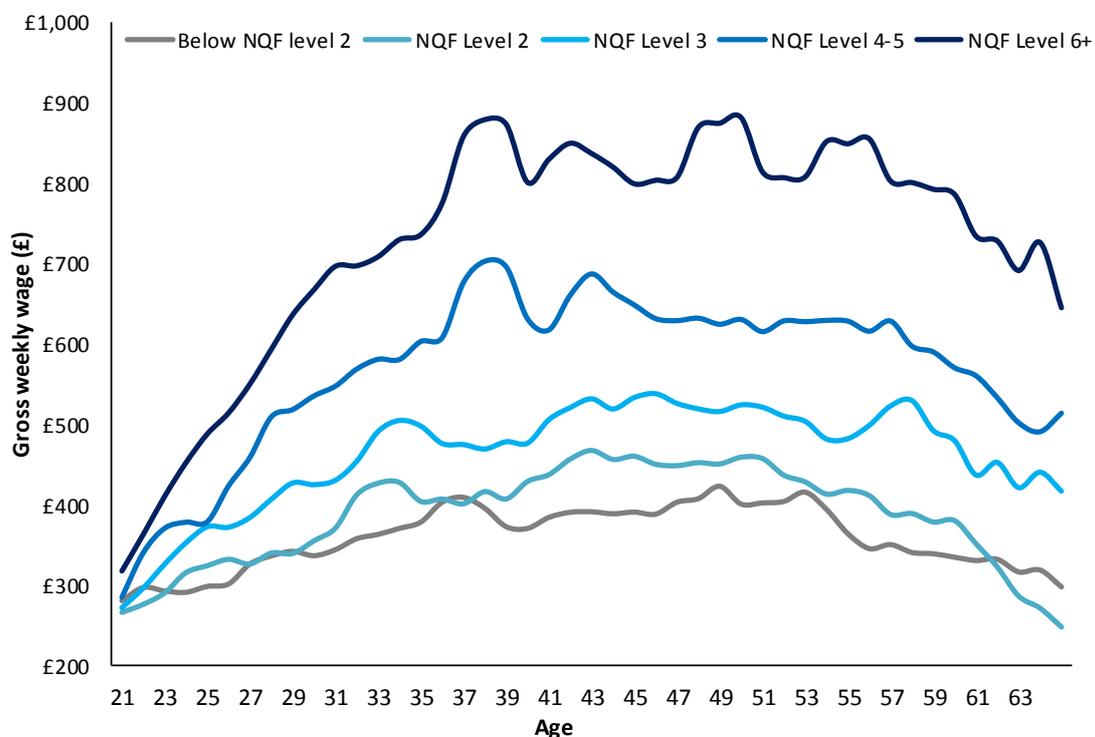
Introduction

1. This section of the summary report provides a very brief overview of the key findings from the detailed report that forms part of the wider careers advice information identified during the research.

Average earnings

2. Figure 8 below shows the average earnings of people across their working lives based on their highest qualification. It demonstrates that the higher the level of qualifications achieved, the higher the average earnings potential.

Figure 8: Gross weekly earnings by age and NQF Level, UK, 2015/16



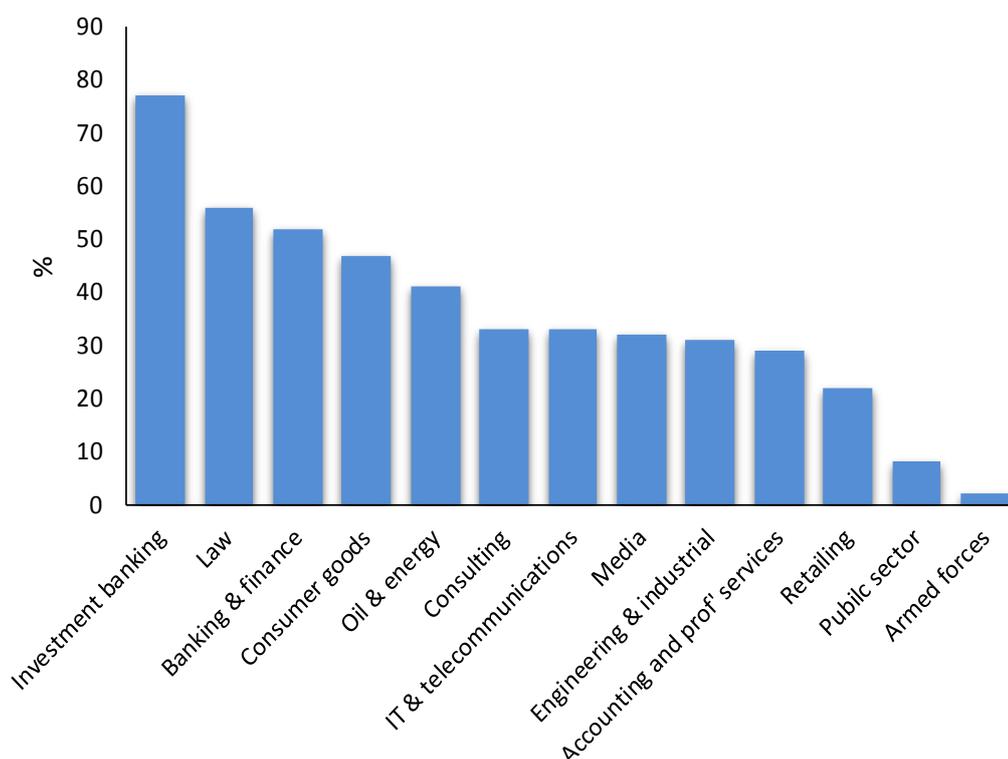
3. It is interesting to see that graduate earnings start out broadly similar to those with lower level qualifications but then increase significantly through their 20s and 30s.
4. Therefore there are significant lifetime benefits associated with continuing education post 16 and into tertiary level education (i.e. Further or Higher Education) and young people should be encouraged to stay in education for as long as possible.

Northern Ireland Skills Barometer – Summary Report

Employability skills and the importance of placement

5. Employability skills, in addition to the academic or technical skills provided through education, were identified by employers as a critically important skillset for young people leaving education.
6. The definition of employability skills varies and although this is not to be considered as exhaustive, they tend to centre on the following key areas:
 - Problem solving
 - Team working
 - Communication
 - People management
 - Commercial awareness
 - Critical/ objective thinking
 - Professional attitude
 - Initiative
7. The key challenge for education institutions is to integrate the development of these skills into course delivery. However it is also important that young people in education also develop their employability skills through work experience, typically through a placement and/ or internship in a role linked to the career they wish to pursue.
8. This is highlighted in research undertaken by 'The Graduate Market' in 2016, which shows the importance of placement and internship programmes as an approach to securing graduate level employment after qualification. See figure 9 below.

Figure 9: Vacancies likely to be filled by grads who already worked for employer



Source: The Graduate Market 2016

Northern Ireland Skills Barometer – Summary Report

9. The proportion of vacancies filled by previous interns or placement students varies across sector, but on average it is approximately 1 in 3. This approach works well for both students and employers as they both develop a detailed understanding of the requirements of the role/ career (for the student) and the prospective candidate's ability to meet those requirements (for the employer).

5. Policy implications

Key lessons from 2 years of research

1. Having completed the research for a second year and reflecting on the wider skills development issues in Northern Ireland, the following key lessons have been identified:
 - **STEM related subjects still under-supplied** – the research has shown for a second year that STEM related subjects are under-supplied. This is a skills shortage identified across many developed economies and given the likelihood of continued demand for these skills and the FDI potential in these sectors, ways to increase provision in these subject areas (at both FE and HE) should be considered;
 - **Funding mechanism to reflect the skills shortages** – separately, there is currently significant debate on the future funding of Higher Education in Northern Ireland. An appropriate funding model should incentivise the study of under-supplied subject areas, but also recognise that some of these under-supplied skills are expensive to deliver (e.g. engineering);
 - **Understanding student outcomes 18 – 24 months after qualification** – a more comprehensive survey is required of student outcomes 18 – 24 months after qualification to:
 - identify the level of employment achieved (e.g. equivalent to the qualification obtained) across all individual subject areas;
 - identify appropriate response to over-supplied subject areas – rather than simply reducing provision in over-supplied subject areas in the first instance, determine if qualifiers in these areas are finding suitable level employment and demand exists for the skills they have developed. Only then can an appropriate response be identified;
 - understand the reasons why some have found employment at a level below that for which they are qualified. If the reason is insufficient job opportunities, that has a very different policy solution than if the reason is that young people do not have the skills that employers require.
 - **Provision of careers advice and a Labour Market Intelligence (LMI) portal** – the popularity of the Skills Barometer since its launch has highlighted the demand for labour market information across a wide range of stakeholder groups. The Skills Barometer forms only one component of the overall information which could be included in an LMI portal and the Department should consider ways in which this could be developed.

Northern Ireland Skills Barometer – Summary Report

- **Work placement and internship** – employment based learning is increasingly important in terms developing the broader employability skills employers require from potential recruits. Work placement and internship opportunities have an increasingly prominent role in most tertiary level courses but this should be rolled-out across all courses where practical. This requires buy-in from both employers and education institutions and therefore a strategic push at Department level could encourage greater levels of participation and roll-out.
- **Dealing with under-achievement** – the proportion of school leavers not achieving NQF level 2 (at least 5 GCSE's A*-C) has improved considerably over the past decade falling from 37% in 2004/05 to 19% in 2014/15. However, the proportion of school leavers without achieving at least 5 GCSE's including English and maths remains high at 34%, albeit a significant improvement from 49% a decade earlier. This cohort then typically move into Further Education and training programmes. In order to meet supply gaps at medium and higher levels, it is essential that the level of under-achievement is addressed.
- **Potential changes to course content** – the original Skills Barometer research identified the importance of employability skills and this remains critical moving forward, but other potential changes to course content should be considered. Skills such as commercial awareness and good communication (written and presentational) are required across a wide range of occupations and sectors, therefore the inclusion of business and communications modules across a wider range of course disciplines should be considered.

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