Knowledge Exchange Seminar Series (KESS)

NI Skills Barometer: Developing skills for tomorrow’s economy

Mark Magill, Senior Economist, Ulster University Economic Policy Centre (UUEPC)

KESS Seminar – 24th February 2016

Introduction

Maximising the potential of young people and the wider population through the effective development of skills is a fundamental building block of a successful economy. Therefore, identifying both the skills needs of employers and the level of skills supplied through education institutions is important to fully inform Government policy decisions. In addition to Government the information included within the Skills Barometer is aimed at wider stakeholders including young people, parents and careers advisors; employers; and education institutions. **The aim of the barometer is to provide stakeholders with information as a basis to make informed decisions.**

Broad approach

The approach developed to forecast skills requirements over the 2015-25 period included both a **quantitative and qualitative analysis**. This approach recognised the importance of both a sound evidence base from a wide range of quantitative data sources as well as incorporating industry insight from employers and sector groups.

The skills forecasting model developed is a flexible tool to estimate the quantum of future skills needs across a range of economic scenarios (e.g. a reduction in Corporation Tax, or the impact of austerity). This will also be a useful tool to consider the skills implications of the forthcoming Programme for Government and future NI Executive economic strategies.

Scenario planning

The future skills requirements of the NI economy are highly dependent upon the economic outlook. For example, in a time of economic weakness the demand for skills will be lower than in a time of strong economic growth.

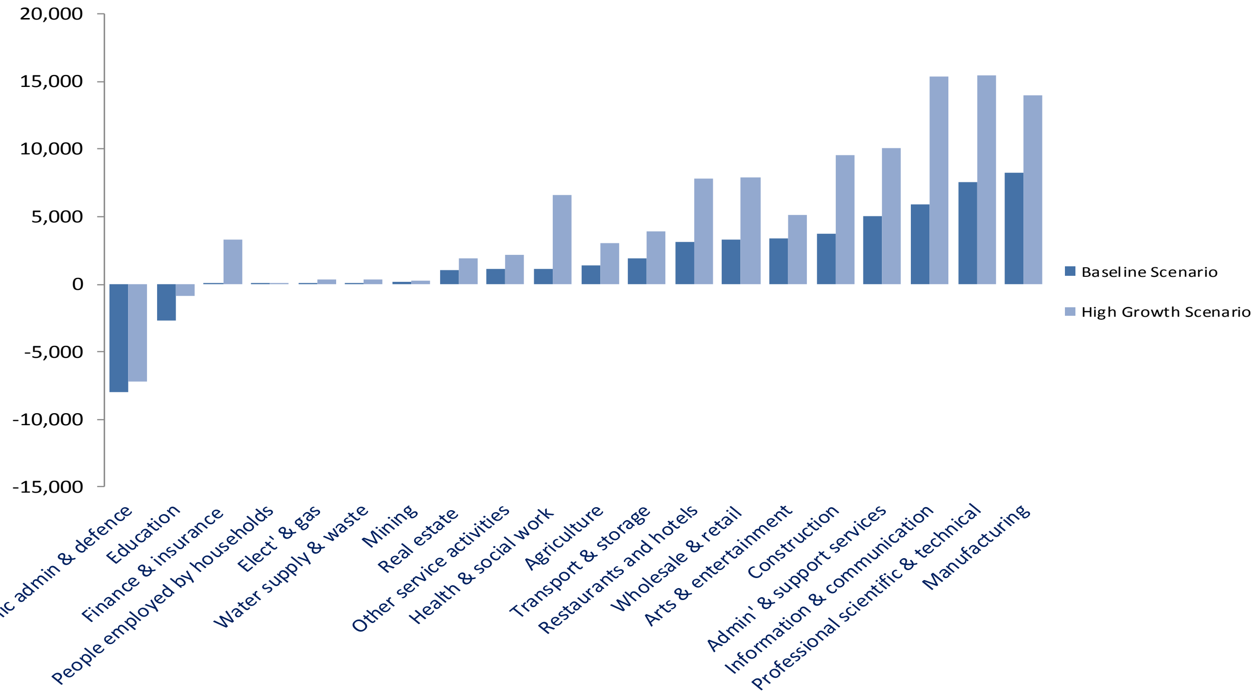
UUEPC’s current baseline macroeconomic forecast is for the NI economy to create approximately 44k jobs over the period 2015-25, which is a relatively subdued job outlook. To place this in context, the NI economy created almost three times as many jobs in the pre-recession decade. Given the sensitivity of skills demand to levels of job creation, it is recognised that if the economy does not achieve high levels of growth, then a skills over-supply could become an issue in some areas.

However**, if Northern Ireland is to achieve its economic ambitions, a higher level of economic growth and job creation will be required**. It is prudent to plan skills provision on an aspirational basis to avoid future skills shortages.

Reflecting upon this UUEPC have developed an aspirational ‘high growth’ scenario. All data presented in this briefing relates to this high growth scenario.

Under the high growth scenario is assumed that the NI economy will create approximately 96k jobs over the period 2015-25. The levels of employment growth assumed in the high growth scenario have been set at a level that would bring the overall Northern Ireland (NI) employment rate closer to the UK average. In addition, there has been a particular emphasis on export focused sectors such as manufacturing, professional services and ICT. Figure 1 overleaf illustrates the differences between the baseline and high growth scenarios at a sectoral level.

Figure 1: Total employment change 2015-25 (by 1 digit SIC[1])



Source: UUEPC

The demand for skills

To estimate the demand for skills the high growth scenario must be converted into ‘people based’ terms, reflecting the fact that a number of people in the economy have more than one job. Under the high growth scenario the number of people in employment will increase from 831k in 2015 to 918k in 2025. The resulting demand implications are summarised in Figure 2 overleaf.

On this basis, it is assumed that the labour market will create on average 85,200 job opportunities per annum (referred at the ‘Annual average gross demand’). However most of these positions, 55,900, will be filled from within the existing labour market (people moving between firms, from unemployment etc.). **The remainder of these positions, 29,300, are therefore to be filled from education and migration** (referred as the ‘net requirement from education & migration’).

The focus of the Skills Barometer is on identifying the ‘net requirement from education and migration’ to inform the policy decisions on the overall level of provision/ supply.

An important point to reflect upon is the scale of ‘replacement demand’, which represents the majority of job opportunities. Replacement demand refers to the number of positions which become available as a result of staff leaving employment (typically due to retirement, family reasons, ill health or to move to another sector). Therefore **a sector does not necessarily have to be growing at a rapid rate to create job opportunities**. Large sectors where net job creation is forecast to be relatively weak will still create a high number of job opportunities through replacement demand.

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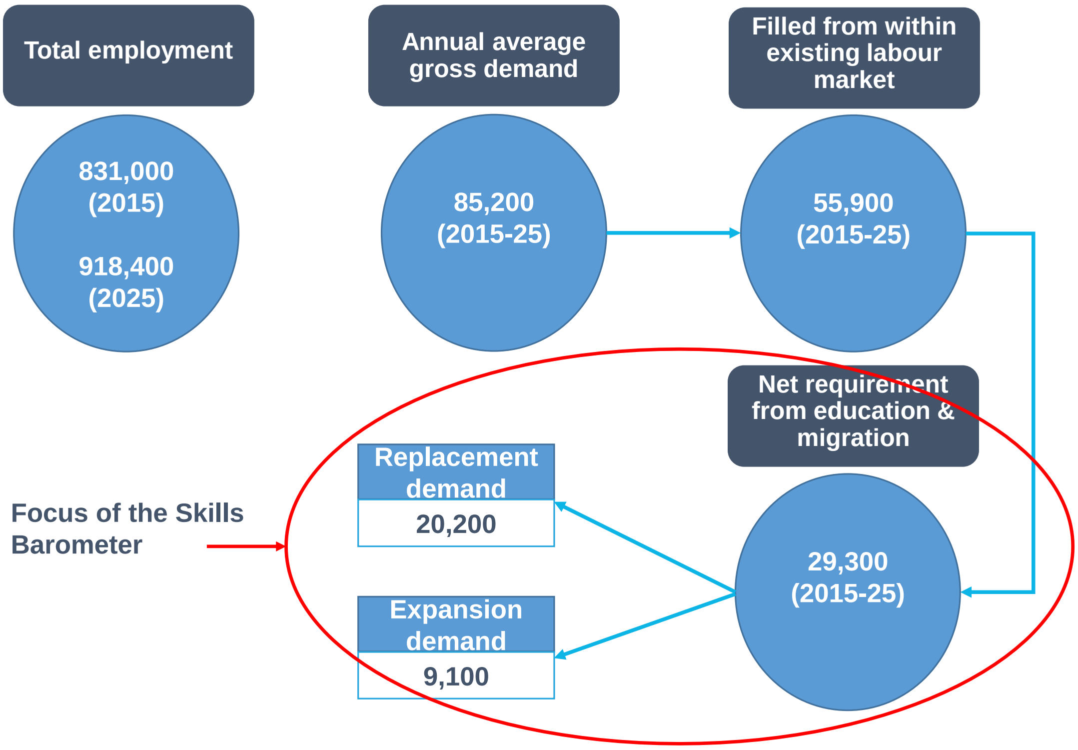
[1] SIC – Standard Industrial Classification codes used by the Office of National Statistics to classify industry sectors (e.g. Public Admin & Defence, Education. Finance & Insurance etc.)

Figure 2: Overview of demand



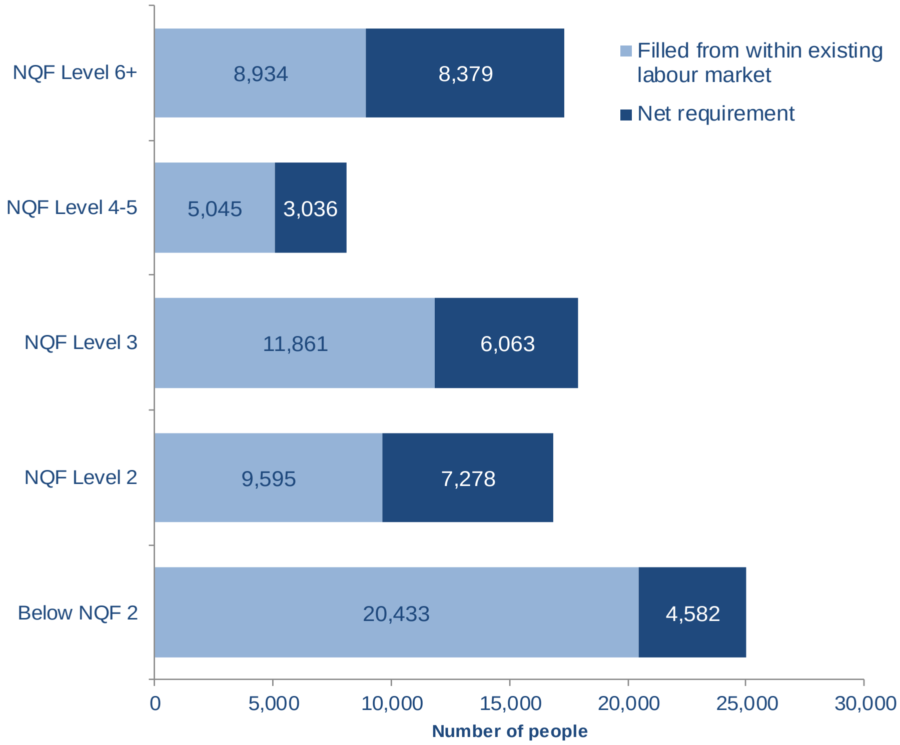
While Figure 2 reflects a high level picture of how the NI labour market operates, it is necessary to disaggregate this information into different skills categories to more accurately inform skills policy. To achieve this we have used the National Qualification Framework, which is summarised in the table below.

Table 1: National Qualification Framework (NQF)

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

Figure 3 below sets out the annual average gross demand (i.e. 85,200) by skill level as defined by the NQF framework above.

Figure 3: Average annual gross demand for skills



Source: UUEPC

Figure 3 highlights a number of interesting points:

Low skills: Overall, there remains a large proportion of low skilled job openings (below NQF L2). However, a very significant proportion of that demand will be met from within the existing labour market (by people moving between jobs or moving from unemployment to employment). Demand for people with low/ no skills from education and migration (net requirement) is small, accounting for only 16% of the net requirement.

Graduate level skills are high in demand: Almost 40% of the 29,000 annual net requires a tertiary level qualification (i.e. NQF level 4 and above).

The supply of skills

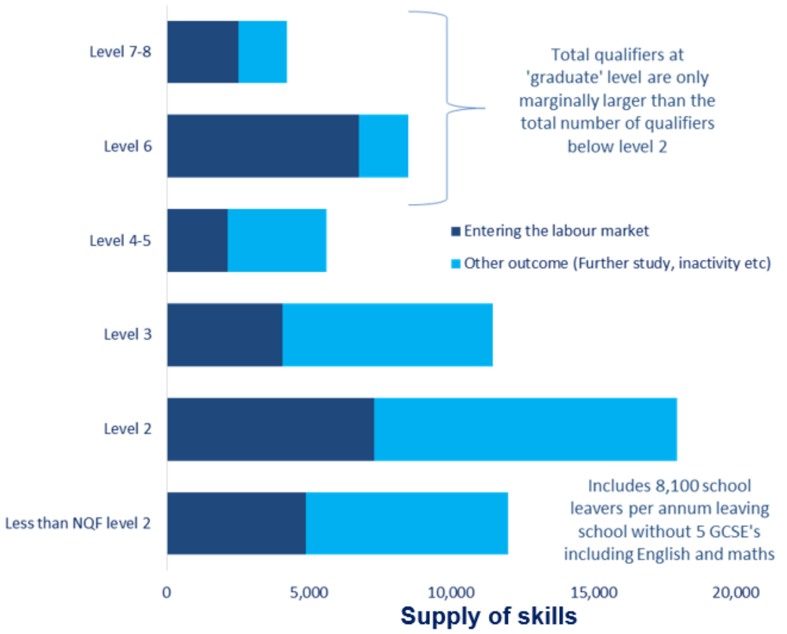
Across NI's school, Further Education (FE) and Higher Education (HE) systems in the coming decade there are forecast to be approximately 60,000 qualifiers per annum (Figure 4 below). However, not all qualifiers enter the labour market. Many qualifiers proceed to further study (e.g. A-level qualifiers proceeding to university etc.). Once other outcomes have been accounted for there are approximately 28k qualifiers from the education system each year.

Low skills: At a gross level NI still produces too many people with low skills. Based on demographic projections and current levels of performance 12k people per annum are forecast to achieve a qualification at a level lower than NQF level 2. This includes over 8k school leavers per annum who do not achieve 5 GCSE's with grades A-C including English and Maths. When considered alongside the 'demand finding' that only 16% of job opportunities for education leavers are below NQF level 2 a continuation of the status quo will create significant labour market challenges.

Sub degree level: NQF level 4-5 qualifiers represent less than 10% of all qualifiers, with a high proportion of those qualifiers progressing to further study and delaying entering the labour market. Within the FE sector less than one third of qualifiers gain achieve a qualification above NQF level 2 highlighting a relatively low supply of 'mid-level' skills.

Degree level: NQF level 6+ qualifiers account for 21% of all qualifiers and 34% of qualifiers entering the labour market. This is attributable to the relatively smaller proportion of degree holders who continue to further study.

Figure 4: Average annual gross demand for skills

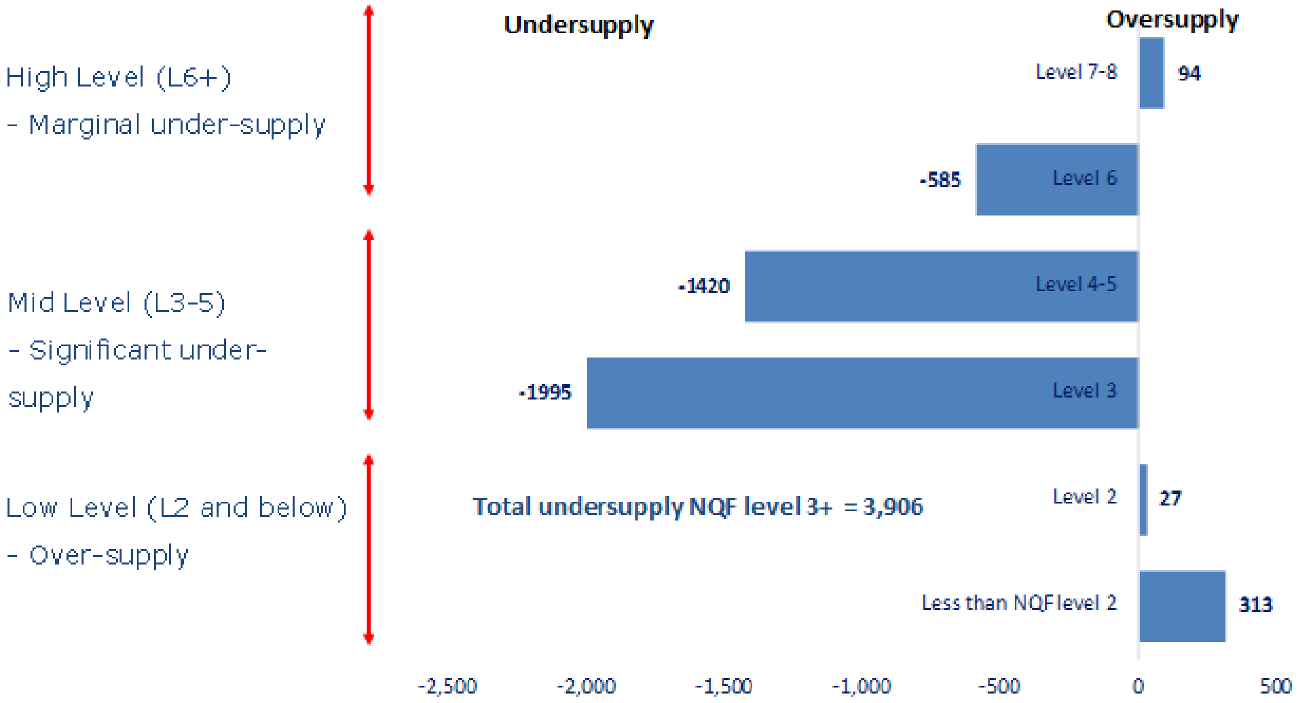


Source: DEL, DE, UUEPC

The supply/demand (im)balance

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. The scale of the annual average supply gap for the 2015-2025 period is set out in Figure 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.

Figure 5: Annual Average Labour Market Supply Gap



Source: UUEPC

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. The public sector plays a crucial role in the recruitment of those with higher skills. It currently accounts for 45% of the tertiary educated workforce in NI and accordingly 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. 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.

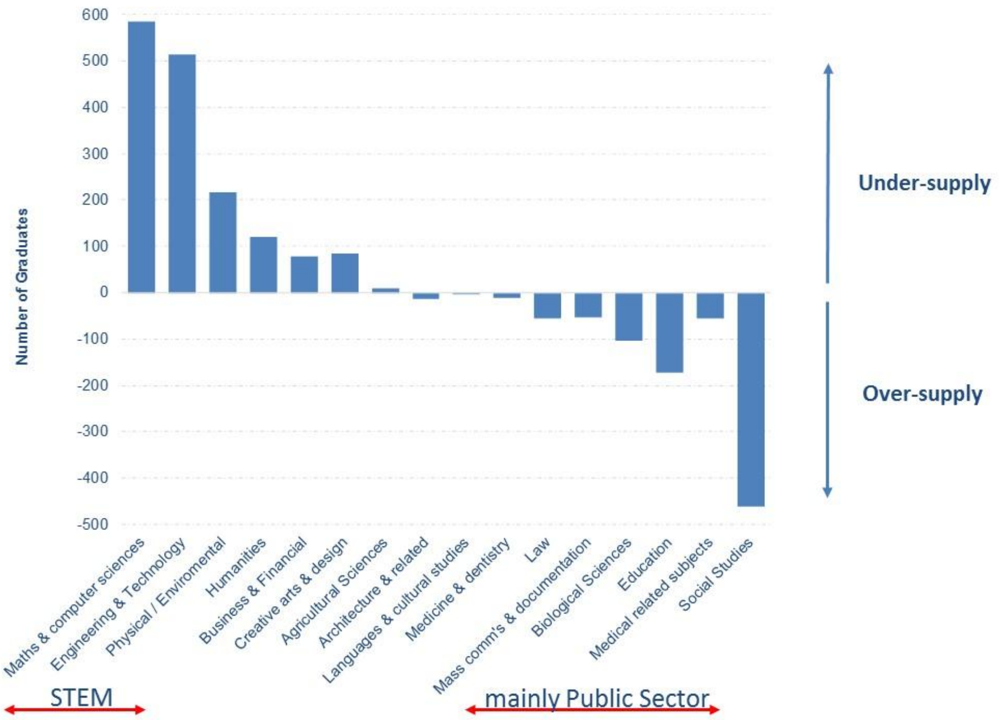
Over-supply of low and no skills (NQF L2 and below) – the demand for formal qualifications across all areas of the economy will increasingly impact the employment prospects of people with low or no skills.

Supply gap by subject

To calculate supply balances in tertiary education a supply adjustment has been incorporated within the analysis. This accounts for **the need to oversupply** to reflect the fact that some qualifier chose to enter sectors or occupations outside of their core study area and others chose to voluntarily enter non-graduate level employment.

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 6).

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



Source: UUEPC

The STEM related subjects are the most undersupplied, particularly Mathematics & Computer Science and Engineering & Technology. In contrast, areas such as Social Studies and Education are forecast to have the largest levels of over-supply.

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 impact the demand for skills in subject areas popular across the public services**.

At sub-degree level almost all subject areas are undersupplied reflecting the limited level of supply at NQF levels 4-5. The largest supply gaps at this level are in STEM related areas including Engineering, Manufacturing, Science and Maths.

Policy implications

The research has highlighted a number of issues for consideration by policy makers and other stakeholders.

High growth must be delivered: The skills forecasts are based on a "high growth" scenario, however a skills over-supply could occur if these higher levels of economic growth are not achieved. Although the intention is to provide the quantum and level of skills necessary to allow NI to reach its economic aspirations, it is also recognised that large numbers of skilled people may leave NI if employment opportunities are not available locally for them. This outcome is preferred to an under-supply of skills which could constrain economic growth in NI and result in higher levels of unemployment.

Young people should stay in education to a tertiary level: Demand for lower level skills is reducing and it is forecast that there will be an over-supply of young people leaving education with low or no skills (NQF Level 2 or below). Given the undersupply at the mid-skills level (NQF L3, 4 and 5), it is critical that people are encouraged to continue their education into tertiary level or other training provision.

Austerity has skills implications: Lower levels of government spending and possible recruitment freezes will have implications in terms of reduced demand for skills in the public sector. Given the historic scale of higher skilled recruitment into the public sector, over supply could be an issue into the medium term. Taking a positive perspective, a reduction in public sector recruitment should create greater supply of higher level skills for the private sector.

Addressing the need to over-supply students: In a difficult funding environment a more efficient way of matching supply and demand should be found. This could include:

- Increasing employability skills development on all courses.
- Giving young people a real life understanding of the career they are seeking to pursue prior to making key decisions.
- Incentivising potential students into subject areas which are under-supplied to raise the quality of the intake in those subjects.
- Providing careers information that ensures young people are appropriately informed about their career decisions.

Managing areas of over-supply: The initial response to the over-supply issue could be to simply reduce provision but this is an area which requires careful consideration. Although it may be necessary to scale back provision in some areas, other policy options could be considered:

- **Selling NI as a FDI location to industries requiring those skills** – There has been some success with this approach in the legal sector but potential exists elsewhere, e.g. healthcare.
- **Existing employers could broaden their search criteria** and consider the skills of people with qualifications in these 'oversupplied' subject areas.
- Education institutions should seek to attract greater numbers of international students to offset any potential reduction in the number of local students in over-supplied areas. This could **utilise the skillsets and capacity of subject delivery in local institutions** for the benefit of the international labour market until a time when local demand returns.
- **Conversion courses for graduates** (e.g. those with at least a 2:1) with qualifications in subject areas which are over-supplied. It is recognised that DEL are currently doing this through a number of approaches including their 'academies programme'.
- The workplace relevant skills developed in oversupplied subject areas should be **clearly articulated and communicated to employers** (i.e. a qualification in an oversupplied subject area may provide a wide range of skills suitable for the labour market in general and not specific to the subject area.)
- **Students considering studying a subject in an oversupplied area should not be discouraged** if it is an area for which they have a strong interest and are passionate about working in. However, they should also understand that they will need to excel in order to progress in that specific area (e.g. in general a 2:2 in an Engineering degree is likely to be more sought after than a 2:2 in a Social Studies degree in the current climate).

Improving the image of FE: There remains a cultural perception in NI that FE (technical/ professional) study is of lower value than HE (academic) study. Other developed economies have successfully created an education system which places equal credibility on both technical/ professional and academic career pathways. If young people are to match their career choices with their abilities, then the image of FE must be considered the equal of HE. One issue impacting the image of FE could be linked to their breadth of provision (NQF Level 1 to Level 6). The potential for FE to focus on mid to high-level skills (e.g. NQF L3 to L5) should be explored with other providers delivering low level skills training. Perhaps lessons could be learned from the experience of Institutes of Technology in the Republic of Ireland.

The importance of employability skills: The importance of employability skills (good communication, team-working, problem solving, professional attitude, critically analyse information; a willingness to learn etc.) has been strongly articulated by employers. This sets a key challenge for education institutions to integrate the development of these skills into course delivery. However, this also requires a commitment from employers to provide placement and internship opportunities for students in order to develop employability skills in the workplace.

Enhanced careers information and guidance: The Skills Barometer should be used to provide young people and their careers advisors with information to help in making important career decisions. The aim is for young people to make well informed decisions based on the likely employment outcomes of different subject courses.

Employers should articulate their skills needs in a collective way: It is important that employer groups work together to provide a consistent message to Government in terms of the skills requirements for their sector. This is more relevant where a sector has a number of organisations representing its interests and providing input to Government policy. It is also important employers are realistic about the skills which can be developed in an education environment and those skills which can only be effectively developed in the workplace.

Sector Attractiveness: It is recognised that graduates/ qualifiers in STEM related subjects are in demand across a wide range of sectors. As a result sectors such as engineering and ICT have an increased need to increase the attractiveness of their sectors to potential/ future employees.

Cost of undersupplying skills: The Skills Barometer has set ambitious employment growth assumptions and the associated demand for skills because the cost of undersupplying skills to the economy would be significant. In particular, economic growth would be constrained, the skills mismatch would result in a continued loss of talent to employment opportunities overseas and higher levels of unemployment could result in the local economy. In addition, a shortage of skills could also lead to employers sourcing skilled labour from overseas or shift investment from local facilities to their overseas operations.

Setting appropriate funding incentives for education institutions: The current funding model encourages a high throughput approach and high levels of student retention. However, if Government want to encourage improved outcomes (e.g. higher employment outcomes), then the funding regime should incentivise and reward those outcomes.

Further detail

The research outputs from the Skills Barometer are available from the following web address: https://www.delni.gov.uk/publications/ni-skills-barometer