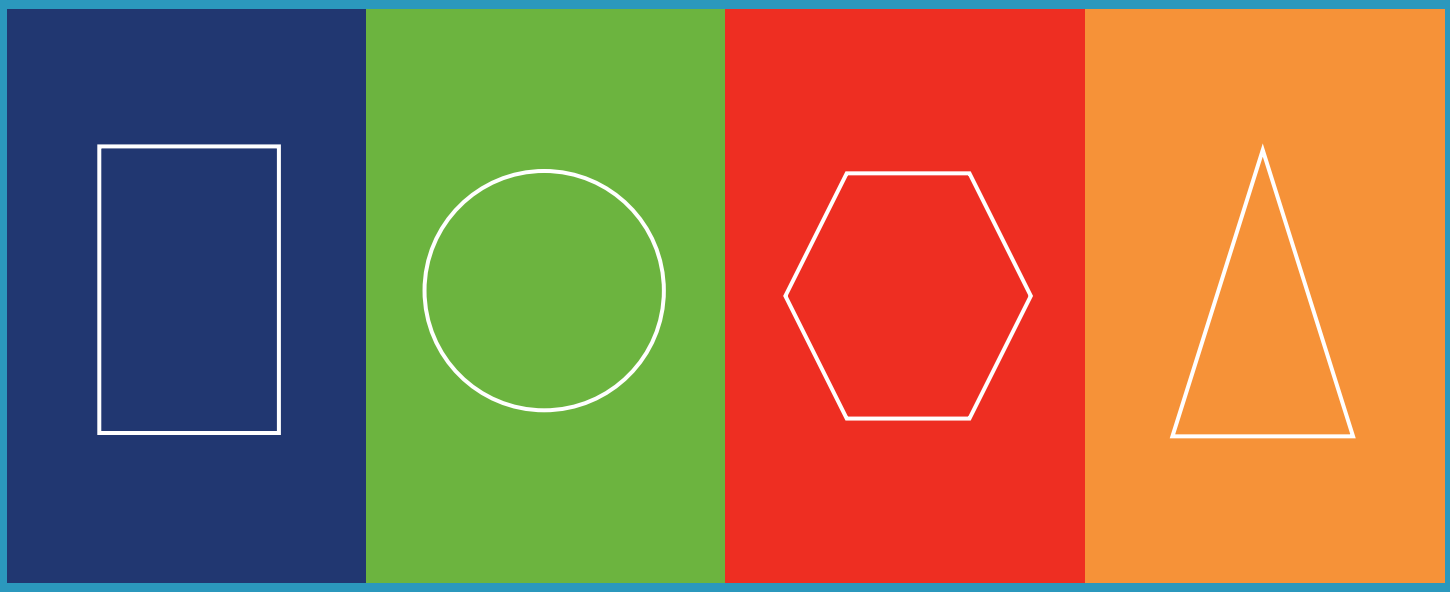

Monitoring Ireland's Skills Supply

Trends in Education and Training Outputs

July 2015

SOLAS
An tSeirbhís Oideachais Leanúnaigh agus Scileanna
Further Education and Training Authority

Expert Group on
Future Skills Needs

Monitoring Ireland's Skills Supply

A report by the Skills and Labour Market Research Unit (SLMRU) in SOLAS for the Expert Group on Future Skills Needs

2015

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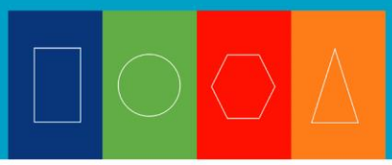
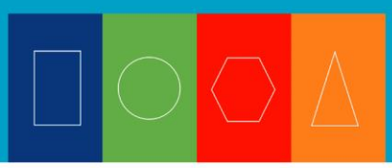


Table of contents



Foreword

Monitoring Ireland's Skills Supply 2015 is the tenth in a series of annual publications produced by the Skills and Labour Market Research Unit in SOLAS on behalf of the Expert Group on Future Skills Needs. The report aims to provide an indication of the current and future supply of skills available in Ireland.

This year, the format of *Monitoring Ireland's Skills Supply* has been revised: while retaining an analysis of inflows and outflows to the education/training system, the report also draws on data from the CSO's Quarterly National Household Survey in order to provide a skills profile of the population in terms of field and level of education. In addition, the report is now organised according to field of learning.

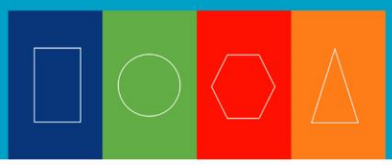
For each field of learning, the report outlines the number of qualification holders in terms of their level of education (i.e. post-secondary or third level), their chances of being in employment, the occupations and sectors in which they are likely to be employed, and whether they are likely to work in an occupation related to their qualification. It also looks at how young graduates fare in terms of first destinations following graduation. In order to provide an indication of the potential future supply entering the labour market, outputs from Ireland's education and training system by detailed field and level are provided.

The report shows that there is great variance in employment outcomes, depending on the field of a person's qualification. For instance, those who held post-secondary/third level qualifications in agriculture or engineering related areas were the most likely to be in employment, whereas those with qualifications in arts/humanities were the least likely. Those with qualifications in education and health/welfare were most likely to be employed in a field relating to their highest level of education.

By placing the focus on both field and level of learning, the report provides an indication of the potential supply of skills available to work in different sectors and occupations in the economy. It is therefore closely linked to the annual National Skills Bulletin, which examines the demand for skills in Ireland. As such, the report provides key information for those involved in policy formulation in the areas of education/training and employment, as well as for career guidance professionals.

Una Halligan,

Chairperson, Expert Group on Future Skills Needs



Key findings

1. Skills Profile of the Population

Age: There are fewer younger people in the population

- The number of 20-29 year olds in the population fell significantly (-26%, or 200,000 fewer persons) between quarter 4 2009 and quarter 4 2014; this was partly due to a fall in the number of births in the 1990s, although outward migration has also negatively affected those aged 15-24 and 25-44 far more than any other age group.
- Ireland's share of 20-29 year-olds in 2014 was smaller than the EU average, particularly for those aged 20-24.

Level: There has been a shift in the education profile towards higher educational attainment

- The younger age cohorts are more highly qualified: a half of those aged 25-39 years held third level qualifications compared to less than a quarter of those aged 60-64 year olds.
- Between quarter 4 2009 and quarter 4 2014, the number of third level graduates grew for each age cohort between 30-64 years while there were declines in the numbers with upper secondary education or less.
- The drop in the number of persons aged 20-29 years in the population between quarter 4 2009 and quarter 4 2014 occurred across all levels of education but was particularly noticeable for those with upper secondary education or less (-92,000) and third level qualifications (-54,000).
- In 2014, at 38%, Ireland had the third highest share of third level graduates across the EU 28 countries (after Luxembourg and Cyprus), well above the EU average of 27%.
- The likelihood of being in employment increased with educational attainment with shares in employment at 56% for those with at most a Leaving Cert and rising to 81% for third level graduates in quarter 4 2014.

Field: Employment outcomes vary across fields of education

- Of those persons aged 20-64 years with post-secondary or third level qualifications, social science, business and law (SSBL) accounted for the largest number of persons (400,000) followed by engineering, manufacturing and construction (250,000 persons); for each field excluding agriculture, third level graduates outnumbered post-secondary qualification holders.
- Post-secondary:
  - Engineering accounted for the majority of post-secondary education holders at 110,000, followed by SSBL (67,000) and health and welfare (51,000)
  - Those with agriculture qualifications had the highest share in employment (88%), followed by engineering (77%); arts/humanities the highest share of persons unemployed (15%)
  - Approximately three quarters of all employed persons with qualifications in engineering, SSBL and agriculture were working in a related field
  - Between quarter 4 2009 and quarter 4 2014, there was a net increase of 3,000 qualification holders; health and welfare accounted for 24,000 additional qualification holders, offsetting the declines in social sciences, engineering, manufacturing and construction, and general programmes.

- Third level:
  - SSBL accounted for the majority of third level qualification holders (aged 20-64) at 350,000, followed by health and welfare (153,000) and engineering related (144,000)
  - Engineering and agriculture award holders had the highest shares in employment at 84% each; arts/humanities had the highest share classified as unemployed (7%)
  - Health/welfare and education qualification holders were the most likely to be employed in a field related to their qualification at 77% and 74% respectively; at 16%, arts/humanities award holders were the least likely to be employed in a related field
  - Education and health/welfare qualification holders were also the most likely to be employed in professional occupations at 77% and 64% respectively (compared to a 37% share for all third level award holders)
  - Between quarter 4 2009 and quarter 4 2014, there was a net increase of 120,000 third level award holders (aged 20-64); of these, social science, business and law graduates accounted for the largest absolute rise, adding almost 40,000 qualification holders; this was followed by health and welfare which added an extra 24,000.

2. Education and Training Outputs

- Table A1 shows that there were almost 211,000 awards spanning levels 1-10 on the NFQ from Ireland's education and training system in 2014 (2013 for higher education).
- As detailed in Table A2, the highest number of awards made were in social science, business and law (34% at level 8), followed by health/welfare (37% at level 5).
- Not included in these tables are 5,000 higher education awards made to learners outside the HEA-aided sector (e.g. private providers) made by Quality and Qualifications Ireland (QQI) in 2014.

Table A1 Summary of further and higher education and training awards by field, 2014[11]

	NFQ 1/2	NFQ 3	NFQ 4	NFQ 5	NFQ 6	NFQ 7	NFQ 8	NFQ 9/10	Total
SEC (Junior Cert)	-	60,300	-	-	-	-	-	-	60,300
SEC (Leaving Cert)	-	-	57,000		-	-	-	-	57,000
QQI-FE (Major awards)	1,720	2,590	1,990	17,460	4,740	-	-	-	28,500
Institutes of Technology	-	-	-	-	3,100	8,110	11,000	2,310	24,520
Universities/colleges	-	-	-	-	2,530	1,580	19,600	16,500	40,200
Total	1,720	62,890	76,450		10,370	9,690	30,600	18,810	210,520

Source: State Examinations Commission (SEC); Quality & Qualifications Ireland (QQI); Higher Education Authority (HEA)

[1] HEA higher education awards refer to 2013.

Table A2 Summary of further and higher education and training awards by field, 2013[1]

Field	NFQ 1-2	NFQ 3	NFQ 4	NFQ 5	NFQ 6	NFQ 7	NFQ 8	NFQ 9/10	Total
General	1,720	1,430	220	-	170	-	-	70	3,600
Education	-	-	-	-	120	80	1,910	3,140	5,250
Arts & Humanities	-	680	760	1,810	670	860	5,850	2,040	12,660
Social Science, Bus & Law	-	460	670	4,570	2,550	2,240	8,810	6,500	25,800
Science & Computing	-	-	-	200	480	1,380	4,180	2,690	8,930
Engineer & Construction	-	30	-	380	2,210	2,080	3,220	1,030	8,950
Agri & Veterinary	-	-	200	1,720	440	350	520	100	3,310
Health & Welfare	-	-	40	7, 130	2,400	1,480	5,350	3,020	19,420
Services	-	-	100	1,660	1,330	1,230	750	240	5,310
Total	1,720	2,600	1,990	17,470	10,370	9,700	30,590	18,830	93,230

Source: QQI (FE Major Awards); HEA

Trends in Further Education and Training Output- despite fluctuations, broadly the same level as 2009

- In 2014, there were 28,500 major awards made by QQI to FET learners across levels 1-6 on the NFQ; gains made between 2009 and 2012 were offset by declines in more recent years; as a result, the number of FET awards in 2009 and 2014 were broadly similar.
- Between 2009 and 2014, the distribution of awards by field shifted slightly, with an overall increase in social science, business & law, health/welfare, and arts/humanities (including general learning) and a decrease in the number of awards in science/computing, engineering etc., and services.

Trends in Higher Education Output-20% increase in awards in five year period

- The number of higher education awards (NFQ 6-10) made to learners at IoTs and universities rose annually, going from over 54,000 in 2009 to almost 65,000 in 2013.
- Increases occurred across most fields of learning, but were particularly strong for science & computing (an extra 2,700 awards, mostly at levels 8-10) and social science, business and law (an extra 2,500 awards mostly at levels 8 and above).
- In 2012, when compared to the EU 28 countries, Ireland had a higher than average share of graduates in science & computing and arts/humanities; Ireland had a lower than average share in social science, business and law; for all other fields, Ireland's share was within one percentage point of the EU 28 average.

Higher Education Inflows: CAO Acceptances and Postgraduate Enrolments

- The number of CAO acceptances has been increasing at level 8 but declining at levels 6 and 7; increases are being driven mainly by growth in computing along with social science, business and law, and health/welfare.
- At postgraduate level, there was a slight increase in enrolments when compared to 2009; there was a shift in the field of learning for enrolments, however, with a decline in the number of arts/humanities, engineering etc., and services enrolments and increases in all other fields (particularly in social science, business and law, health/welfare, and education).

Destination of young graduates

- The HEA's First Destination Survey (2013) showed that nine months after graduation,
  - at level 8, computing third level graduates had the high share in employment in Ireland; education and health/welfare graduates had the highest share in employment overseas; arts/humanities graduates were the most likely to be engaged in further studies
  - at levels 9/10, computing graduates again had the highest share in employment in Ireland with education graduates the highest share in employment overseas; services graduates (e.g. sports, catering) had a much higher share than average seeking employment.
- The CSO's QNHS shows that of those 25-29 year olds who held post-secondary or third level education:
  - SSBL accounted for the highest share of graduates at 28%
  - Education graduates had the highest share in employment (89%) with the lowest shares for science and computing (70%) and general programmes (50%); science and computing graduates also had the highest share classified as not active (mainly students)
  - There was a fall of 50,000 in the number of 25-29 year old graduates between quarter 4 2009 and quarter 4 2014, relating to a decline for those in SSBL (-22,000) and engineering (-16,000); during this period, the overall number classified as students increased by 38%, primarily related to an increase in the number of students in SSBL and health and welfare.

3. Outlooks

Science and computing

- Labour market outcomes for those with **science** qualifications are positive: they have a high share in employment (particularly for those with post-graduate qualifications) in high skilled occupations; however, few graduates (particularly the younger cohorts) find work in science related fields indicating either a lack of opportunities or the transferability of the qualification to other areas (e.g. teaching, business and engineering).
- Labour market outcomes for **computing** qualification holders are very positive: there is a strong demand for computing skills in the labour market, particularly in professional occupations, and the highest shares in employment (even among the younger cohorts) are a reflection of these opportunities; while the output from the education system is continuing to increase, it is not sufficient to meet current demands.

Engineering

- The collapse of the construction industry had an impact on employment opportunities for those with engineering, manufacturing and construction related qualifications, especially at post-secondary education level; these difficulties were primarily related to those working in construction related occupations.
- However, labour market opportunities were more positive for third level qualification holders, although this may entail working in an unrelated field (particularly for the younger cohorts).
- The anticipated recovery in the construction sector and the continued growth in engineering related areas should lead to positive outcomes for those with qualifications (both post-secondary and third level) in these areas.

SSBL

- As those with SSBL qualifications are employed across a wide range of occupations and sectors, the outlook for future employment opportunities is difficult to predict; however, there are many business related occupations which have been identified as experiencing shortages and growth prospects are positive for the financial and professional services sectors (which combined employ 10% of SSBL post-secondary qualification holders and 31% of third level holders).
- The labour market outcomes for third level graduates are positive with graduates employed in high skilled occupations related to their field of study and across a variety of sectors; outcomes for post-secondary education graduates are less favourable with indications that the younger age cohorts are facing challenges in entering the labour market.

Health and welfare

- The labour market outcomes for third level graduates in this discipline are positive (high employment rates with employment mainly in health professional occupations); post-secondary graduate outcomes were less favourable (lower than average share in employment and slightly less likely than their third level counterparts to work in a related field).
- Employment opportunities in the health sector are mostly in government funded activities; although there have been limited opportunities in recent years due to recruitment freezes and tight healthcare budgets, demand for these skills are expected to be sustained and most likely to increase due both to demographic factors and an improved fiscal situation.

Services

- The sectors that services qualification holders tend to find employment in (e.g. accommodation and food services sector) depend heavily on economic conditions; while the evidence shows that services graduates in recent years seem to have experienced some difficulties in securing employment, greater opportunities for these graduates may be expected with the economic recovery, particularly in tourism and hospitality related areas.

Arts and humanities

- There is a high number of people who study arts/humanities (particularly at third level); however, they tend to continue on to further study and tend not to be employed in arts/humanities related areas; as such, their skills may be more flexible in meeting labour market needs but they may also be susceptible to having to accept lower skilled employment as many arts/humanities courses do not have a vocational element.

Education

- While employment rates are high for persons in Ireland with qualifications in education, areas of concern in terms of outcomes for graduates include the high number of those in the younger age cohorts gaining employment overseas, the relatively high number of those under 65 who have retired in the last five years and the high level of transitions in and out of the labour market that has been identified in the National Skills Bulletin.
- As the majority of education award holders are employed in education related occupations, employment opportunities depend very much on government policy and funding; demand for education professionals is also affected by the size of the school going age population; these factors will impact on the demand for teachers in the coming years.

Agriculture

- While the labour market outcomes for agriculture graduates appear positive, these outcomes are associated with a relatively small number of graduates.

1. Introduction

The aim of this publication is to provide a skills profile of the population in terms of field of education and level. Such a skills profile shows the potential pool of skills available to work in different sectors of the economy. It will also help in informing education and training providers of the outcomes associated with graduates in different fields of education over time in order to be of use to those interested in government policies, employers, and Enterprise Ireland and IDA client companies.

The data covers current skills stock, potential future inflows to the labour market, and the destination of young graduates by their latest economic status. These are all analysed by field of learning and level. In addition, there is a further focus on the younger age cohorts as these are most likely to have recently exited full time education and training.

1.1 Education and training awards, levels and field classifications

In this report, education data is classified according to the National Framework of Qualifications (NFQ), International Standard Classification of Education (ISCED) attainment levels and ISCED field of learning, depending on the source of the data.

The NFQ is a system of ten levels used to describe the Irish qualifications system. Each level is based on nationally agreed standards of knowledge, skill and competence and reflects what an individual is expected to know, understand and be able to do following successful completion of a process of learning. Almost all awards made through the state funded sector, and many in the private sector, have been placed on, or are aligned with, the NFQ.

The NFQ is not a classification of education and training programmes. Rather, it describes the awards (and associated learning outcomes) achieved on completion of certain programmes. ISCED attainment levels, on the other hand, are specifically designed to classify education and training *programmes*, taking into consideration various features including programme content, duration, and objectives (e.g. preparation for access to third level or for work in an occupation or a range of occupations etc.).

Education attainment levels, as reported by the CSO, Eurostat and the OECD, are classified according to ISCED levels. Currently, two versions of the ISCED levels classification are in use: all data pertaining to 2014 is classified according to ISCED 2011; data prior to 2014 is classified according to ISCED 1997. In the main, the two versions are broadly comparable, with differences relevant to Ireland emerging only at detailed levels of tertiary education.

In Ireland, data provided by the CSO is reported according to ISCED levels, detailing the highest level of education attained by individuals; in contrast, data from education and training providers is by NFQ level. Table 1.1 lists the main programme types in the Irish education and training system and their corresponding ISCED levels. The table also details the awards typically made to learners on successful completion of these programmes as well as the NFQ level at which these awards are usually made. It should be noted however that there is considerable overlap between the various categories (e.g. awards at Level 6 on the NFQ span both the further and higher education and training system; and the Leaving Certificate awards is placed across level 4 and 5 on the NFQ).

Table 1.1 ISCED levels of education, main programmes in Irish education/training, typical awards and NFQ levels

ISCED 1997 Level	ISCED 2011 Level	Corresponds to:	Typical award	Award NFQ Level
0 Pre-primary education	0 Pre-primary education	Early Start and other pre-primary	QQI Certificate	Level 1/2
1 Primary education	1 Primary education	Primary education		
2 Lower secondary	2 Lower secondary	2nd level education –Junior Cycle	Junior Certificate	Level 3
3 Upper secondary	3 Upper secondary	2nd level education – Senior Cycle	Leaving Certificate	Level 4
				Level 5
4 Post-secondary non-tertiary	4 Post-secondary non-tertiary	Apprenticeship, PLC courses, other FET[2]	QQI Level 5 Certificate	
			QQI Advanced Certificate	Level 6
5 Tertiary level[3]	5 Short-cycle tertiary education	Third level – higher certificate/university diploma	Higher Certificate	
	6 Bachelor's degree or equivalent	Third level – ordinary & honours bachelor degree/higher diploma	Ordinary Degree	Level 7
			Honours Bachelor Degree	Level 8
			Higher Diploma	Level 8
	7 Master's degree or equivalent	Third level – master's degree and postgraduate certs/diplomas	Postgraduate Diploma Master's degree	Level 9
6 Advanced research qualifications	8 Doctor or equivalent	PhD	PhD	Level 10

Source: *Adapted from* ISCED 2011 (UNESCO Institute of Statistics)

[2] Some FET programmes (e.g. some specific skills training) also lead to awards at level 3 or 4 on the NFQ.
[3] Tertiary level in ISCED 1997 further breaks down into Tertiary Type B (higher cert/ordinary degree) and Tertiary Type A (honours degree and postgraduate qualifications except PhD).

Fields of education, as reported by the Higher Education Authority, QQI and the CSO, Eurostat and the OECD, are classified according to ISCED fields of education and training. The ISCED 1997 field of classification describes ten broad fields as detailed in Table 1.2, which also provides examples of awards made in Ireland that typically fall into each category.

For data from the CSO and Eurostat, the field of education is available only for those individuals with post-secondary non-tertiary education attainment and above; however, all data from QQI (as well as HEA data) is categorised by ISCED field.

While the ISCED classification was revised in 2013 (ISCED 2013), it remains compatible with the 1997 version and all data reported by the CSO and the HEA is based on the ISCED 1997 field of education classification. For this report, data from QQI was mapped by the SLMRU to ISCED 1997.

Table 1.2 ISCED fields of education

ISCED 1997 Level (for education attainment)	Includes the following award titles
0 General programmes	QQI Certificate in General learning (NFQ 1-5) Postgraduate Diploma in Life Course Studies (NFQ 9)
1 Education	QQI Certificate in Inclusive Education and Training (NFQ 6) Bachelor (hons) of Education (NFQ 8)
2 Arts/humanities *including* *Music* *Foreign languages* *History*	QQI Certificate in Art (NFQ 5) BA (hons) in European Studies (NFQ 8)
3 Social science, business & law (SSBL) *including* *Psychology* *Journalism* *Wholesale and retail sales*	QQI Certificate in Office Administration (NFQ 5) BBS in Marketing (NFQ 7)
4 Science & computing *including* *Earth science* *Mathematics* *Computer science*	QQI Certificate in Information Technology (NFQ 5) BSc in biotechnology (NFQ 7)
5 Engineering, manufacturing & construction, *including* *Mechanics & metal work* *Food processing* *Architecture and town planning*	QQI Certificate in Craft- Electrical (NFQ 6) Higher Certificate in Engineering in Civil Engineering (NFQ 6)
6 Agriculture & veterinary *Crop & livestock production* *Fisheries*	QQI Certificate in Horticulture (NFQ 4-6) Higher Certificate in Science in Agriculture (NFQ 6)
7 Health and welfare *including* *Medicine* *Pharmacy* *Social work and counselling*	QQI Certificate in Early Childhood Care & Education (NFQ 5-6) BSc (hons) in General Nursing (NFQ 8)
8 Services *including* *Hotel, restaurant and catering* *Transport services* *Security services*	QQI Certificate in Hairdressing (NFQ 5) BA in Culinary Arts (NFQ 7)
9 Unknown or unspecified	-

Source: *Adapted from* ISCED 1997 (UNESCO Institute of Statistics)

1.2 Data

The data in this report is presented according to each of the broad ISCED fields (1-8). For each field, data from the following sources is used

- **The Central Statistics Office (CSO):** demographic data, the education attainment of those in the workforce and the population, and data on the lifelong learning participation rates in the adult population
- **The State Examinations Commission (SEC):** Leaving Certificate examination candidate numbers
- **The Department of Education and Skills (DES):** PLC course enrolment data
- **The Central Applications Office (CAO)**: higher education course choice acceptances
- **Quality and Qualifications Ireland (QQI):** further education and training (QQI-FE) award data; QQI-HETAC award data for those qualifying from non-HEA aided providers
- **The Higher Education Authority (HEA):** higher education enrolments and graduations; first destination survey data
- **The Higher Education Statistics Association (HESA)**: Irish-domiciled higher education graduates in the UK
- **Eurostat:** EU demographic employment and unemployment data
- **SOLAS:** apprenticeships data; further education and training data.

This report focuses on the most recent data available, and where possible, compares it with the situation observed five years earlier. Quarter 4 2014 was available CSO Quarterly National Household Survey (QNHS) data, with quarter 4 2009 used as a comparison point. CAO acceptance data and QQI-FE awards data were available for 2014; the latest available year for higher education data was 2013 (2014 for QQI-HETAC data).

In order to capture the extent to which people work in an occupation related to their field of study, the SLMRU has grouped occupations according to ISCED fields of learning (see Appendix A). Analysing the data according to these categories allows for an examination of the extent to which qualification holders are employed in areas related to their qualification.

Note: for ease of reading, the post-secondary non-tertiary education category (e.g. PLC course or apprenticeship level education and training) will be referred to as post-secondary level.

2. Skills supply: profile of the population

The aim of this chapter is to provide the education profile of Ireland's population. The data is provided by age and education level as these variables influence the entry point to the education and training system and labour market activity. The field of education is also provided as this is a key indicator of the type of skills available to prospective employers and education and training providers in terms of graduate destination and lifelong learning.

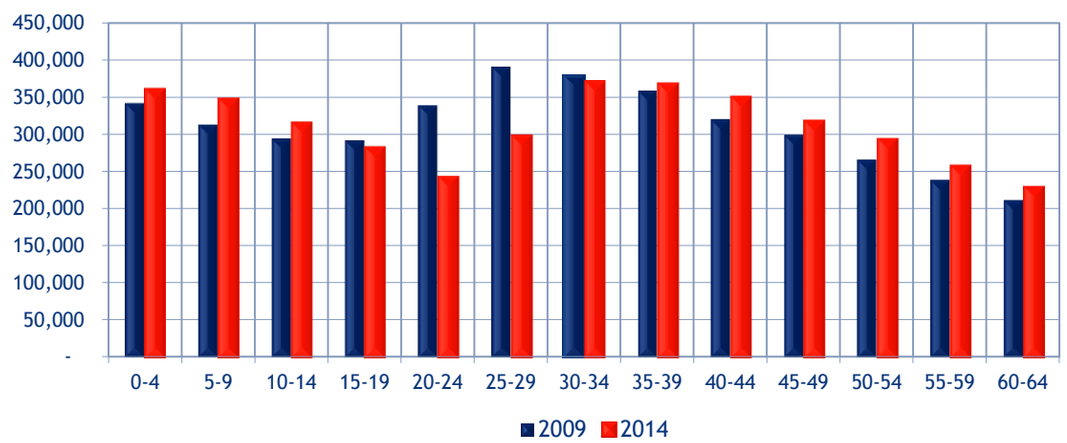
2.1 Profile of the population by age, education level and field of learning

2.1.1 Population

Figure 2.1 shows that between quarter 4 2009 and quarter 4 2014, there was

- An increase in the population aged between 0 and 14 years
- A drop of almost 200,000 (or 26%) in the number of 20-29 year olds in the population
- Ageing of the older population cohorts i.e. particularly from 40 years onwards

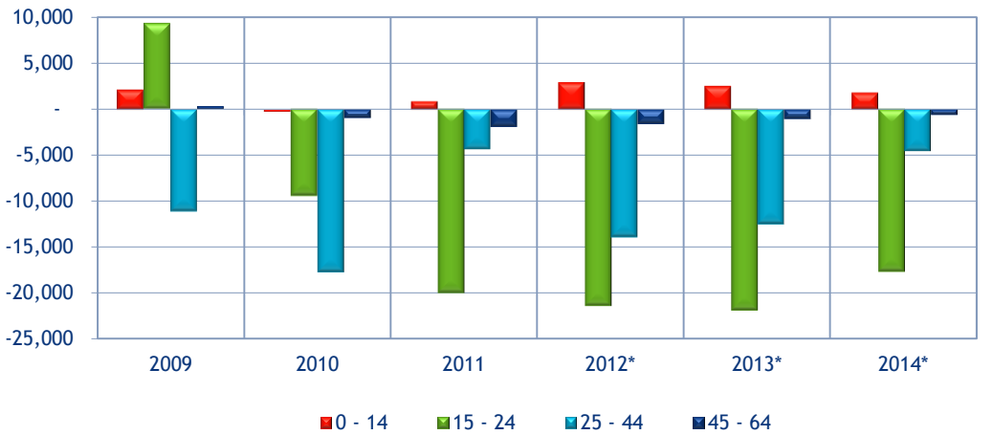
Figure 2.1 Population by age group (0-64), quarter 4 2009 and quarter 4 2014



Source: SLMRU (SOLAS) analysis of CSO data

Migration: the significant fall in the number of 20-29 year olds observed between 2009 and 2014 is partly due to a fall in the number of births in the 1990s, although outward migration is shown in Figure 2.2 to have negatively affected those aged 15-24 and 25-44 far more than any other age group. While showing signs of easing, migration remains negative for these age groups.

Figure 2.2 Net migration estimates by age group (0-64), 2009-2014



Source: CSO Population and Migration Estimates April 2014

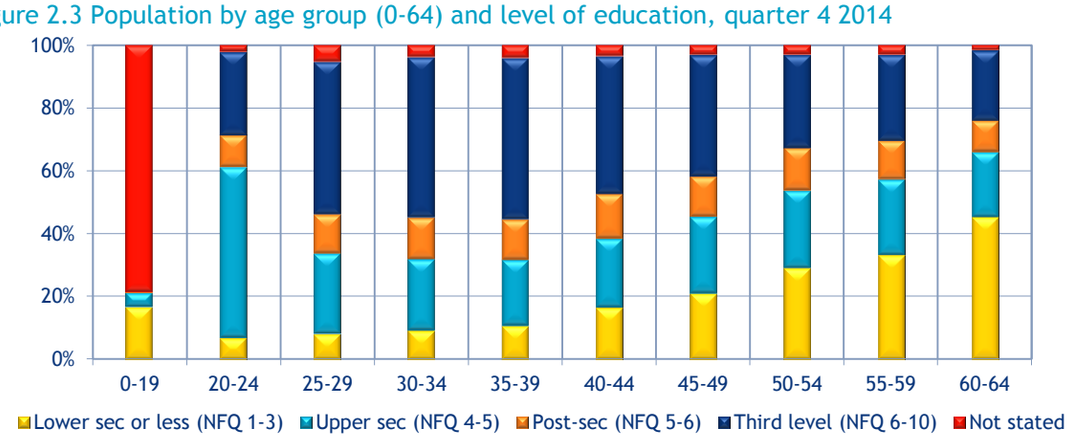
* Data for 2012, 2013 and 2014 is preliminary

2.1.2 Education level

In quarter 4 2014 the majority of those aged 0-19 years had upper secondary education or less, suggesting that many in these age groups have not yet completed full-time education. For this reason, those aged 0-19 years are excluded from further analysis. Figure 2.3 shows that in quarter 4 2014,

- 60% of those aged 20-24 years had attained at most upper secondary education
- The education profile for each of the age groups between 25 and 39 years is similar; these have the highest shares of third level graduates (at approximately 50% each)
- Older cohorts are less likely to be third level graduates: for each five-year age groups from 35 years onwards, the share of third level graduates declines, going from 51% to 22% for the 60-64 age cohort
- There was little variation in the share of those with post-secondary education, with an average of 12% in each age cohort from 20 years onwards.

Figure 2.3 Population by age group (0-64) and level of education, quarter 4 2014

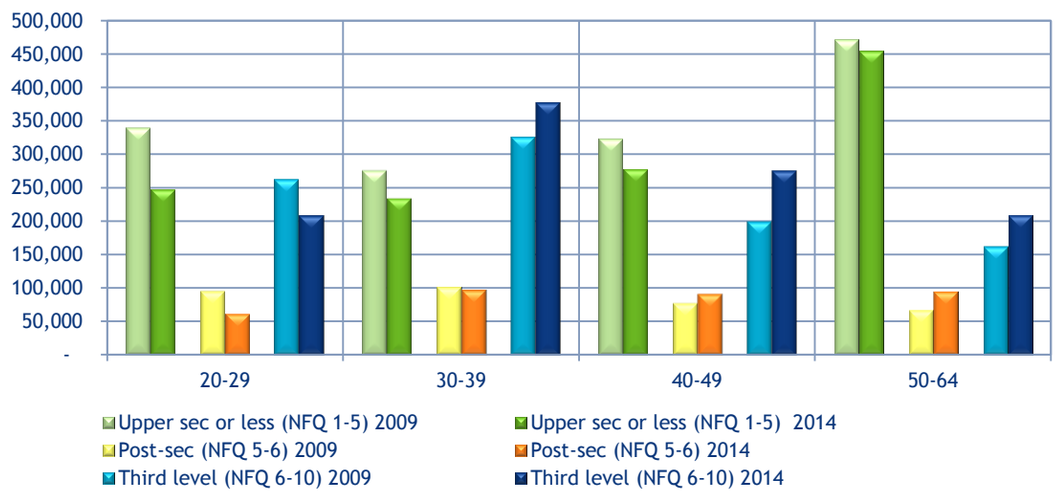


Source: SLMRU (SOLAS) analysis of CSO data

How the drop in population affected 20-29 year olds in terms of education: between quarter 4 2009 and quarter 4 2014, the drop in the number of persons aged 20-29 years in the population occurred across all levels of education but was particularly noticeable for those with upper secondary education or less (-92,000) and third level qualifications (-54,000).

There has been a shift in the education profile towards higher educational attainment for those aged 30 years and over: when compared to quarter 4 2009, the number of third level graduates aged 30-64 was higher in quarter 4 2014 in each age group; there were corresponding declines in the numbers with upper secondary education or less (Figure 2.4).

Figure 2.4 Highest level of education attained by age group (20-64 years); quarter 4 2009 & quarter 4 2014



Source: SLMRU (SOLAS) analysis of CSO data

Of those with third level qualifications, over a half had attained ISCED level 6 (ordinary/honours bachelor degree/higher diploma) with a further 30% attaining ISCED level 5 (higher cert/university diploma) in quarter 4 2014. As detailed in Table 2.1, the higher the level of education, the higher the share in employment with 86% of all ISCED 8 (i.e. PhD) graduates in employment.

Table 2.1 Third level graduates (20-64) by detailed education level (ISCED 2011) and % in employment, quarter 4 2014

	Total Q4 2014	% in employment	% of total third level grads
Higher cert/university diploma (ISCED 5)	317,700	77%	30%
Ord/hons bachelor degree/higher dip (ISCED 6)	549,300	81%	51%
Masters/postgrad cert/dip (ISCED 7)	187,200	85%	17%
PhD (ISCED 8)	17,900	86%	2%
Total	1,072,100	81%	100%

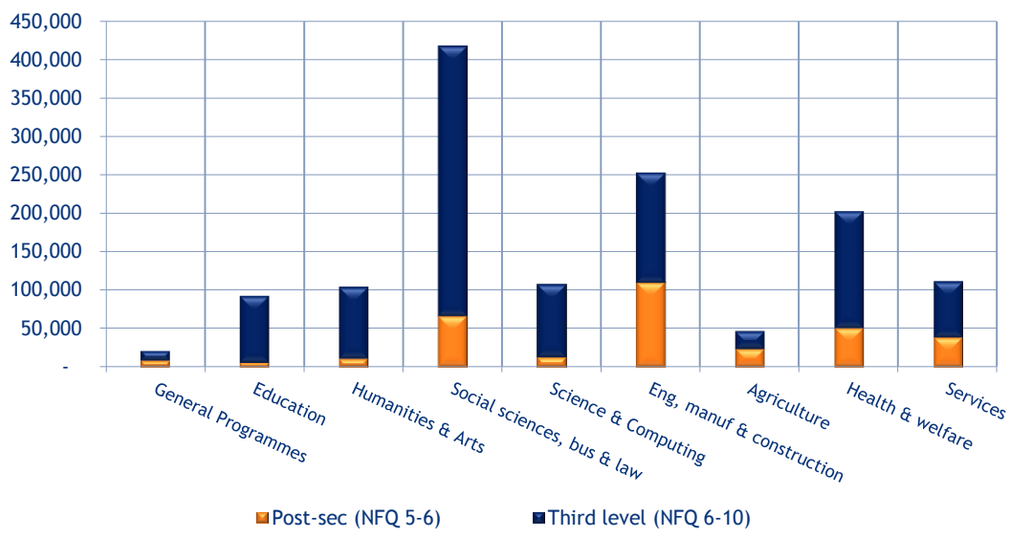
Source: SLMRU (SOLAS) analysis of CSO data

2.1.3 Education field

There were approximately 1 million persons with third level qualifications and 320,000 persons with post secondary qualifications in the 20-64-year old age cohort in quarter 4 2014. Figure 2.5 shows that,

- social sciences, business and law accounted for the largest number of persons who held either a post-secondary or third level qualification; this is followed by engineering and health and welfare
- for each field excluding agriculture, third level graduates outnumbered post-secondary qualification holders
- in absolute terms, engineering, manufacturing and construction had the largest numbers of post-secondary qualification holders at 110,000.

Figure 2.5 Field of highest level of education (post-secondary and third level) (20-64 year olds), quarter 4 2014



Source: SLMRU (SOLAS) analysis of CSO data

Between quarter 4 2009 and quarter 4 2014

- Third level: there was a net increase of 120,000 third level graduates; of these, social science, business and law graduates accounted for the largest absolute rise, adding almost 40,000 graduates; this was followed by health and welfare which added an extra 24,000.

- Post-secondary level: there was a net increase of 3,000 qualification holders; health and welfare accounted for 24,000 additional qualification holders, offsetting the declines in social sciences, engineering, manufacturing and construction, and general programmes.

2.1.4 Employment status by education level and field

This section looks at how education level and field of learning relates to labour market status. Table 2.2 shows that between quarter 4 2009 and quarter 4 2014,

- **Employed:** The higher the educational attainment, the higher the employment rates; this pattern held across both time periods, with small percentage point gains for those with post-secondary and third level education
- **Unemployed:** The share unemployed was lowest for those with third level qualifications across both time periods with the shares unemployed declining for each education level since quarter 4 2009
- **Not active:** At 35% in quarter 4 2014, those with upper secondary education or less had the highest share of persons not active in the labour market, with third level graduates having the lowest share.

Table 2.2 Highest level of education by employment status, 20-64 year olds, q4 2009 & q4 2014

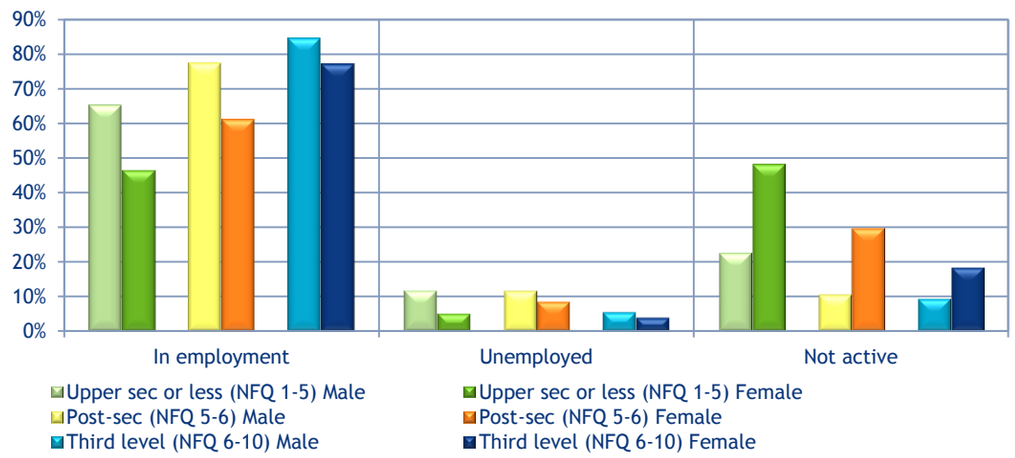
	Q4 2009				Q4 2014			
	In Employment	Unemployed	Not Active	Total	In Employment	Unemployed	Not Active	Total
Upper secondary or less (NFQ 1-5)	56%	10%	34%	100%	56%	9%	35%	100%
Post-secondary (NFQ 5-6)	67%	14%	20%	100%	70%	10%	20%	100%
Third level (NFQ 6-10)	80%	6%	14%	100%	81%	5%	15%	100%
Total	66%	9%	25%	100%	68%	7%	25%	100%

Source: SLMRU (SOLAS) analysis of CSO data

The breakdown by gender for quarter 4 2014 (Figure 2.6) shows a significant discrepancy in the employment status of males and females.

- At all levels of education, males had a higher share of persons in employment, with the largest gap between those with upper secondary education or less (a 19 percentage point gap).
- Females were less likely to be categorised as unemployed but far more likely to be classified as not active in the labour market, again particularly in the case of those with upper secondary education or less; at 60%, not active females across all education levels were most likely to be engaged in home duties (compared to 3% for males) whereas males were more likely to be classified as students (28% compared to 14% for females).
- Between quarter 4 2009 and quarter 4 2014 the overall distribution did not change significantly.

Figure 2.6 Highest level of education by employment status and gender, 20-64 year olds, q4 2014

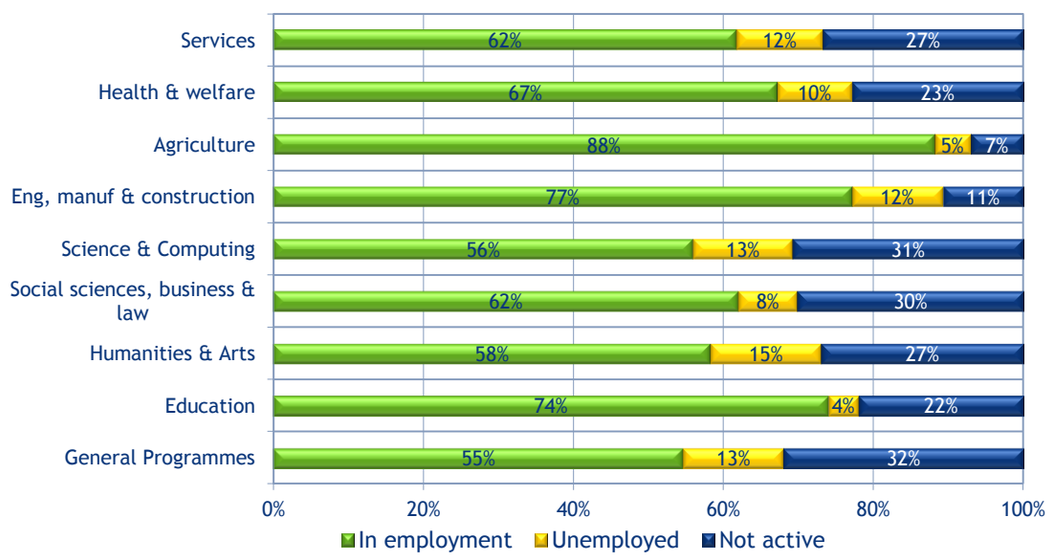


Source: SLMRU (SOLAS) analysis of CSO data

For those persons with **post-secondary education** in quarter 4 2014 (Figure 2.7a):

- Only those with qualifications in education, engineering and agriculture had a higher share in employment than the average for this cohort (70%)
- The shares unemployed were highest for those from science and computing, general programmes and arts/humanities disciplines although the numbers involved were small
- Almost a third of persons from general programmes and the science and computing discipline were classified as not active.

Figure 2.7a Field of highest level of education (post-secondary) by employment status, (20-64 year olds), quarter 4 2014

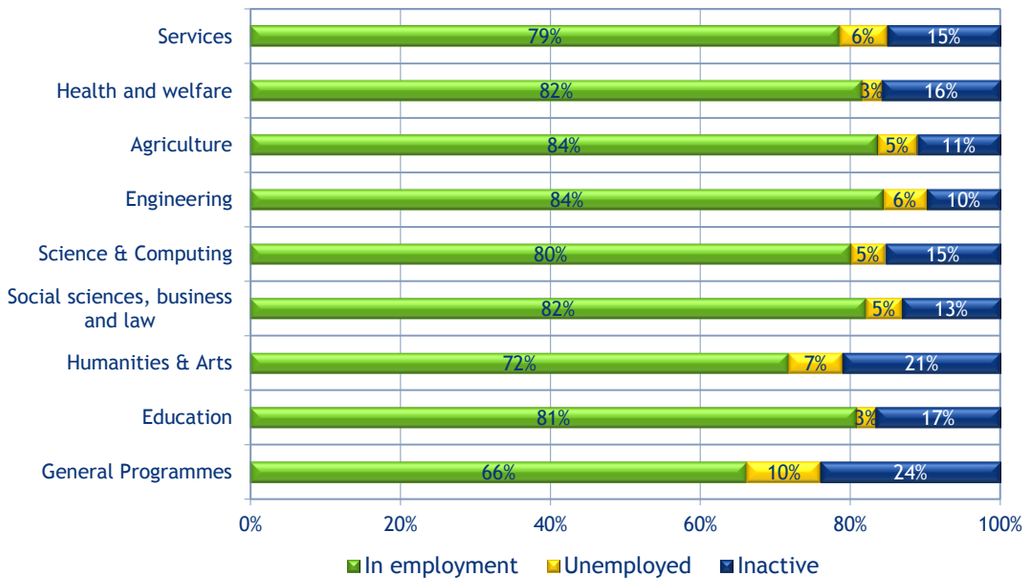


Source: SLMRU (SOLAS) analysis of CSO data

For those persons with **third level qualifications** in quarter 4 2014 (Figure 2.7b):

- Over 80% were in employment; the share was highest for those with qualifications in engineering and agriculture
- The share unemployed was lowest for those with qualifications in education and health and welfare
- On average, 15% were classified as not active; the share was highest for those with qualifications in arts/humanities and general programmes.

Figure 2.7b Field of highest level of education (third level) by employment status (20-64 year olds), quarter 4 2014



Source: SLMRU (SOLAS) analysis of CSO data

Between quarter 4 2009 and quarter 4 2014, for post-secondary and third level combined,

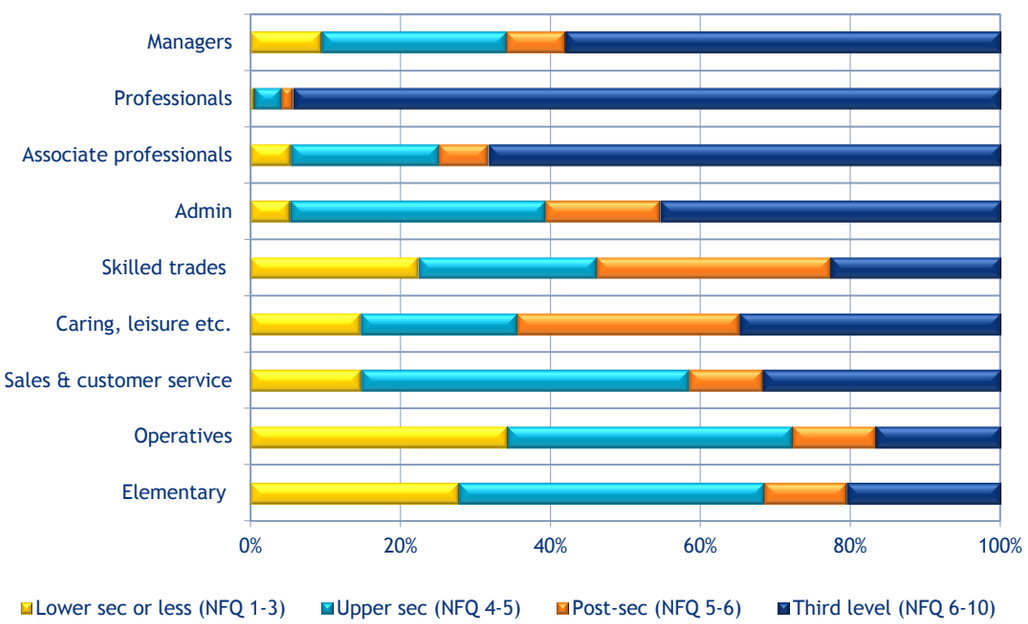
- those **employed** with health and welfare qualifications saw the largest growth (+34,000, or 27%) while those with qualifications in general programmes were the only field to experience a decline in the numbers employed (-6,000)
- **unemployment** declined across all fields excluding health and welfare, agriculture and services; engineering, manufacturing and construction experienced the largest decline at 42% (or 15,000 less persons)
- the numbers classified as **not active** increased across most fields with the largest percentage increase in health and welfare.

2.1.5 Education level by occupation and sector

Figure 2.8 shows that of those in employment in quarter 4 2014

- At 94%, those who worked in professional occupations had the highest share of persons with third level qualifications
- Skilled trades and caring occupations had the highest share of persons whose highest level of education was post-secondary.
- Operatives and elementary workers had the highest share of persons with an education level lower than post-secondary.

Figure 2.8 Employment by highest level of education & occupation, (20-64 year olds), quarter 4 2014



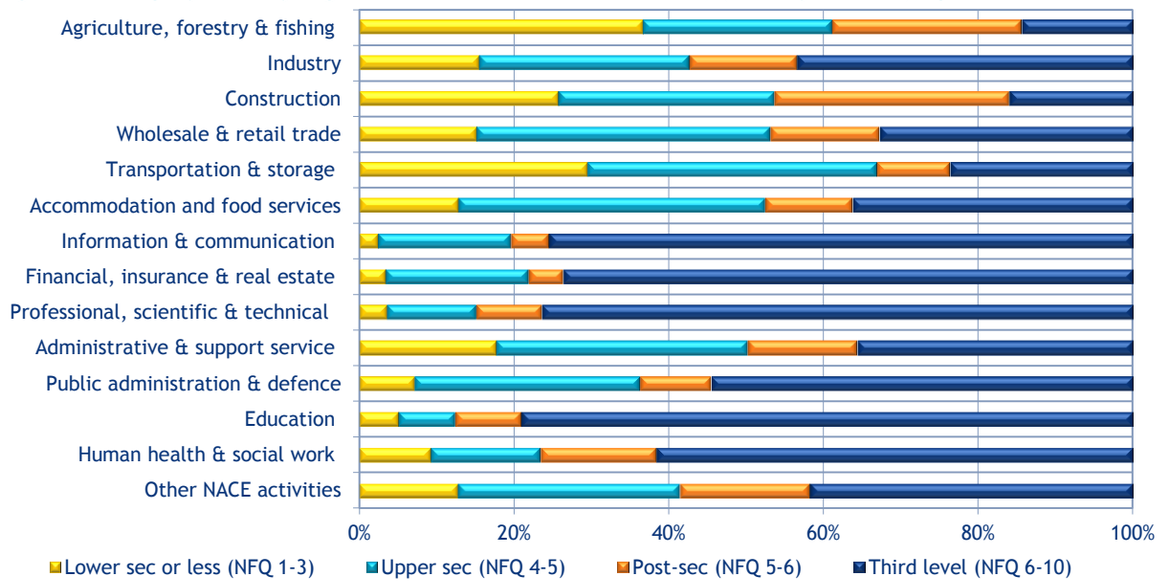
Source: SLMRU (SOLAS) analysis of CSO data

Note: the *not stated* category is excluded from this graph

Figure 2.9 shows that in quarter 4 2014

- Most (80%) of those working in the education sector held third level qualifications; this was followed by the professional, financial and IT activities sectors where at least 74% held a third level qualification
- The construction sector had the greatest share of persons whose highest level of education was post-secondary, at approximately one third
- Those employed in transportation and storage had the highest share of persons who had attained upper secondary education and along with the agriculture sector had the highest share of persons employed who held a lower secondary education or less.

Figure 2.9 Employment by highest level of education & sector, (20-64 year olds), quarter 4 2014



Source: SLMRU (SOLAS) analysis of CSO data

Note: the *Not stated* category is excluded from this graph

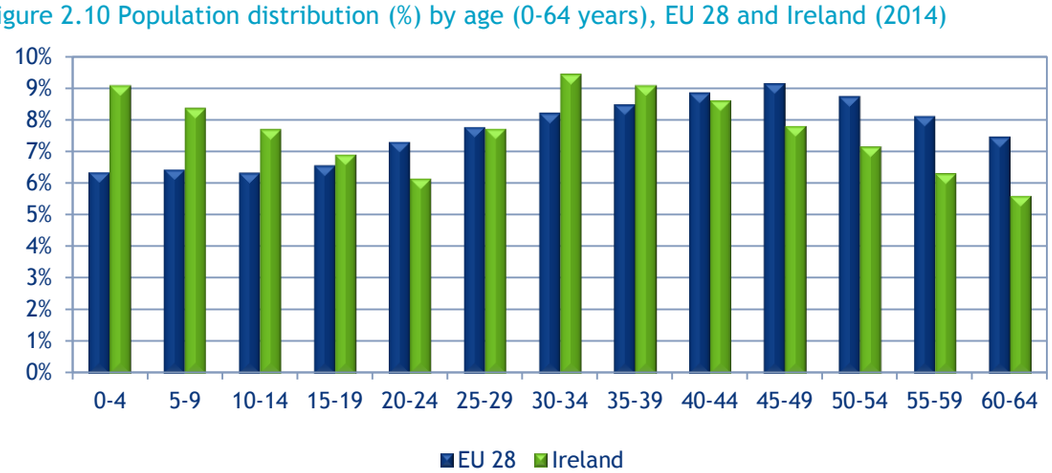
2.2 EU Comparison

2.2.1 EU population

Figure 2.10 shows that in 2014, for the population aged 0-64 years,

- Ireland's share was larger than the EU average for the very young (i.e. less than 20 years), but smaller than the EU average for older cohorts (40 years and over)
- At 6.2%, the share of people in Ireland aged 20-24 was smaller than the EU average (7.3%); this contrasts with 2009, when, at 8.9%, the share of Ireland's population aged 20-24 was higher than the EU average (7.6%).

Figure 2.10 Population distribution (%) by age (0-64 years), EU 28 and Ireland (2014)



Source: Eurostat

2.2.2 EU education profile

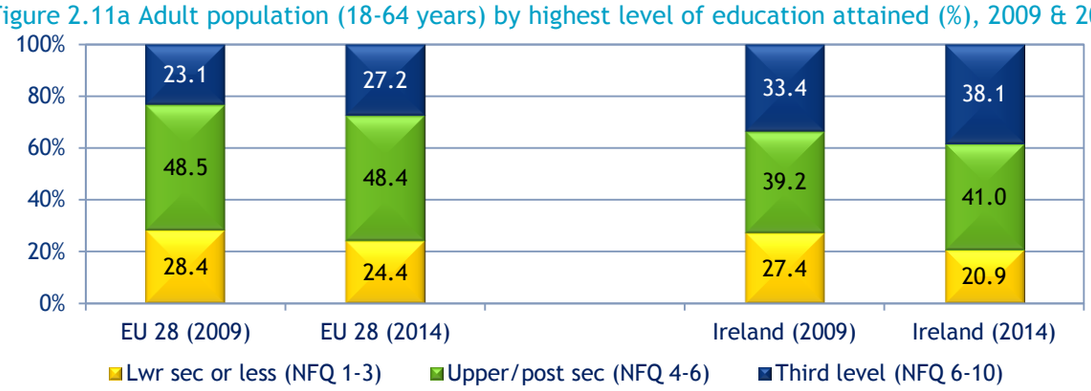
Figure 2.11a compares the distribution of adults (aged 18-64 years)[4] for Ireland and the EU 28 average by the highest level of education attained. In 2014,

- at 38.1%, Ireland had the third highest share of third level graduates across the EU 28 countries, after Luxembourg and Cyprus; while the share of third level graduates increased across both the EU 28 and Ireland since 2009, the gain was slightly greater for Ireland
- Ireland had one of the smallest shares of those with lower secondary or less education at 20.9%; Cyprus, Belgium, Luxembourg, Malta, Portugal and Spain were the only countires with smaller shares

When broken down by gender, Figure 2.11b shows that

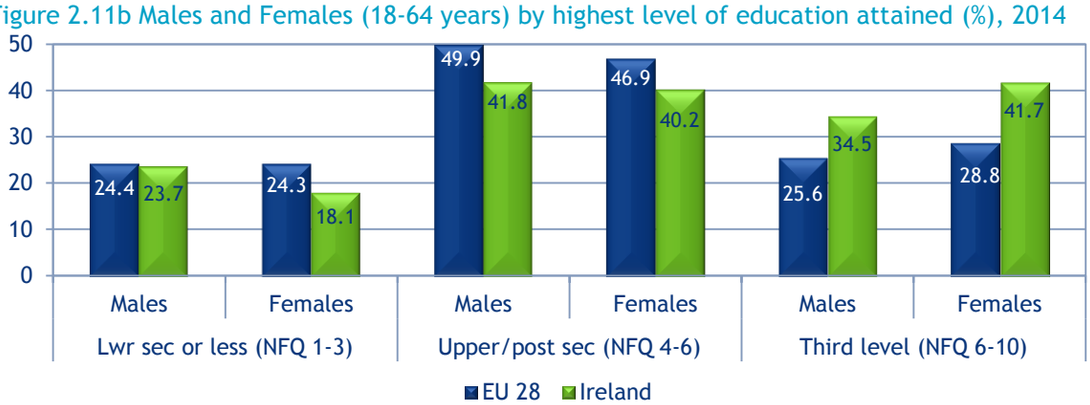
- Ireland has a substantially higher share of females with third level qualifications when compared to the average across EU countries (41.7% compared to 28.8%)
- while females in Ireland and the EU were more likely than males to have third level qualifications, the gap between the genders is considerably wider in Ireland than the EU (7.2 percentage points for Ireland compared to just 3.2 for the EU average).

Figure 2.11a Adult population (18-64 years) by highest level of education attained (%), 2009 & 2014



Source: Eurostat

Figure 2.11b Males and Females (18-64 years) by highest level of education attained (%), 2014



Source: Eurostat

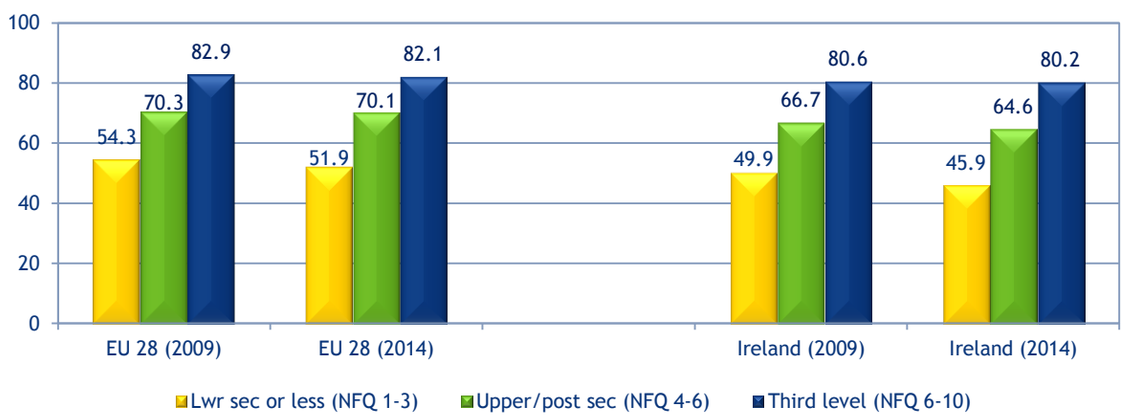
[4] Data not available for 20-64 year olds.

2.2.3 EU employment profile by education level

Figure 2.12a shows the employment rates for the adult population by highest level of education.

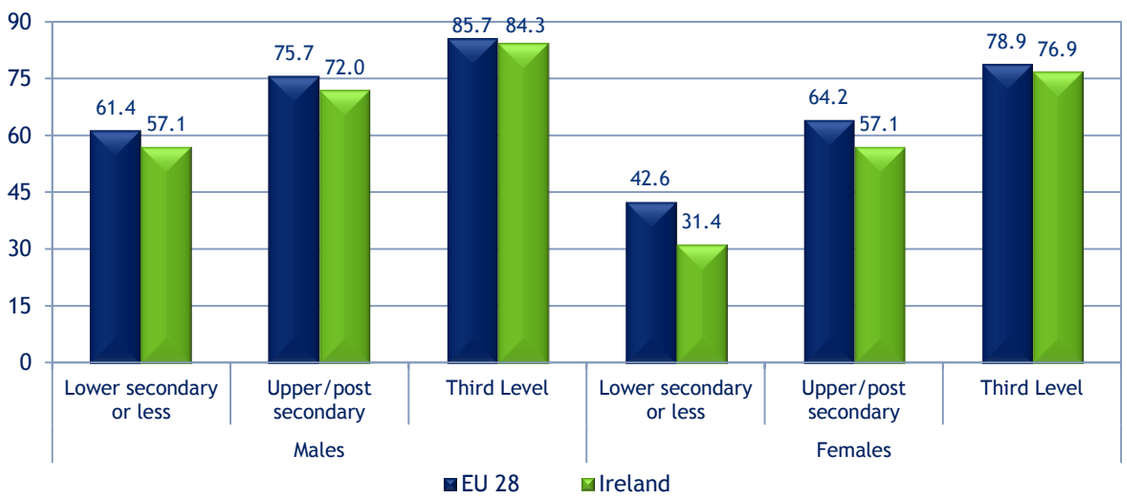
- At all levels of education, Ireland's employment rate was lower than the EU 28 average in both time periods, with the EU-Ireland gap widening between 2009 and 2014 for those with upper/post-secondary level and lower secondary or less; at third level, however, the gap narrowed slightly.
- For those with upper/post-secondary educational attainment, Ireland had the sixth lowest employment rate across EU 28 countries in 2014, with only Greece, Croatia, Spain, Poland and Italy having lower rates.
- This pattern is also observed when broken down by gender (Figure 2.12b), with males in both the EU and Ireland having higher employment rates across all education levels; the male-female gap is higher in Ireland than the EU for all levels.

Figure 2.12a Employment rates for adults (20-64 years) by education level, 2009 & 2014



Source: Eurostat

Figure 2.12b Employment rates (%) for males and females (20-64 years) by education level, 2014



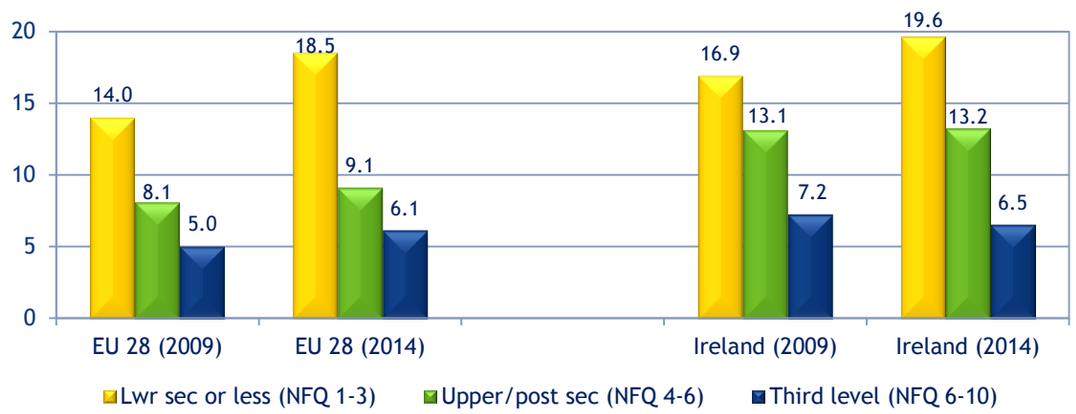
Source: Eurostat

2.2.4 EU unemployment profile by education level

Figure 2.13a shows the unemployment rates for the adult population by highest level of education.

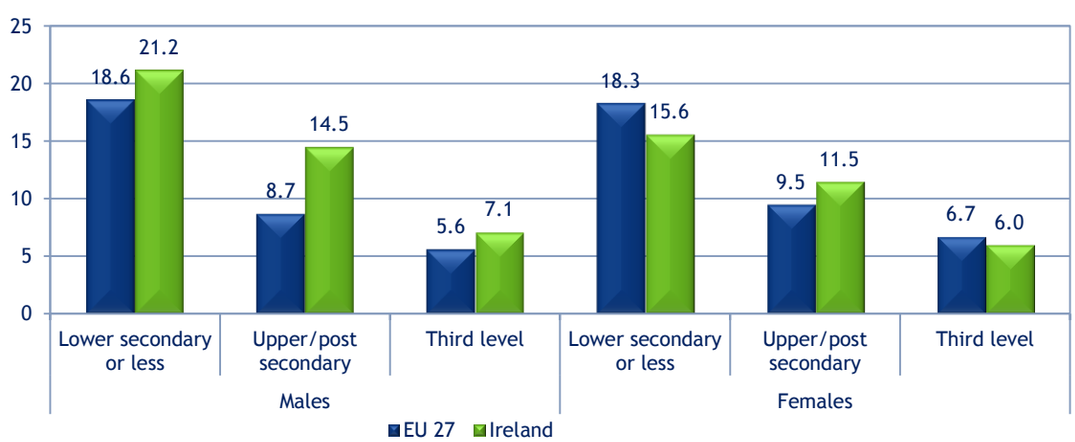
- At all levels of education, Ireland's unemployment rate was higher than the EU 28 average in both time periods, although the gap has narrowed between 2009 and 2014 for all levels, especially third level where the unemployment rate for Ireland in 2014 was less than half a percentage point higher than the EU average
- For those with upper secondary/post-secondary educational attainment, Ireland had the seventh highest unemployment rate across EU 28 countries in 2014, with only Greece, Spain, Cyprus, Croatia, Portugal and Lithuania having higher rates
- For males, regardless of level, the unemployment rate in Ireland was higher, and in the case of upper/post-secondary considerably higher, than the EU average (Figure 2.13b); in contrast, females in Ireland with lower secondary or less education or third level education were less likely to be unemployed than their EU counterparts.

Figure 2.13a Unemployment rates (%) for adults (20-64 years) by highest education level attained, 2009 & 2014



Source: Eurostat

Figure 2.13b Unemployment rates (%) for males & females (20-64 years) by highest education level attained, 2014



Source: Eurostat

3. Skills supply: education and training outputs

This chapter focuses on the outputs from the education and training system as an indicator of the potential supply of skills to the labour market.

3.1 Outputs from education and training by field and education level

Tables 3.1 and 3.2 give an overview of the most recent outputs across all levels of the education and training system. There were almost 211,000 awards spanning levels 1-10 on the NFQ in 2014. (Higher education awards made to learners outside the HEA-aided sector are not included but are detailed in Table 3.3). This represents a 1% decline (or 2,000 fewer awards) when compared to the preceding year, with the decline due to a fall in the number of major awards made at level 5.

Table 3.1 Summary of further and higher education and training awards by provider, 2014[4]

	NFQ 1/2	NFQ 3	NFQ 4	NFQ 5	NFQ 6	NFQ 7	NFQ 8	NFQ 9/10	Total
SEC (Junior Cert)	-	60,300	-	-	-	-	-	-	60,300
SEC (Leaving Cert)	-	-	57,000		-	-	-	-	57,000
QQI-FE (Major awards)	1,720	2,590	1,990	17,460	4,740	-	-	-	28,500
Institutes of Technology	-	-	-	-	3,100	8,110	11,000	2,310	24,520
Universities/colleges	-	-	-	-	2,530	1,580	19,600	16,500	40,200
Total	1,720	62,890	76,450		10,370	9,690	30,600	18,810	210,520

Source: State Examinations Commission (SEC); Quality & Qualifications Ireland (QQI); Higher Education Authority (HEA)

Table 3.2 Summary of further and higher education and training awards by field, 2014[5]

Field	NFQ 1-2	NFQ 3	NFQ 4	NFQ 5	NFQ 6	NFQ 7	NFQ 8	NFQ 9/10	Total
General	1,720	1,430	220	-	170	-	-	70	3,600
Education	-	-	-	-	120	80	1,910	3,140	5,250
Arts/humanities	-	680	760	1,810	670	860	5,850	2,040	12,660
Social Science, Bus & Law	-	460	670	4,570	2,550	2,240	8,810	6,500	25,800
Science & Computing	-	-	-	200	480	1,380	4,180	2,690	8,930
Engineer & Construction	-	30	-	380	2,210	2,080	3,220	1,030	8,950
Agri & Veterinary	-	-	200	1,720	440	350	520	100	3,310
Health & Welfare	-	-	40	7,130	2,400	1,480	5,350	3,020	19,420
Services	-	-	100	1,660	1,330	1,230	750	240	5,310
Total	1,720	2,600	1,990	17,470	10,370	9,700	30,590	18,830	93,230

Source: QQI (QQI-FE Major Awards); HEA

[5] HEA higher education awards refer to 2013.

3.2 Leaving Certificate (LC) candidates

- There were approximately 57,000 Leaving Certificate candidates in 2014, an increase of 2.4% on 2013, but a 0.9% decline on 2009 (resulting in 500 fewer candidates)
- In 2014, over two thirds of all candidates took the Leaving Certificate Established (LCE), 27% the Leaving Certificate Vocational Programme (LCVP) and the remaining 5%, the Leaving Certificate Applied programme (LCA); this distribution remains broadly in line with preceding years
- With the exception of languages and mathematics, at least two thirds of candidates in the most popular subjects opted to take the higher level paper; this pattern is similar to preceding years
- As shown in Figure 3.1, over the period 2004-2014,
  - the number of Leaving Certificate candidates reached their lowest levels in 2006 and 2007 (approximately 54,000 candidates each year); while numbers have since recovered, at almost 57,000 in 2014, they remain slightly below the 57,800 candidates observed in 2010
  - the number of candidates for the Leaving Certificate Applied programme has remained mostly stable over time, at approximately 3,000 sits annually.

Figure 3.1 Leaving Certificate candidates by programme type, 2004-2014

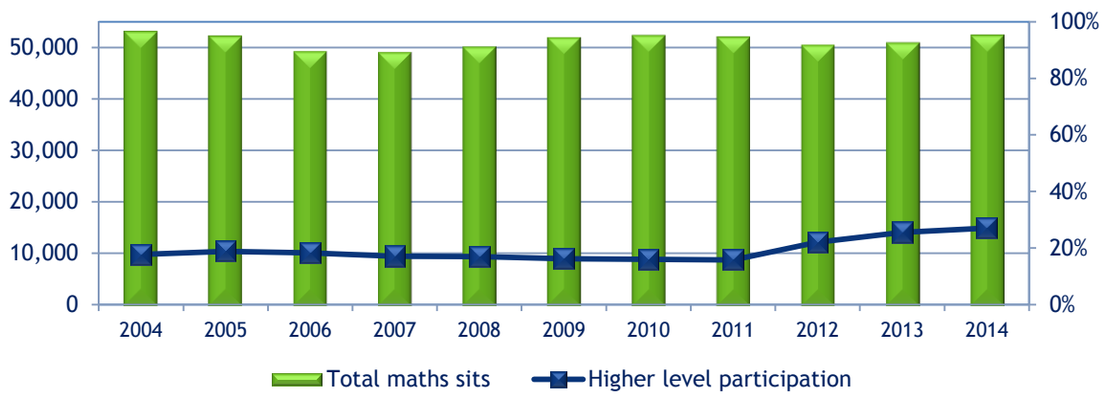
Source: State Examinations Commission

3.2.1 Mathematics

The vast majority of candidates take mathematics in the Leaving Certificate (either the LCVP or the LCE), with take-up rates of at least 98% in any given year. Figure 3.2 shows that in 2014

- there were approximately 52,000 sits in Leaving Certificate mathematics; of these, over 14,300 opted to sit the higher level paper
- the higher level participation rate in mathematics increased from 16% to 27% when compared to 2009; combined with an increase in the total Leaving Certificate candidate numbers, this resulted in over 5,900 additional students taking mathematics at higher level
- despite the increase in participation, the share of Leaving Certificate students at higher level in mathematics **is by far the lowest** of all Leaving Certificate subjects.

Figure 3.2 Total candidate numbers and higher level participation (%) in mathematics, 2004-2014



Source: State Examinations Commission

3.3 Further education and training awards (Figure 3.3)

Data from QQI shows that in general each learner received only one major award, but learners may receive more than one minor award, and may also receive more than one award type. Therefore, in this report, in order to avoid double-counting, further education and training awards data is confined to major awards only.

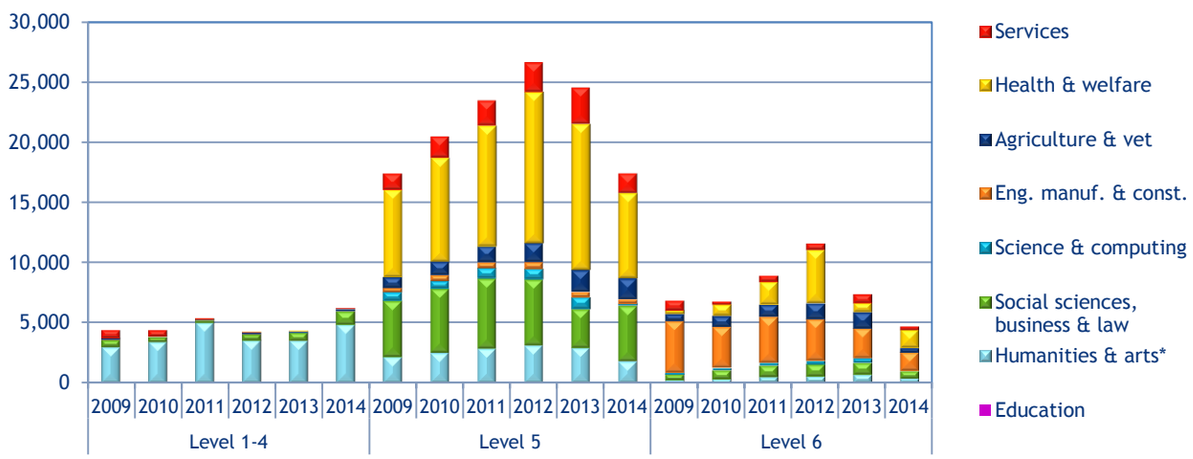
In 2014, there were 28,500 major awards made by QQI to FET learners across levels 1-6 on the NFQ. The declines in the number of FET (QQI) awards that occurred in 2013 (-15%) and 2014 (-15%) cancelled out the gains (between 10% and 19% annually) seen in award numbers in earlier years. As a result, the number of FET awards in 2009 and 2014 are broadly similar.

Between 2009 and 2014, the distribution of awards by field shifted slightly, with an overall increase in social science, business & law, health/welfare, and arts/humanities (including general learning) and a decrease in the number of awards in science/computing, engineering etc., and services.

- Levels 1-4: at almost 6,300 in 2014, the number of awards grew by almost 2,000 between 2013 2014; the majority of these awards every year were in arts & humanities, mostly for general learning awards.
- Level 5:
  - The number of major awards declined by over 7,000 between 2013 and 2014, and by more than 9,000 when compared to the peak in 2012; as a result, the number of level 5 major awards has returned to 2009 levels
  - Over 40% were for health and welfare (e.g. childcare or healthcare support); a further quarter were for social science, business and law (e.g. business studies/business admin)
  - Despite the overall decline in awards at level 5 between 2013 and 2014, the number made for social science, business and law increased by more than 1,300; in contrast, there was a fall of 5,000 awards in health and welfare.

- Level 6:
  - The numbers peaked in 2012 at 11,600, but at 4,700 awards in 2014, numbers have declined to their lowest level since 2008[6]
  - The growth observed in 2011 and 2012, and the subsequent declines in 2013, are related to fluctuations in the number of awards in health and welfare (especially childcare); however, declines in 2014 are related to a drop in the number of engineering/manufacturing and agriculture/vet awards which each fell by almost 1,000 awards year-on-year.
  - In 2009, engineering/construction awards accounted for almost two thirds of all level 6 awards; by 2013, they accounted for just 33%; this relates to a drop in the number of national craft certificates for apprentices in the construction sector.

Figure 3.3 QQI (FET) major awards by field of learning, 2009-2014



Source: QQI (FET)
*Includes general learning

3.4 Higher education and training awards (Figure 3.4)

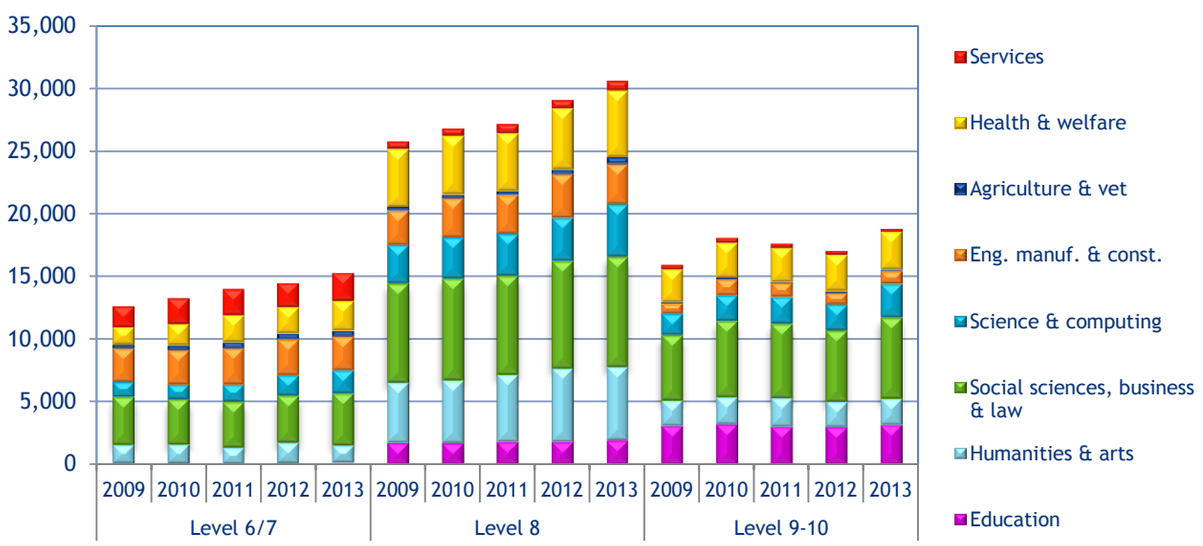
The number of higher education awards (NFQ 6-10) made to learners at IoTs and universities rose annually, going from over 54,000 in 2009 to almost 65,000 in 2013. Increases occurred across most fields of learning, but were particularly strong for science & computing (an extra 2,700 awards) and social science, business and law (an extra 2,500 awards).

- **Level 6/7:** the number of level 6/7 awards has grown annually since 2009, with an additional 2,700 awards issued by 2013; awards were made up primarily of social science, business and law, engineering and health/welfare; the largest gains over the period were for health and welfare (+950) and science and computing (+650)

[6] QQI (and formerly FETAC) have collected awards data since 2001 although for comparison purposes data from 2008 onwards is used.

- **Level 8:** level 8 awards accounted for the highest number of awards at third level and have been increasing annually since 2009; by 2013, the number of awards was almost one fifth greater (+4,900 awards) than in 2009. In terms of disciplines
  - social science, business and law accounted for 29%; arts/humanities for 19%; and health and welfare for 17%
  - compared to 2009, the largest increases were for science/computing (+1,100), arts/humanities (+1,000), and health/welfare (+700).
- **Level 9/10:**
  - there was an increase (+1,700) in the number of postgraduate awards between 2012 and 2013 – the first since 2010; increases occurred at both levels 9 (+1,500 awards) and level 10 (+205 awards)
  - in 2013, social science, business and law accounted for more than a third of all postgraduate awards; education and health/welfare awards combined made up a further third
  - combined, the science/computing and engineering/manuf. & construction fields accounted for almost a half of **all PhD awards** (level 10)
  - when compared to 2009, social sciences and science/computing made the largest gains (at 1,260 and 980 respectively).

Figure 3.4 Higher education awards by field of learning 2009-2013



Source: HEA
Note: humanities & arts includes general learning

In addition to the awards from universities and the institutes of technology, other providers of higher education (e.g. private, independent colleges, as listed in Appendix B1) run programmes leading to QQI higher education awards spanning levels 6-10 on the NFQ (Table 3.3). In 2014,

- there were over 5,000 major awards in the higher education outside the HEA-aided sector, approximately 1,000 more than in 2013

- social science, business & law (SSBL) and education had the highest numbers at 2,463 and 982 respectively
- with the exception of the services and health and welfare fields, the highest number of awards was at level 8.

Table 3.3 QQI higher education awards made to learners outside the HEA-aided sector, 2014

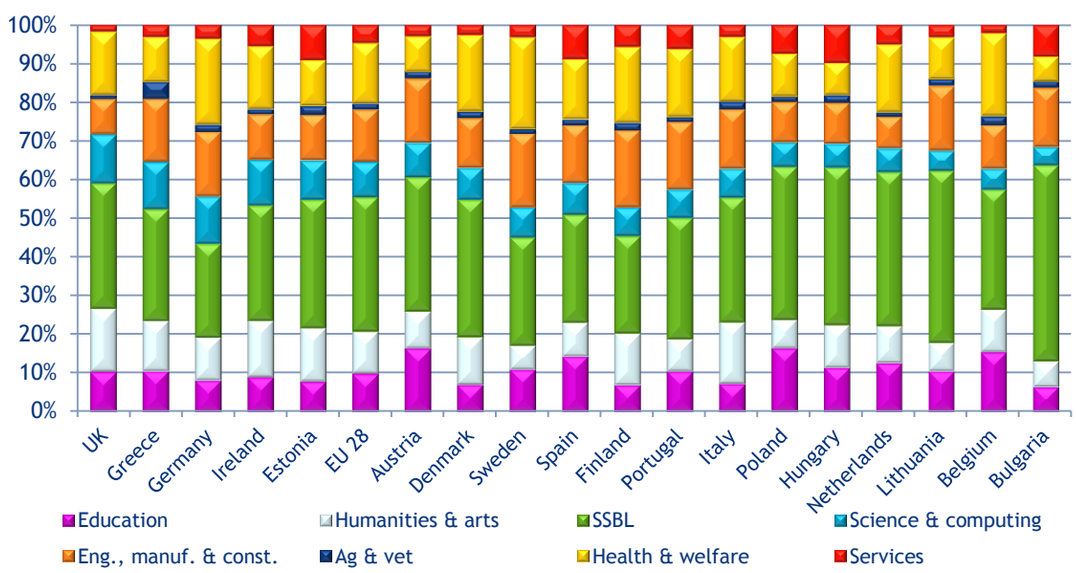
	NFQ 6	NFQ 7	NFQ 8	NFQ 9	Total
Education	5	43	884	50	982
Arts/humanities	12	110	146	5	273
SSBL	88	314	1,550	511	2,463
Science & computing	91	28	389	101	609
Health and welfare	48	303	197	192	740
Services	-	22	6	-	28
Total	**244**	**820**	**3,172**	**859**	**5,095**

Source: QQI

3.4.1 EU comparison

- Figure 3.5 shows the distribution of graduates in 2012 (the latest available) by field of learning across selected EU countries. In the EU, on average, social science, business and law had the highest share of graduates at 34%, followed by health/welfare (15%) and engineering etc. (13%).
- Ireland's share of graduates was higher than the EU average for arts/humanities (+4 percentage points), science/computing (+3), health/welfare, and services (each one percentage point above the EU average).

Figure 3.5 Distribution of graduates across EU countries by field of learning, 2012



Source: Eurostat

3.5 First destination of graduates

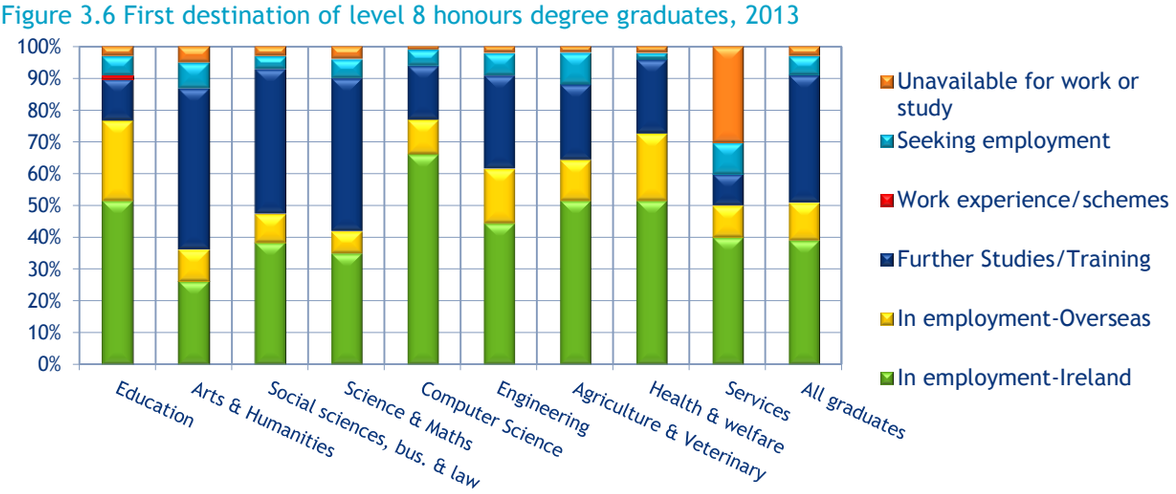
This section focuses on the economic status of those who have recently attained post-secondary or higher education qualifications. The data sources are the HEA's First Destination Survey (FDS) [7] and the CSO's Quarterly National Household Survey (QNHS). The FDS shows the destination of university graduates with honours bachelor degrees or masters/PhD awards nine months after graduating in order to provide an overview of the destination of those recently completing third level programmes. Data from the CSO's QNHS examines qualification holders (both post-secondary and third level) aged 25-29 years as these are considered to be the closest proxy to recent graduates.

3.5.1 First Destination Survey

When Figure 3.6 (level 8 graduates) and Figure 3.7 (level 9/10) from the HEA's FDS report are compared,

- the share of level 9/10 graduates **in employment (in Ireland and overseas)** was higher than that of level 8 graduates at rates of 72% and 51% respectively; this pattern holds across all fields, with the widest gaps for those with qualifications in SSBL, arts/humanities and science/maths
- graduates in education had the highest share of persons **employed overseas** at both levels
- level 8 graduates were far more likely to be in **further studies/training** than level 9/10 graduates, particularly in the case of graduates from arts/humanities, science/maths and SSBL
- the shares **seeking employment** were higher for level 9/10 graduates across all fields, excluding education, when compared to level 8 graduates.
- at levels 8 and 9/10 the services discipline had the highest share of graduates **unavailable for work or study** at 30% and 10% respectively.

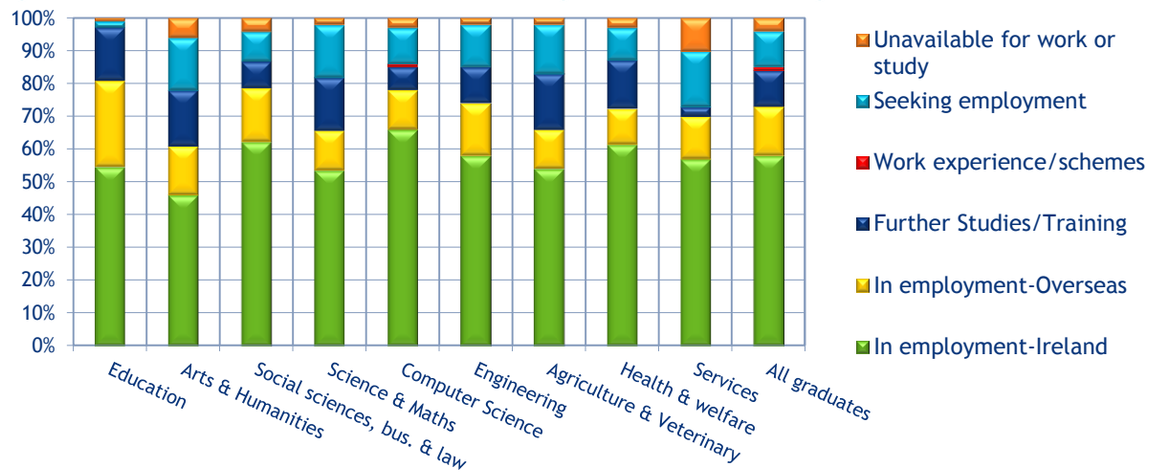
Figure 3.6 First destination of level 8 honours degree graduates, 2013



Source: HEA

[7] What Do Graduates Do? The Class of 2013. An Analysis of the Universities and Colleges of Education First Destination of Graduates Survey, 2014, HEA, December 2014

Figure 3.7 First destination of Level 9 masters degree and level 10 PhD graduates, 2013



Source: HEA

3.5.2 Recent qualification holders in the labour force

This section focuses on the profile of those who hold post-secondary and third level qualifications in Ireland based on the CSO's Quarterly National Household Survey (QNHS). For the purposes of this analysis we examine only those aged 25-29 years as this is the age cohort in which young people are most likely to have completed their full-time education. The focus is on their labour market outcomes by level and field of education[8].

The number of 25-29 year olds declined across all education levels between quarter 4 2009 and quarter 4 2014 but particularly so for those with third level and upper secondary education, declining by 29,700 and 38,700 respectively (Table 3.4).

- **In employment**: despite a fall in the numbers employed across all educational levels since quarter 4 2009, third level graduates still accounted for the highest share in employment
- **Unemployed**: the fall in the numbers unemployed over the period resulted in a fall of one percentage point across all educational categories
- **Not active**: the share of persons classified as not active increased across all education levels, with an increasing number of persons in this age group remaining/returning to education (particularly for third level graduates).

[8] Education field refers to the field of learning from the highest qualification attained and as such may mask a person's primary degree i.e. those with a computing degree may go on to attain an MBA and would therefore be captured in the social science, business & law category rather than in computing.

Table 3.4 Population aged 25-29 by highest level of education attainment and economic status (ILO), quarter 4 2009 and quarter 4 2014

	Q4 2009				Q4 2014			
	Total	In Employment	Unemployed	Not Active	**Total**	In Employment	Unemployed	Not Active
Third level (NFQ 6-10)	**174,500**	82%	8%	10%	**144,800**	81%	7%	12%
Post-secondary (NFQ 5-6)	**55,300**	67%	18%	14%	**36,900**	65%	17%	18%
Upper secondary or less (NFQ 1-5)	**139,100**	59%	16%	25%	**100,400**	56%	15%	30%
Not stated	**21,500**	73%	8%	19%	**15,500**	73%	5%	22%
Total	**390,400**	71%	12%	16%	**297,600**	70%	11%	19%

Source: SLMRU (SOLAS) analysis of CSO data (QNHS)

Table 3.5 shows that the 50,000 fall in the number of 25-29-year olds with post-secondary or third level qualifications between quarter 4 2009 and quarter 4 2014 related primarily to a fall in the number of graduates in SSBL and engineering, manufacturing and construction. Young health and welfare graduates were the only group to experience an increase over this period.

In quarter 4 2014,

- **In employment:** those who had a qualification in education had the highest share (89%) of persons in employment with the lowest shares for those who studied general programmes and science and computing; when compared to quarter 4 2009, there were declines in the absolute numbers employed across all programme types, particularly in SSBL, resulting in a fall in the share employed for most disciplines
- **Unemployed:** those with qualifications in services, arts/humanities and engineering related had a higher share of persons unemployed than the overall level of 9%; when compared to quarter 4 2009, engineering related graduates had the largest decline in both the number and share unemployed, falling from 20% to 10%
- **Not active:** at 21%, science and computing had the highest share of persons classified as not active; when compared to quarter 4 2009, the overall number of persons classified as not active declined although this varied across the disciplines; despite this decline, the overall number classified as students increased by 38%, primarily related to an increase in the number of students in SSBL and health and welfare.

Table 3.5 Post-secondary & third level graduates (aged 25-29) by field & economic status (ILO), quarter 4 2009 and quarter 4 2014

	Q4 2009					Q4 2014				
	Total	In Employment	Unemployed	Not Active	Total	Total	In Employment	Unemployed	Not Active	Total
General programmes	4,400	64%	*	*	100%	3,000	50%	*	*	100%
Education	13,000	90%	*	*	100%	12,500	89%	*	*	100%
Arts/humanities	17,200	74%	9%	17%	100%	14,800	76%	11%	13%	100%
SSBL	72,600	85%	7%	8%	100%	51,000	80%	8%	12%	100%
Science & computing	18,000	69%	*	23%	100%	12,400	70%	*	21%	100%
Eng, man & construction	47,500	71%	20%	9%	100%	31,200	80%	10%	10%	100%
Agriculture	5,700	77%	*	*	100%	4,100	80%	*	*	100%
Health and welfare	21,700	80%	7%	13%	100%	25,000	74%	9%	18%	100%
Services	20,700	82%	11%	7%	100%	19,600	75%	13%	13%	100%
Not stated	9,200	79%	*	*	100%	8,000	75%	*	21%	100%
Total	229,800	78%	11%	11%	100%	181,700	78%	9%	13%	100%

Source: SLMRU (SOLAS) analysis of CSO data (QNHS)

* Numbers too small to report

For those 25-29-year olds in quarter 4 2014, what share were employed in a field related to their qualification?

- At 82%, those with qualifications (either post-secondary or third level) in education were the most likely to be employed in a related field, followed by social sciences and health and welfare, at 74% and 69% respectively; arts/humanities and science and computing graduates were least likely to be employed in a related field at 13% and 35% respectively.

- When compared to quarter 4 2009, the numbers employed in related areas fell for all fields, excluding that of education and health and welfare; the drop was most significant for those with qualifications in social sciences (-17,000) and engineering-related (-6,700).

3.6 Future outlook

This section outlines the current trends in education and training enrolments and applications relevant to selected further and higher education/training as an indicator of the potential future supply of skills.

3.6.1 Further education and training

Figure 3.8 provides an overview of selected further education and training in Ireland. The data is derived from a number of sources; however, it should be borne in mind that numbers based on the SOLAS FET Services Plan (2015) are represent projected estimates only; therefore all estimates in relation to total FET provision are approximate only.

It is estimated that there were 282,000 learners in the FET sector in 2013/14[9]. Of these, 194,000 were on **further education (FE) courses** (blue coloured boxes in Figure 3.8), either full-time or part-time[10]; an additional 87,000 were in **training** (yellow/orange boxes) where courses can broadly be divided into training for learners under 25 years, training for the unemployed and other training. Currently, the vast majority of places in training, except apprenticeship, are reserved for unemployed persons referred to training by the Department of Social Protection. (In order to register for apprenticeship training, a learner must be registered with an employer. As such, they are considered to be part of the employed.)

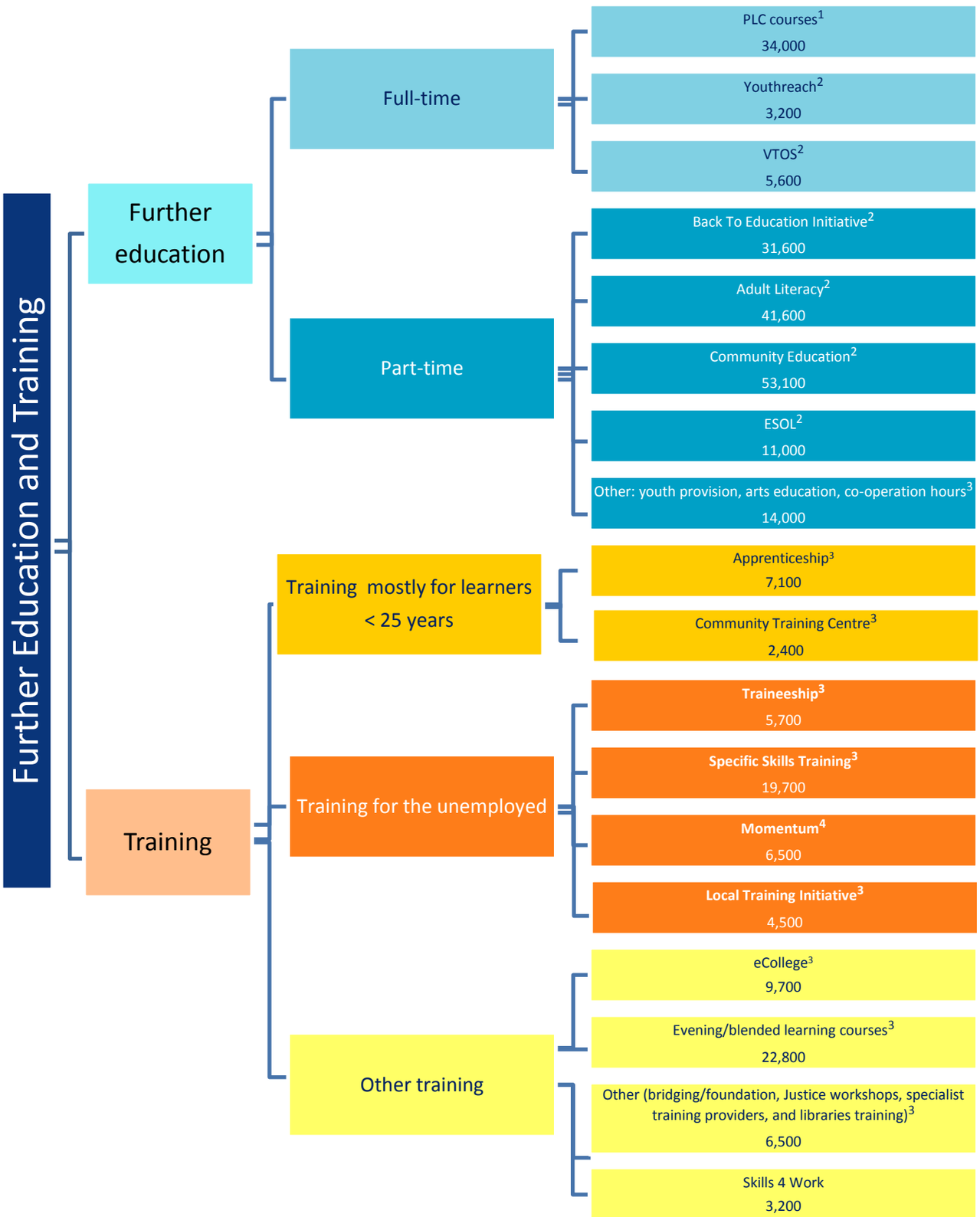
FET courses aimed at catering for the needs of younger age cohorts include Post Leaving Certificate, Youthreach, apprenticeship and Community Training Centre courses, where the majority of learners tend to be under 25 years[11]. Data on PLC courses and apprenticeships is available in greater detail, and trend data for these learners is further analysed further in Figures 3.9 and 3.10.

[9] The SOLAS FET services plan sets out the estimated number of learners for the year 2015. As 2015 spans two academic years (2014/2015 and 2015/2016), numbers for further education were sourced from SOLAS ETB statistical returns, with the exception of PLCs (from DES). Further education data refers to 2013/2014; further training, to 2014 and in some instances, projected estimates for 2015.

[10] Please note that many learners may be engaged in activities that do not lead directly to certification (e.g. adult literacy) and therefore these will not be reflected in the awards data elsewhere in this report.

[11] With the exception of Youthreach learners (where all learners are aged less than 25), some older learners also participate on these programmes.

Figure 3.8 Approximate numbers of learners in selected FET by programme type, various years



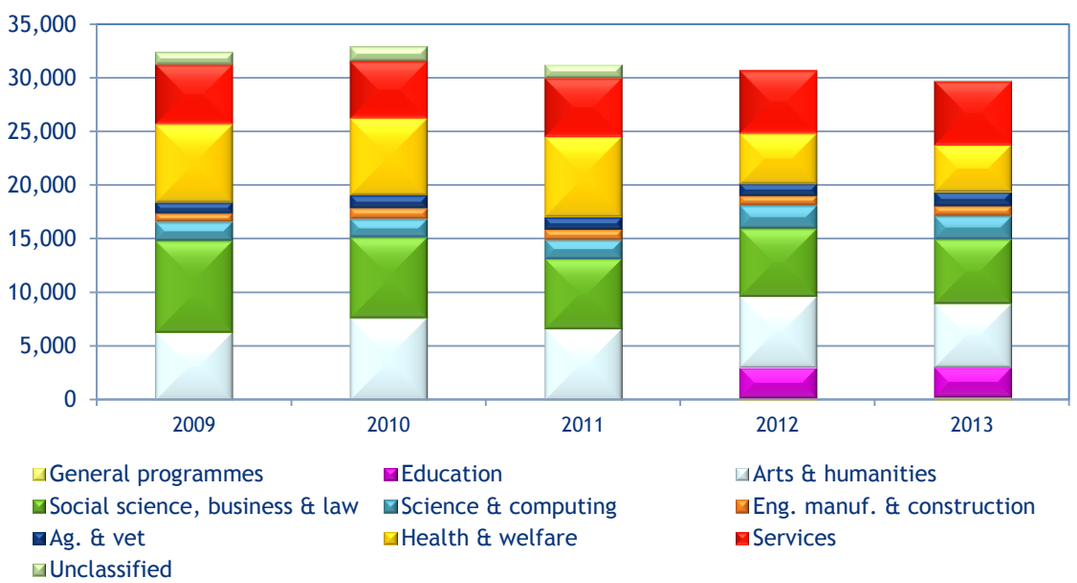
Sources: 1-DES (2013/2014); 2-SOLAS/ETB statistical returns (2013); 3-FET Services Plan (2014); 4-SOLAS (2014)

Inflows to Post Leaving Certificate (PLC) courses

Figure 3.9 shows the number of learners enrolled in year 1 of Post Leaving Certificate (PLC) courses, by field.

- In 2013, arts/humanities, social science, business & law, and services (e.g. sports, beauty therapy etc.) each accounted for 20% of all year 1 enrolments.
- The total number of year 1 enrolments declined by 8% between 2009 and 2013, resulting in almost 2,600 fewer learners.
- Much of the decline was observed in social science, business and law (2,500 fewer learners), chiefly for business related courses.
- There also appeared to be a strong decline in the health and welfare category; this is related to the discontinuation of community and health services in childcare courses; however, at the same time, there was a corresponding increase in the number of childhood care/education courses (which are categorised in the education field).

Figure 3.9 First year PLC course enrolments (NFQ 5 & 6) by field of learning, 2009-2013



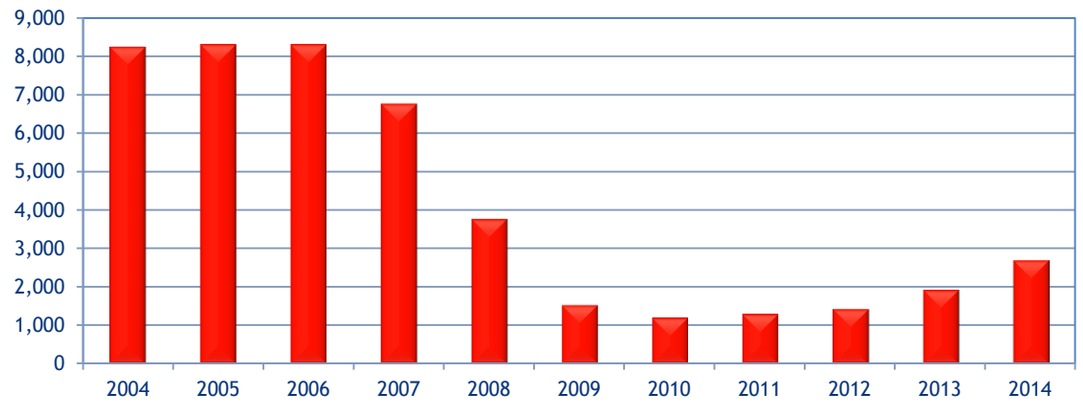
Source: DES

Inflows to apprenticeship

In Ireland, apprenticeship training is currently concentrated in the broad field of engineering, manufacturing and construction. Figure 3.10 shows the number of new registrations for apprenticeships.

- The number of new apprentices declined significantly with the onset of the economic crisis in 2007 (falling from a peak of 8,300 in 2006 to 1,200 in 2010)
- Arts/humanities related apprenticeships related to crafts such as bookbinding and print media; new apprentices in this field accounted for a negligible share of total new apprentices, amounting to fewer than ten in 2014.

Figure 3.10 New apprentice registrations, 2004-2014



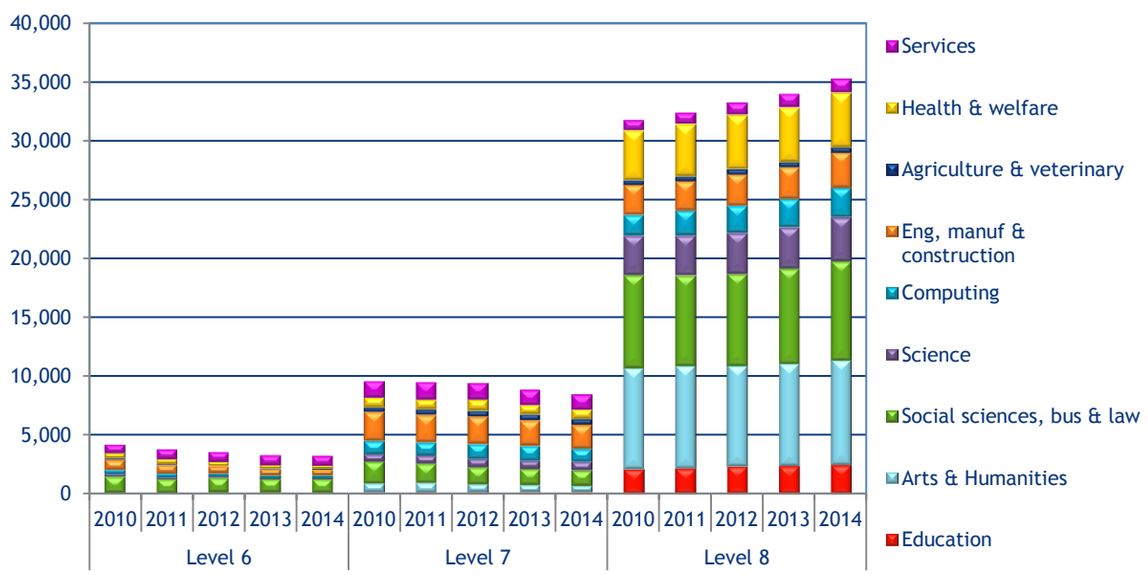
Source: SOLAS

3.6.2 Higher education

CAO acceptance data (Figure 3.11) for those entering third level education between 2010 and 2014 shows that

- At levels 6 and 7, there have been annual declines in the number of acceptances since 2010, with declines primarily in social science, business and law and in engineering, manufacturing and construction
- Arts/humanities and SSBL account for the highest shares of acceptances on level 8 courses; the number of acceptances has been increasing steadily since 2010, with the growth related mostly to increases in acceptances for computing courses along with SSBL and health and welfare.

Figure 3.11 CAO acceptances by discipline and NFQ level, 2010-2014



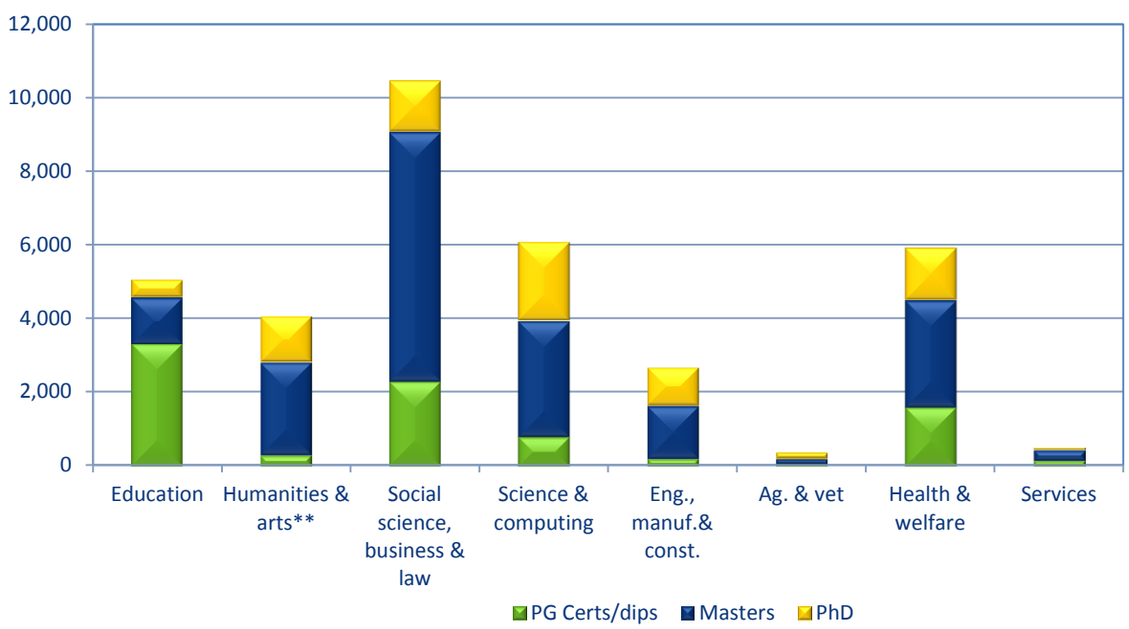
Source: CAO

There were approximately 35,000 postgraduate enrolments, spanning NFQ levels 9 and 10, in 2013. Figure 3.12 shows that

- postgraduate cert/diploma enrolments were primarily in education, SSBL and health and welfare
- masters programmes, at almost 18,500, accounted for the majority of all postgraduate enrolments and were primarily in SSBL, science and computing, and health and welfare
- science and computing had the highest number of PhD enrolments, with more than 2,100 learners enrolled.

When compared with 2009, overall enrolments increased slightly (+1%); however, they declined in arts/humanities, engineering etc. and services, but increased for all other disciplines, with the strongest increases in social science, business and law, health and welfare, and education.

Figure 3.12 Postgraduate enrolments* by discipline and type, 2013



Source: HEA

*Excludes occasional and professional training
** Includes 100 enrolments in general programmes (NFQ 9)

4. Science, mathematics and computing

4.1 Science, mathematics and computing graduates in the population

Figure 4.1 shows the breakdown of persons (aged 20-64) in Ireland with science and computing qualifications[12] by education level.

- There were 108,000 persons aged 20-64 with qualifications in science and computing in quarter 4 2014, representing 8% of all those with post-secondary/third level qualifications in this age cohort; at 88%, this discipline had a higher than average (76%) share of persons with third level qualifications
- Of those with science and computing qualifications, 77% (84,000 persons) were employed; this is slightly below the average (78%) for all fields of learning
- The majority of employed post-secondary/third level science and computing qualification holders worked in an area **not** related to their qualification
- Of those classified as not active, students and those on home duties combined accounted for 70% with a relatively low share of persons retired/unable to work due to sickness etc.
- As there were a relatively small number of persons with post-secondary qualifications in science and computing it was not possible to provide a breakdown by detailed education level in most cases.

Quarter 4 2009 comparison

- There was an 11% increase in the numbers in the population with science and computing related qualifications
- The overall numbers employed increased by 16%, with increases for persons employed in both related and unrelated fields
- The numbers unemployed fell by 19% across both education levels
- The overall numbers classified as not active increased by 4%, primarily for those with third level qualifications.

[12] Education field refers to the field of learning from the highest qualification attained and may mask a person's primary degree i.e. those with a computing degree may go on to attain an MBA and would therefore be captured in the social science, business & law category rather than in computing.

Figure 4.1 Distribution of persons (aged 20-64) in the population with science and computing qualifications, quarter 4 2014

Source: SLMRU analysis of CSO (QNHS) data

4.1.1 Detailed breakdown of third level graduates by employment status

Table 4.1 examines the detailed breakdown of third level science and computing graduates. In quarter 4 2014,

- there were equal numbers of third level graduates in science/mathematics and computing; there was a higher share of computing graduates with higher certificates/university diplomas and conversely, a lower share of graduates with masters/PhD or equivalent when compared to science graduates
- overall, at 83%, those with computing qualifications were more likely to be in employment than their science counterparts (at 77%); the gap was largest at degree level with a ten percentage point difference in the share in employment between the two disciplines.

Table 4.1 Third level science and computing graduates (20-64) by detailed education level and % in employment, quarter 4 2014

	Science & mathematics		Computing	
	Total Q4 2014	% in employment	Total Q4 2014	% in employment
Higher cert/uni diploma	6,800	82%	13,000	80%
Ord/hons bachelor degree/higher dip	24,400	72%	25,800	82%
Masters/postgrad cert/dip	11,700	82%	9,200	86%
PhD	4,100	88%		
Total	47,100	77%	47,900	83%

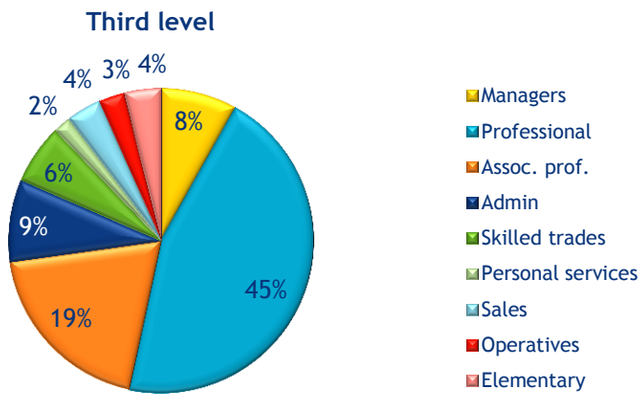
Source: SLMRU (SOLAS) analysis of CSO data

4.1.2 Employment of graduates by occupation and sector

Occupations (Figure 4.2)

- In quarter 4 2014, a third of those with third level qualifications in science, mathematics and computing were employed as professionals (e.g. programmers) with a further fifth employed in associate professional roles (e.g. laboratory and IT technicians)
- When compared with quarter 4 2009, the largest growth in employment in absolute terms was for those employed in professional and associate professional roles.

Figure 4.2 Third level science and computing graduates (aged 20-64) by occupation, quarter 4 2014



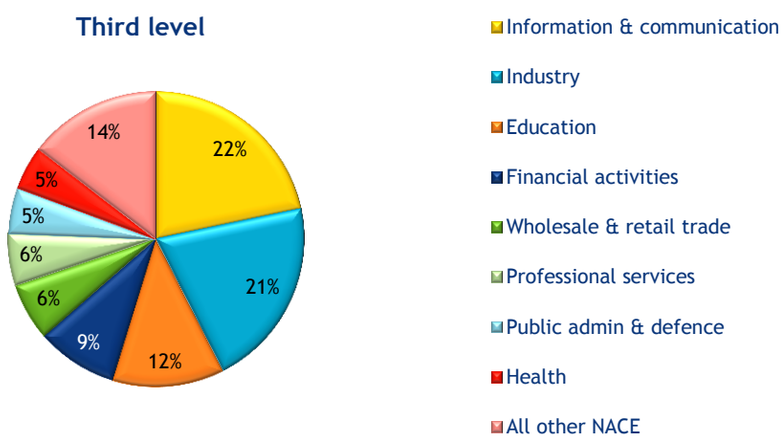
Source: SLMRU (SOLAS) analysis of CSO data

Note: post-secondary graduates are excluded as the numbers are too small to report

Sectors (Figure 4.3)

- In quarter 4 2014, the largest employers of science and computing third level graduates were the IT sector, industry (e.g. manufacture of pharmaceutical and computer/electronic products) and education
- When compared with quarter 4 2009, growth in employment in absolute terms was strongest in the IT sector and in industry.

Figure 4.3 Third level science and computing graduates (aged 20-64) by sector, quarter 4 2014



Source: SLMRU (SOLAS) analysis of CSO data

*Post-secondary graduates are excluded as the numbers are too small to report

4.2 Science and computing graduate output

This section provides an outline of the potential future supply of science and computing graduates in the labour force. First, the number of awards made in the further and higher education and training system is provided; this is followed by an analysis of the first destination of recent graduates in terms of economic status.

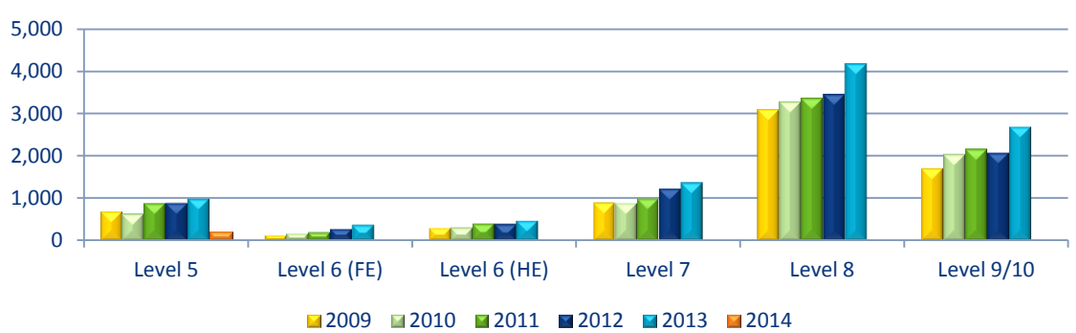
4.2.1 Awards

Figure 4.4 shows the number of awards made in science and computing by level between 2009 and 2013. It also provides the number of QQI awards made in the FET sector for 2014.

- The total number of science and computing awards rose annually between 2009 and 2013, going from 6,800 in 2009 to approximately 10,000 in 2013.
- Between 2009 and 2013, there were increases across all levels, but the growth was particularly strong, in absolute terms, at levels 8 and above; in 2013, there were approximately 1,100 additional awards at level 8 and almost a further 1,000 at levels 9/10 when compared to 2009.
- Despite the overall growth, however, the number of awards in the further education sector declined in 2014, with no awards made in this field at level 6, and a decline of almost 500 awards at level 5.

Not included in the graph are approximately 600 awards made to learners at non-HEA aided higher education institutions; most were at level 8.

Figure 4.4 Graduate output by level (NFQ 5-10) in science/computing 2009-2014



Source: HEA/QQI (FET major awards)

Note: NFQ 1-4 do not appear on the graph as the numbers amounted to fewer than 80 awards annually across these levels

In terms of output by detailed field, Table 4.2 shows that of the 9,500 awards made in science and computing in 2013/2014,

- approximately 4,200 (or 44%) were in computing with a further 3,700 (38%) in life/physical sciences
- in terms of level, almost a half (48%) were made at level 8, with a further 29% at postgraduate level (i.e. level 9/10)
- PhD awards accounted for 7% of all awards made in this field; 100 of these awards were in computing, with approximately 200 each in life science and physical science.

Table 4.2 Science/computing graduates by level & detailed field, 2013/2014

	FET 2014			Higher Ed 2013				Total
	NFQ 1-4	NFQ 5	NFQ 6	NFQ 6	NFQ 7	NFQ 8	NFQ 9/10	NFQ 1-10
Combined science, maths & computing	2	200	0	48	0	674	196	**1,120**
Life science, including	-	-	-	94	441	1,454	525	**2,514**
Biology and biochemistry				*39*	*343*	*1,067*	*368*	*1,817*
Environmental science				*32*	*80*	*265*	*99*	*476*
Physical science, including	-	-	-	61	136	617	334	**1,148**
Chemistry				*35*	*48*	*255*	*147*	*485*
Maths & statistics	-	-	-	**1**	**3**	**206**	**213**	**423**
Computing	-	-	-	278	800	1,226	1420	**3,724**
QQI HE science & computing, including	-	-	-	91	28	389	101	**609**
Science				*2*	*5*	*87*	*50*	*144*
Computing				*89*	*23*	*302*	*51*	*465*
Total science, maths & computing	**2**	**200**	**0**	**573**	**1,408**	**4,566**	**2,789**	**9,538**

Source: QQI (FET & HE - 2014); HEA - 2013

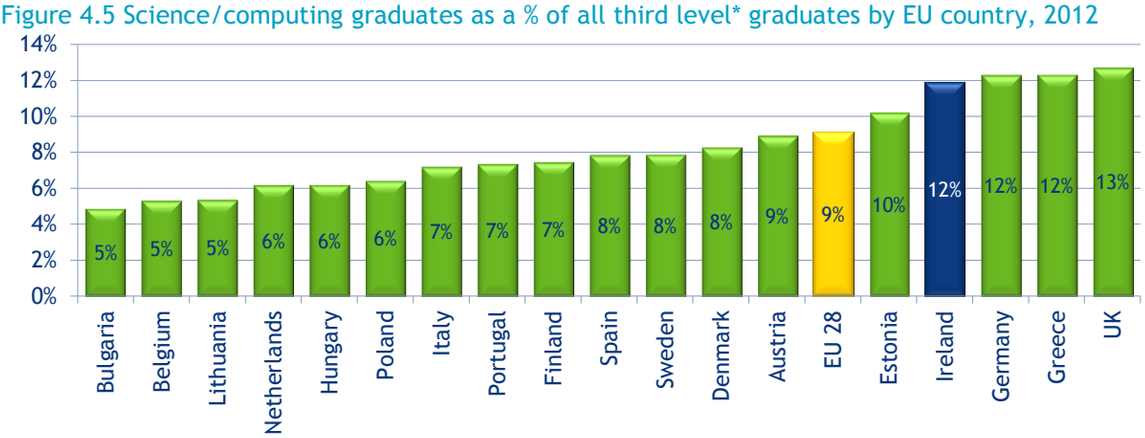
Comparison with 2009

- The number of higher education awards made in universities and institutes of technologies increased by 45%, amounting to an additional 2,700 graduates; more than half of this growth was for computing awards (+1,500, or 68%), particularly at postgraduate level (NFQ 9/10 awards rose by 77%) and honours bachelor degree level (which rose by 64%)
- The share of science & computing graduates in the total awards data has increased: in 2009 they made up 11% of all third level awards (from IoTs and universities) but by 2013 this had grown to 13.5%
- While there were comparatively few awards in FET in 2014, this contrasts significantly with preceding years: between 2009 and 2013, the number of awards grew annually (mostly for computing courses), and by 2013, there were 66% more (or 544 additional awards) than in 2009; the decline observed in 2014 is due primarily to a fall in the number of computing awards (almost 1,000) although the number of science related awards also declined (by approximately one half)
- The decline is, in part, a reflection of a shift towards awarding bodies other than QQI (e.g City & Guilds or vendor provider awarding bodies such as Microsoft, Comptia, Java etc).

4.2.2 EU comparison

Figure 4.5 shows the share of third level graduates across selected EU countries who were graduates in science/computing. With 12% of graduates in science/computing, Ireland has the fourth highest share among selected EU countries, well above the EU average of 9%.

Figure 4.5 Science/computing graduates as a % of all third level* graduates by EU country, 2012



Source: Eurostat

*Refers to all third level categories (equivalent in Ireland to levels 6-10)

4.3 First destination of graduates

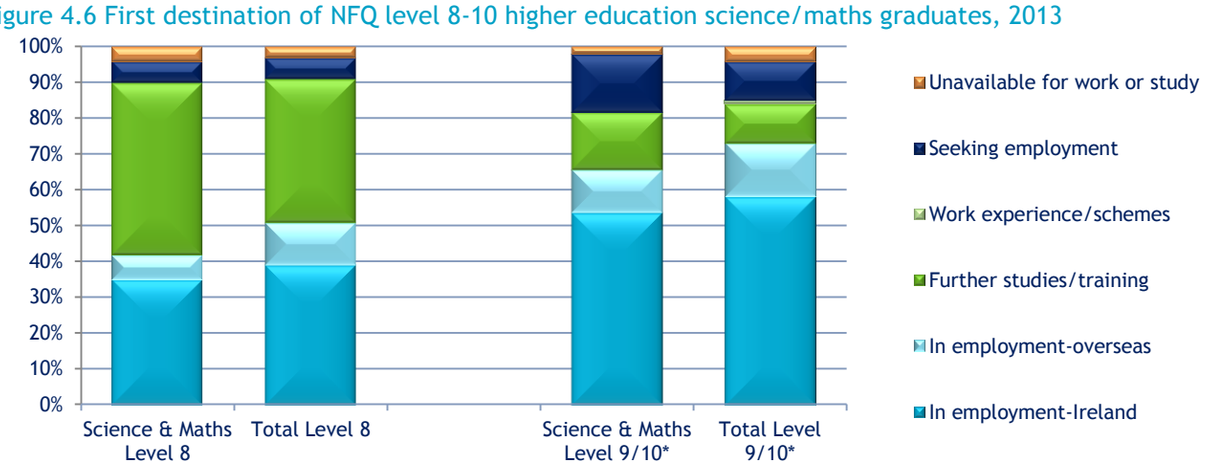
This section focuses on the economic status of those who have recently attained post-secondary or higher education qualifications. The HEA's First Destination Survey (FDS) shows the destination of university graduates with honours bachelor degrees or masters/PhD awards whereas data from the CSO's QNHS examines qualification holders (both post-secondary and third level) aged 25-29 years as these are considered to be the closest proxy to recent graduates.

4.3.1 First Destination Survey

Figure 4.6 shows that, based on the HEA's report *What Do Graduates Do? The Class of 2013*,

- those recently graduated from a level 8 course in science and mathematics were most likely to continue on to further studies, higher than the overall share
- those studying science and maths to level 9/10 were broadly in line with the overall breakdown although with a lower share in employment and a higher share in further education and training.

Figure 4.6 First destination of NFQ level 8-10 higher education science/maths graduates, 2013

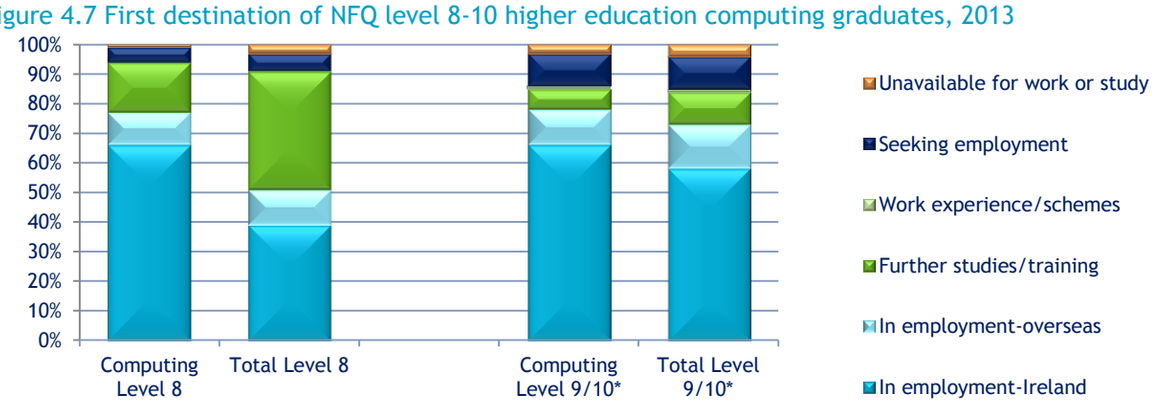


Source: HEA

*Level 9/10 includes masters and PhDs only

- Figure 4.7 shows that those studying computing at both levels had a higher share in employment in Ireland than the overall and were less likely to continue on to further study following graduation.

Figure 4.7 First destination of NFQ level 8-10 higher education computing graduates, 2013



Source: HEA

*Level 9/10 includes masters and PhDs only

4.3.2 Recent qualification holders in the labour force

Table 4.3 provides a profile of 25-29 year-olds who hold third level qualifications based on the QNHS data.

- **Total:** in quarter 4 2014, there were 11,000 third level graduates aged 25-29 in science and computing, 41% of whom were computing graduates; since quarter 4 2009, the numbers in the computing cohort declined by 4,100, with most of this decline occurring between 2009 and 2010
- **% in employment:** in quarter 4 2014, 72% of persons from both disciplines were in employment, a two percentage points increase since quarter 4 2009
- **% employed in related field:** in quarter 4 2014, only 15% of young science graduates were in employment in related field whereas 60% of young computing graduates were working in a related field; when compared to quarter 4 2009, there was a sixteen percentage point decline for science graduates but a fourteen percentage point gain for computing graduates.

Table 4.3 Employment status of young third level science, mathematics and computing graduates (aged 25-29), quarter 4 2009 and quarter 4 2014

	Quarter 4 2009			Quarter 4 2014		
	Total	In employment		Total	In employment	
		%	% in related field		%	% in related field
Science & maths	7,200	67%	31%	6,500	72%	15%
Computing	8,600	72%	46%	4,500	72%	60%
Total	15,800	70%	39%	11,000	72%	34%

Source: SLMRU (SOLAS) analysis of CSO data

Note: post-secondary graduates excluded as numbers too small to report

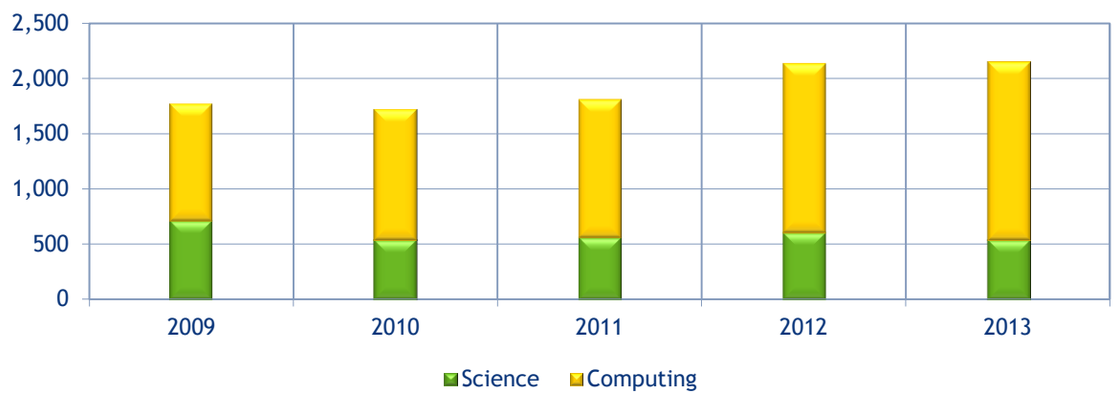
4.4 Future output of science and computing graduates

4.4.1 PLC Enrolments

Figure 4.8 shows the total number of first year enrolments in science/computing, broken down by detailed field.

- In 2013, there were approximately 2,150 learners enrolled on year 1 of PLC courses in science/computing; of these, computing accounted for three quarters of all enrolments
- Overall, the number of first year enrolments increased annually since 2010; when compared to 2009, there were 378 additional learners enrolled, representing a 21% rise over the five-year period
- The growth was due to increases in the numbers enrolled on computing programmes (e.g. courses in information technology and computer/network maintenance), where numbers rose by more than a half, amounting to almost 600 additional learners.

Figure 4.8 First year PLC enrolments for science/computing etc. related courses, 2009-2013



Source: DES

4.4.2 CAO Acceptances (Figure 4.9)

Level 6:

- The number of acceptances at this level were small and have been declining over the period examined; the declines occurred across both science and computing disciplines

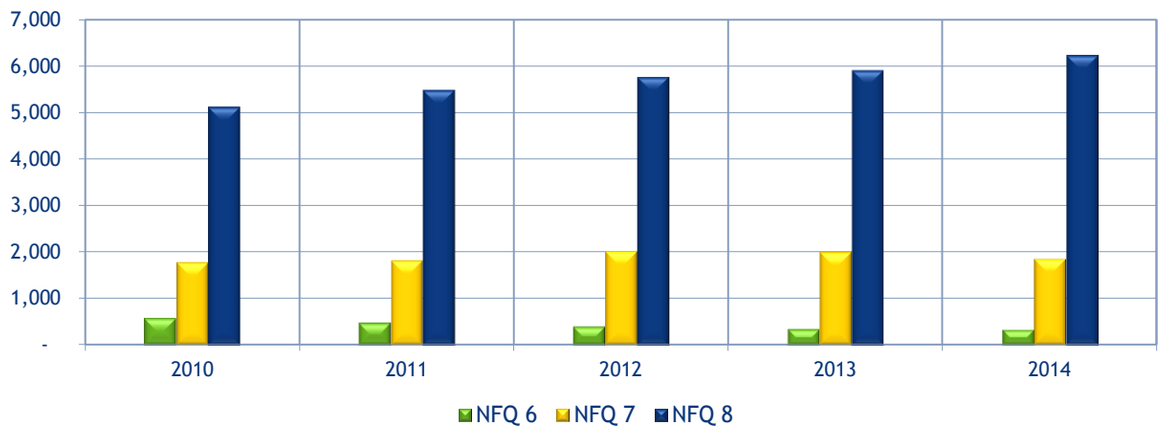
Level 7:

- There was a peak in the number of acceptances in 2012 with declines occurring since; acceptances on computing courses accounted for approximately two thirds of all acceptances for this group over the period examined

Level 8:

- The number of acceptances has been increasing steadily since 2010 relating primarily to an increase in the number of persons accepting places on computing courses (+44% since 2010); although computing has increased its share of acceptances, science still accounted for at least 60% of acceptances at this level over the period examined.

Figure 4.9 CAO acceptances for science, mathematics and computing courses, 2010-2014



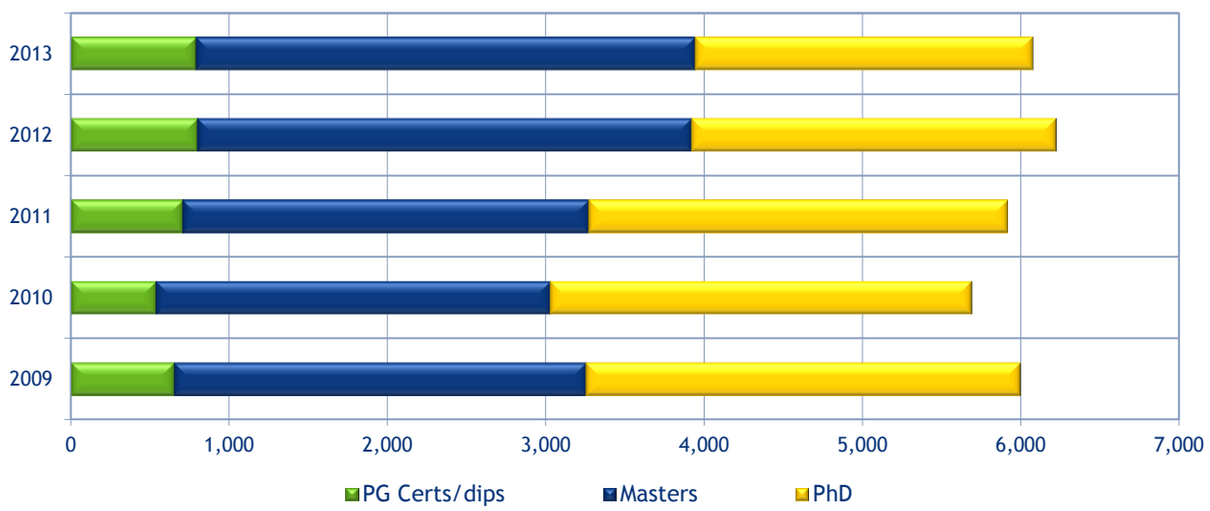
Source: CAO

4.4.3 Postgraduate enrolments

Figure 4.10 shows that there were approximately 6,000 postgraduate enrolments in science and computing annually between 2009 and 2013, with numbers peaking in 2012 at over 6,200.

- Of all enrolments on postgraduate cert/diploma and master programmes, computing accounted for at least two thirds in 2013; overall enrolments on these programme types increased by more than a fifth since 2009 for each of these programme types
- PhD enrolments were predominately in science, accounting for an 81% share in 2013; the overall number of PhD enrolments declined by more than a fifth (approximately 600 fewer learners) since 2009
- While the overall number has remained static, there has been a shift towards increased numbers in computing: computing enrolments made up 40% in 2009 but 51% in 2013.

Figure 4.10 Postgraduate enrolments in science and computing, 2009-2013



Source: HEA

4.5 Labour market outlook for those with science and computing qualifications

The National Skills Bulletin 2015 indicates that shortages exist for a number of science and computing occupations. Table 4.4 provides an education profile of those currently employed in the occupations identified as being in short supply. While this data does not show the skills required for these occupations, it provides an indication of the education level and field of those currently working in these occupations.

Those science and computing professional occupations identified as being in short supply have a high share (84%) with third level qualifications; of those with qualifications fewer than half had science and computing qualifications. This has interesting consequences for increasing the skills supply in this area. At associate professional level, almost three quarters of persons employed in the selected occupations had third level qualifications, although only a third were in science and computing areas. The share of selected operative occupations with third level qualifications was less than one quarter.

Table 4.4 Education profile of science and computing occupations with skill shortages, quarter 4 2014

Occupation	% Post-sec	% third level	% with science & computing quals
Professionals	2%	84%	45%
ICT specialist & project managers			
IT Business analysts & systems designers			
Programmers & software developers			
Web designers & developers			
ICT professionals n.e.c.			
Chemical, biological & physical scientists			
Associate Professional	5%	72%	36%
IT operations technicians			
IT user support technicians			
Operatives	10%	22%	*
Chemical & related process operatives			
Total	3%	77%	42%

Source: NSB 2015 and SLMRU analysis of CSO (QNHS) data

* Numbers too small to report

4.6 Science and computing skills supply - other facts and figures

Gender	44%	Share of all QQI (FET) major awards in science/computing subjects **made to females** in 2014; this compares to a 62% share for females across all fields (Source: QQI)
	38%	Share of higher education graduates from science & computing programmes in 2013 who were **female;** this compares to an average of 53% for higher education graduates overall (Source: HEA)
Lifelong Learning[13]	13,200	Number of 25-64 year-olds with science/computing qualifications who had participated in **lifelong learning** activities in quarter 4 2014 (Source: SLMRU analysis of QNHS data)
	13.1%	**Lifelong learning participation rate** amongst those with science & computing qualifications; this was the highest rate observed across all fields of learning and compares to 7.3% on average nationally (refers to 25-64 year-olds) (Source: SLMRU analysis of QNHS data)
Further Education & Training	10,000	The number of **QQI FET minor and special purpose awards** made in science/computing in 2014; almost 4,800 were at NFQ 3, mostly for internet skills and database awards; and almost a further 4,000 were at level 5 – three quarters of which were in computing (e.g. internet skills, web authoring). (Source: QQI)
	200	The number of QQI FET major awards made in science/computing to **learners at ETBs** (made up of former FÁS and VEC provider centres); it should be noted however that there are an additional 700 awards in information technology that were classified in business/admin (Source: QQI)
Higher Education	13%	The **non-progression rate amongst higher education**[14] new entrants in 2010/11 in undergraduate science/computing, agriculture and vet programmes; this compares to 16% across all fields of learning; the non-progression rate was lower for level 8 courses (10%) (Source: HEA)
	1	The percentage point decline in the non-progression rate for those studying science/computing, agriculture and vet programmes when compared to 2007/08 (Source: HEA)
	705	The number of graduates who were domiciled in Ireland but obtained awards in science and computing from **UK higher education** institutions in 2014; this is a decline on 720 in 2013 (Source: HESA)

[13] Lifelong learning refers to adults aged 25-64 years who undertook formal and/or non-formal learning in the four weeks prior to the QNHS survey.
[14] Refers to full-time undergraduate new entrants NFQ levels 6-8.

4.7 Outlook

- There were 108,000 science and computing graduates in the population (20-64 years), 88% of whom were at third level.
- Science and computing graduates have a high employment rate and most work in high skilled occupations; this is despite the fact that most work in a field not directly related to their qualification showing the potential transferability of their skills.
- The FDS report showed that when compared to all other graduates, science graduates were more likely to be in further studies, while computing graduates were more likely to have entered employment.
- There has been a noticeable drop in the number of 25-29 year old computing graduates in the population since 2009; this may be in part due to the dotcom crash at the turn of the century which led to a reduced intake on computing courses; in addition, outward migration during the recession may also be a factor.
- Overall, the current graduate output is encouraging: third level output increased and was particularly strong for computing; Ireland also has a relatively high share of science/computing graduates compared to the EU28.
- Inflows to third level courses have increased at level 8, primarily related to increases in computing; while science output is expected to remain relatively stable, computing output is expected to grow strongly.
- Labour market outcomes for those with **science** qualifications are positive: they have a high share in employment (particularly for those with post-graduate qualifications) in high skilled occupations; however, few graduates (particularly the younger cohorts) find work in science related fields indicating either a lack of opportunities or the transferability of the qualification to other areas (e.g. teaching, business and engineering).
- Labour market outcomes for **computing** qualification holders are very positive: there is a strong demand for computing skills in the labour market, particularly in professional occupations, and the highest shares in employment (even among the younger cohorts) are a reflection of these opportunities; while the output from the education system is continuing to increase, it is not sufficient to meet current demands.

5. Engineering, manufacturing and construction

5.1 Engineering etc. graduates in the population

Figure 5.1 shows the breakdown of persons (aged 20-64) in Ireland with engineering etc. qualifications[15] by education level in the fourth quarter of 2014.

- There were 254,000 persons aged 20-64 with engineering etc. related qualifications in quarter 4 2014, representing 18% of all those with post-secondary/third level qualifications in this age cohort; of all persons in this age cohort who had attained post-secondary education, 32% had a qualification in engineering etc.
- Of those with engineering etc. qualifications, 81% (206,000 persons) were employed; this is above the average (78%) across all fields of learning
- The majority of employed post-secondary/third level qualification holders worked in an area related to their qualification
- Those retired/unable to work accounted for almost a third of all engineering etc. graduates who were classified as not economically active
- Unlike other fields, engineering etc. had a higher number of persons with post-secondary education employed in related fields compared to third level graduates; three quarters of all employed post-secondary engineering etc. qualification holders were employed in a related field compared to half of third level graduates
- Those with post-secondary qualifications had a higher share of persons classified as not active who were retired/unable to work than their third-level equivalents.

Quarter 4 2009 comparison

- There was a 3% increase in the numbers in the population with engineering etc. related qualifications
- The overall numbers employed increased by 12%; while the numbers employed in related fields increased only marginally, the number of those employed in other fields increased by 30%
- There was a significant fall (-42%) in the numbers unemployed; while declines occurred across both educational levels, they were most pronounced for holders of post-secondary education
- The overall numbers classified as not active declined slightly with a fall in the numbers with post-secondary education and a rise in the numbers with third level qualifications.

[15] Education field refers to the field of learning from the highest qualification attained and may mask a person's primary degree.

Figure 5.1 Distribution of persons (aged 20-64) in the population with engineering, manufacturing and construction qualifications, Q4 2014

Source: SLMRU analysis of CSO (QNHS) data

5.1.1 Detailed breakdown of third level graduates by employment status

Table 5.1 provides a further breakdown of third level engineering etc. graduates by detailed education level and share in employment. There were over 140,000 third level graduates aged 20-64 in quarter 4 2014 accounting for 13% of all third level graduates. Over half had attained ordinary/honours bachelor's degrees or higher diplomas; at 15%, this discipline accounted for the second highest share of ordinary/honours bachelor's degrees or higher diplomas (after SSBL).

Table 5.1 Third level engineering etc. graduates (20-64) by detailed education level and % in employment, quarter 4 2014

	Total Q4 2014	% in employment	% of total third level grads
Higher cert/uni diploma	42,800	83%	13%
Ord/hons bachelor degree/higher dip	80,600	85%	15%
Masters/postgrad cert/dip	18,400	83%	10%
PhD	2,100	90%	12%
Total	143,900	84%	13%

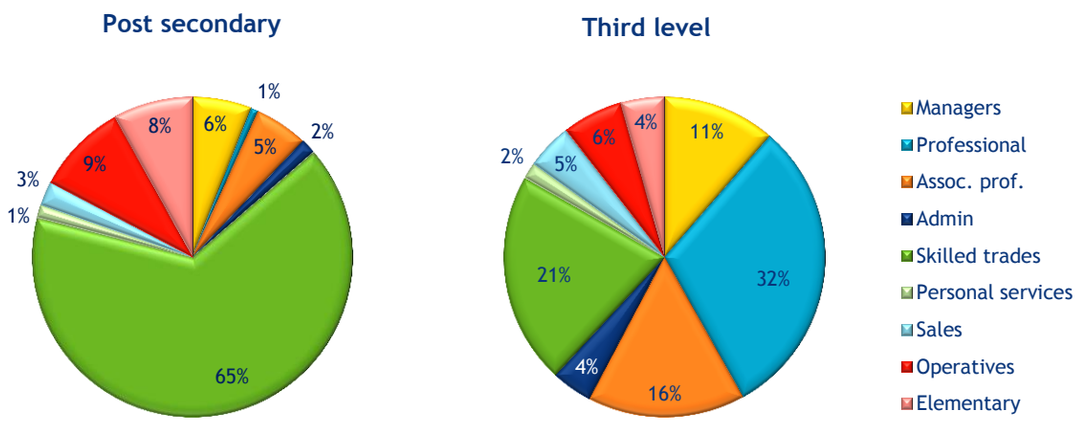
Source: SLMRU (SOLAS) analysis of CSO data

5.1.2 Employment of graduates by occupation and sector

Occupations (Figure 5.2)

- In quarter 4 2014, two thirds of those with post-secondary qualifications in engineering etc. were employed in skilled trades occupations (e.g. carpenters, electricians, mechanics, fitters), whereas those with third level qualifications had a higher share employed in professional occupations (32%, e.g. civil engineers, architects) with a fifth employed in skilled trades (e.g. fitters, IT engineers).
- When compared to quarter 4 2009, the shares employed in skilled trades fell for all levels of education while the shares (and absolute numbers) employed as operatives and managers increased.

Figure 5.2 Engineering etc. graduates (aged 20-64) by education level & occupation, quarter 4 2014

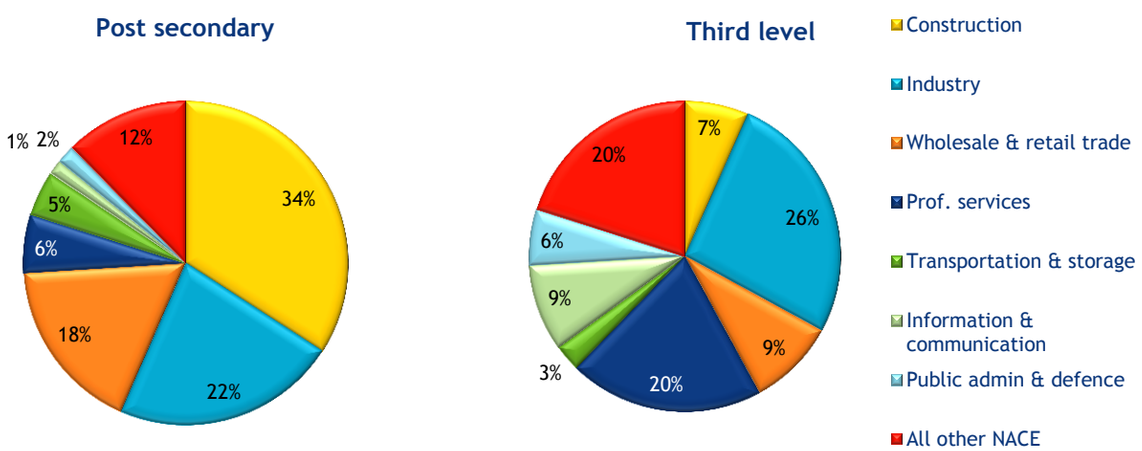


Source: SLMRU (SOLAS) analysis of CSO data

Sectors (Figure 5.3)

- In quarter 4 2014, engineering etc. post-secondary education holders were primarily employed in construction (34%), industry (22%, e.g. manufacture of food and fabricated metal products) and the wholesale and retail trade (18%, mainly relating to motor vehicles and motorcycles); those with third level qualifications were mostly employed in industry (26%, e.g. manufacture of pharmaceutical and computer/electronic products), professional activities (20%, almost all relating to architectural/engineering activities), wholesale/retail (9%), and IT (9%)
- For those with third level qualifications, the other nace category includes education (6%), financial activities (4%) and health (3%); for post-secondary education holders the other nace category is spread relatively evenly across the remaining sectors
- When compared to quarter 4 2009, the largest gains in the numbers employed were in professional activities (primarily at third level) and wholesale and retail trade (across both education levels); there were small declines in the numbers employed in construction.

Figure 5.3 Engineering etc. graduates (aged 20-64) by education level & sector, quarter 4 2014



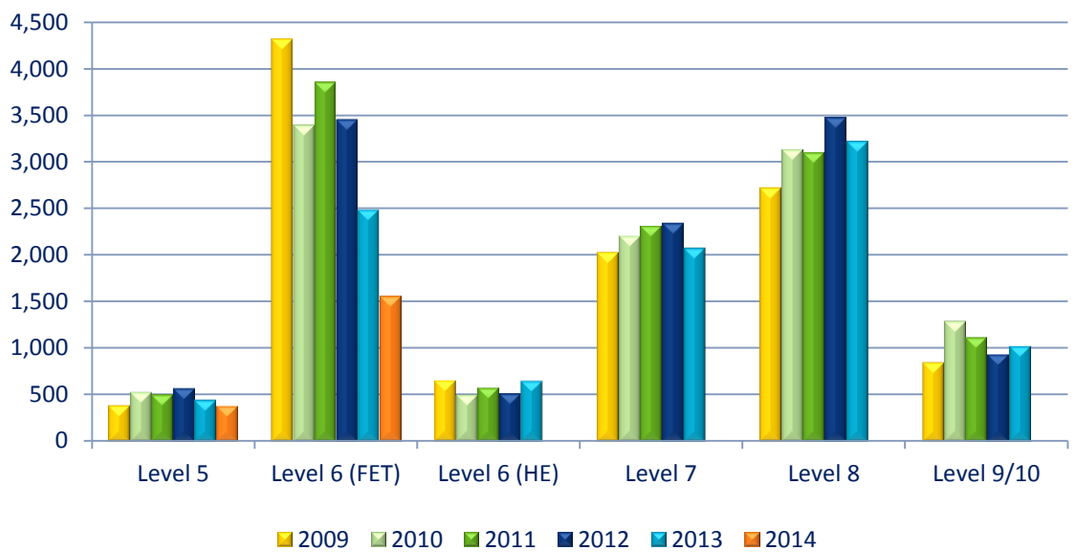
Source: SLMRU (SOLAS) analysis of CSO data

5.2 Engineering, manufacturing & construction graduate output

Figure 5.4 shows the number of awards made in further and higher education and training in 2009-2013; for further education and training 2014 awards data is also shown.

- In 2013, there were approximately **9,900 graduates** from the Irish education system; level 6 (mostly in FET) and level 8 graduates accounted for almost a third of the total each.
- When compared to 2009, there was **a 12% decline in the total number of awards in 2013**, amounting to 1,130 fewer graduates; the declines however were confined to the FET sector as the number of awards in the higher education sector increased.
- Not included in Figure 5.4 were 144 awards, spanning levels 6-9 on the NFQ, made to learners outside of the HEA-aided institutions (e.g. private, independent providers).

Figure 5.4 Graduate output by level (NFQ 5-10) in engineering etc, 2009-2014



Source: HEA/QQI (FET major awards)

Note: NFQ 1-4 do not appear on the graph as the numbers are too small: there were fewer than 80 awards each year across these levels

In terms of output by detailed field, Table 5.2 shows that in

- **Engineering**: in 2014, most awards at level 6 were craft awards (i.e. qualified apprentices), and included 20 awards in tool making (up from 10 awards in 2013), 75 in metal fabrication and 478 awards in electrical/electrical instrumentation (down from 729 in 2013); awards at levels 7 and 8 were typically for courses in electrical/electronic engineering and mechanical engineering
- **Manufacturing**: most awards were in higher education, typically for courses in food science/technology
- **Construction**: level 6 awards were mostly craft awards, particularly for carpentry & joinery (181 awards, down from 344 in 2013) and plumbing (206 awards, down from 330); in higher

education, awards were typically in civil engineering, construction management and quantity surveying.

Table 5.2 Engineering etc. graduates by level (NFQ 1-10) & detailed field, 2013/2014

	FET (2014)			Higher Ed (2013)					
	NFQ 1-4	NFQ 5	NFQ 6	NFQ 6	NFQ 7	NFQ 8	NFQ 9	NFQ 10	Total
Combined Eng., manuf. & const.	28	122	0		25	176	77	63	491
Engineering, *of which*	0	108	1,027	380	1,323	1,485	419	107	4,849
Mechanics & metal work		*0*	*175*	*74*	*366*	*443*	*26*	*2*	*1,086*
Electricity & energy		*0*	*527*	*83*	*313*	*298*	*75*	*0*	*1,296*
Electronics & automation		*15*	*58*	*109*	*402*	*349*	*104*	*20*	*1,057*
Chemical & process		*0*	*0*	*48*	*14*	*90*	*129*	*19*	*300*
Manufacturing & process,		62	20	142	113	234	68	7	646
Food processing		*0*	*0*	*32*	*47*	*87*	*39*	*6*	*211*
Materials				*5*	*47*	*76*	*0*	*1*	*129*
Construction		91	511	131	614	1,328	253	33	2,961
QQI-HE (2014)				2	5	87	50	0	144
	28	383	1,558	655	2,080	3,310	867	210	9,091

Source: QQI, HEA

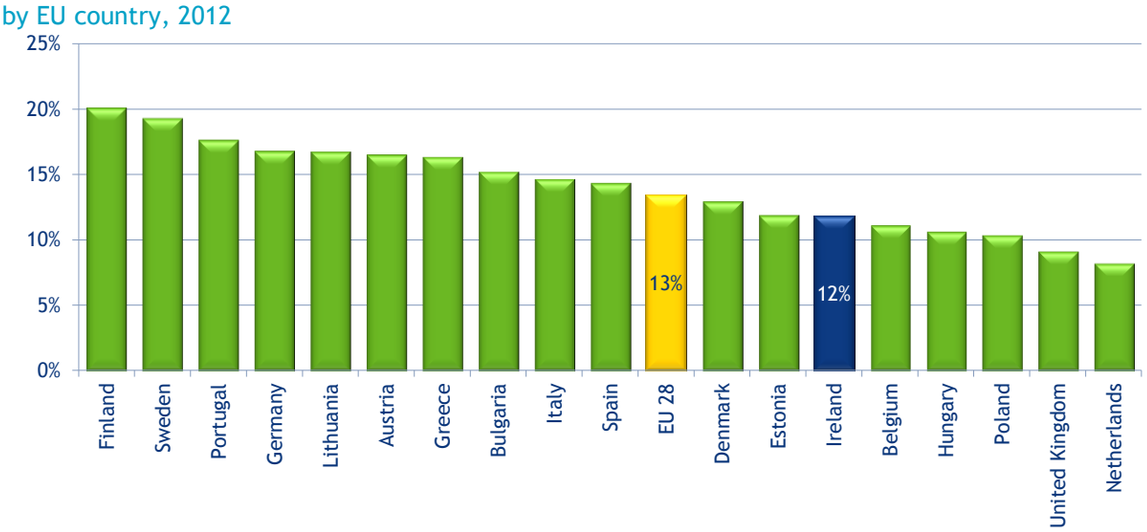
Comparison with 2009

- There were almost 3,000 fewer awards in FET, mostly due to declines in the number of apprenticeship craft awards (NFQ 6), particularly in construction crafts (e.g. carpentry/joinery, plumbing, plastering) which fell by 75% over the five-year period (almost 1,500 fewer qualifiers); these declines are a reflection of reduced intake into apprenticeships since the beginning of the recession
- At third level,
  - there has been a shift towards higher education attainment, with most of the additional awards gained over the five-year period made at levels 8-10; the increases were mostly in mechanical and electrical/electronic engineering, with smaller increases in construction
  - despite the increases in construction, the number **of quantity surveying/construction economics** awards at levels 7 & 8 declined, going from almost 500 to 300 over the five-year period, with most of the decline at level 7.

5.2.1 EU comparison

Figure 5.5 provides a breakdown of the share of third level engineering etc. graduates in 2012 across the EU 28 countries. At 12%, Ireland has a higher share of engineering, manufacturing and construction graduates when compared to countries such as the Netherlands, UK and Hungary but remains lower than the EU 28 average (13%) and that of countries such as Germany (17%), Sweden (19%) and Finland (20%).

Figure 5.5 Engineering, manufacturing & construction graduates as a % of all third level* graduates by EU country, 2012



Source: Eurostat

* Refers to all third level categories (equivalent in Ireland to levels 6-10)

5.3 First destination of graduates

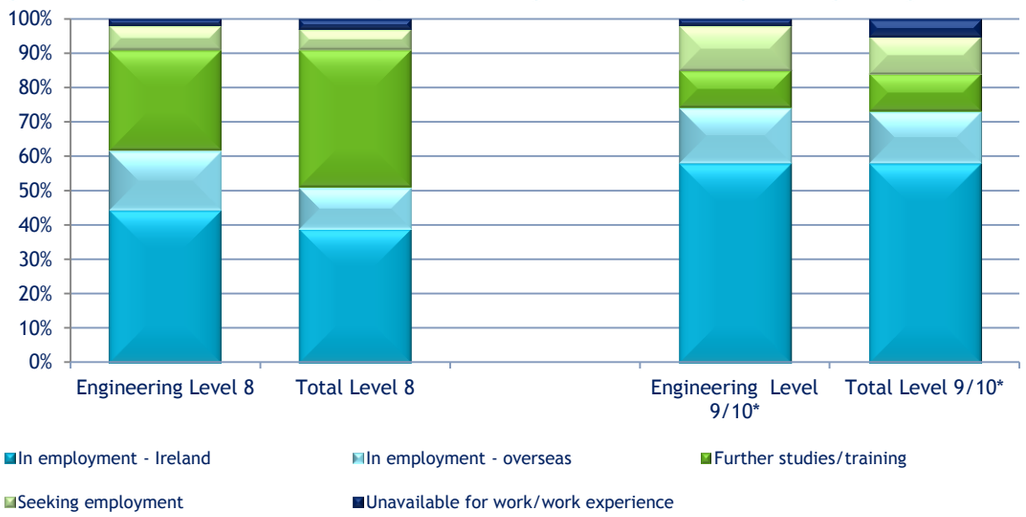
This section focuses on the economic status of those who have recently attained post-secondary or higher education qualifications. The FDS shows the destination of university graduates with honours bachelor degrees or masters/PhD awards whereas data from the CSO's QNHS examines qualification holders (both post-secondary and third level) aged 25-29 years as these are considered to be the closest proxy to recent graduates.

5.3.1 First Destination Survey

Figure 5.6 shows that, based on the HEA's report *What Do Graduates Do? The Class of 2013*,

- level 8 engineering etc. graduates had a higher share of persons employed than the overall graduate pool nine months after graduation (particularly in the case of those employed overseas) and a corresponding smaller share of graduates undertaking further studies/training.
- the destination of engineering etc. graduates at level 9/10 was broadly in line with the overall destination of graduates at this level.

Figure 5.6 First destination of NFQ level 8-10 higher education engineering etc. graduates, 2013



Source: HEA
*Level 9/10 includes masters and PhDs only

5.3.2 Recent qualification holders in the labour force

Table 5.3 provides a profile of 25-29 year-olds who hold post-secondary and third level qualifications based on the QNHS data.

- **Total:** in quarter 4 2009, there were almost equal numbers of post-secondary and third level engineering etc. graduates (aged 25-29); by quarter 4 2014, the numbers had fallen for both groups but most dramatically for those with post-secondary education which halved over the period
- **% in employment:** despite the decline in overall numbers, the share in employment increased since quarter 4 2009 for both levels of education with at least 80% of young engineering graduates in employment
- **% employed in related field:** those with post-secondary qualifications were more likely than their third level counterparts to be employed in a field related to their qualification in both time periods; only a half of third level graduates were employed in related fields in q4 2014.

Table 5.3 Employment status of young engineering etc. graduates (aged 25-29) by education level, quarter 4 2009 and quarter 4 2014

	Quarter 4 2009			Quarter 4 2014		
	Total	In employment		Total	In employment	
		%	% in related field		%	% in related field
Post-secondary	24,100	66%	80%	12,600	80%	75%
Third level	23,400	75%	51%	18,600	81%	50%
Total	47,500	71%	65%	31,200	80%	60%

Source: SLMRU (SOLAS) analysis of CSO data

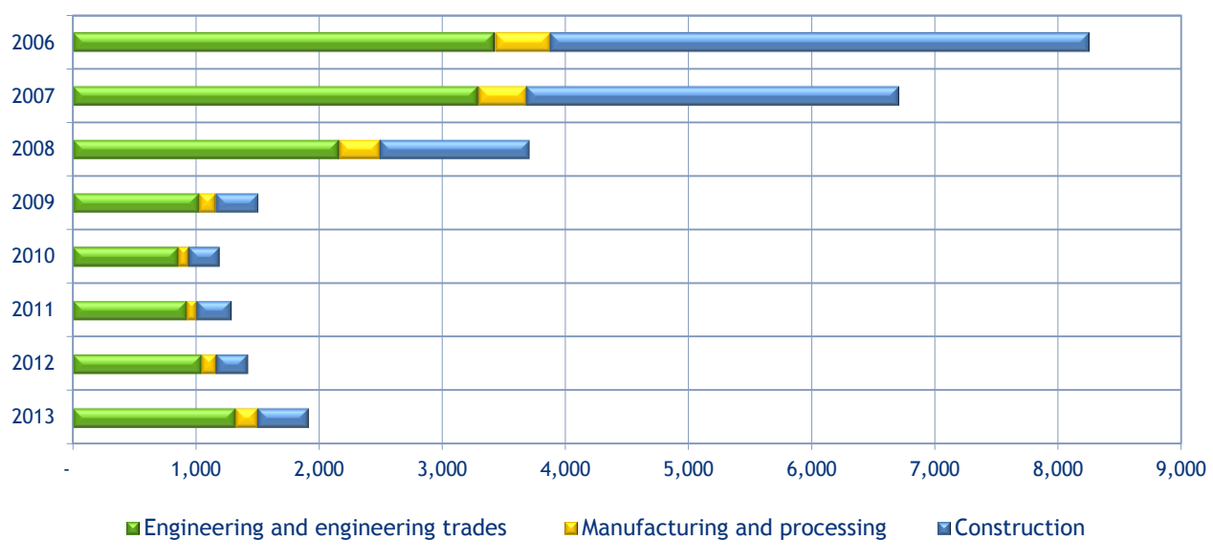
5.4 Future output of engineering related graduates

5.4.1 Apprenticeship registrations

Figure 5.7 details the number of new apprenticeship registrations in engineering etc. areas over the period 2006-2013. Although they remain much lower than the peak in 2006, the number of new registrations has been growing since the lowest levels in 2010.

- **Engineering trades:** accounted for 41% of all new apprenticeship registrations in 2006 and 69% in 2013; the increase of over 400 when compared to 2010 was primarily related to an increase in registrations for electricians and motor mechanics
- **Manufacturing:** accounted for 5% of all new apprenticeship registrations in 2006 and 10% in 2013; registrations are primarily in the area of metal fabrication
- **Construction:** new registrations experienced a very dramatic fall since 2006, with the share falling from 53% to 22% in 2013; small increases since 2010 were primarily due to increases in registrations for plumbers.

Figure 5.7 Apprenticeship registrations for engineering etc. trades, 2006-2013



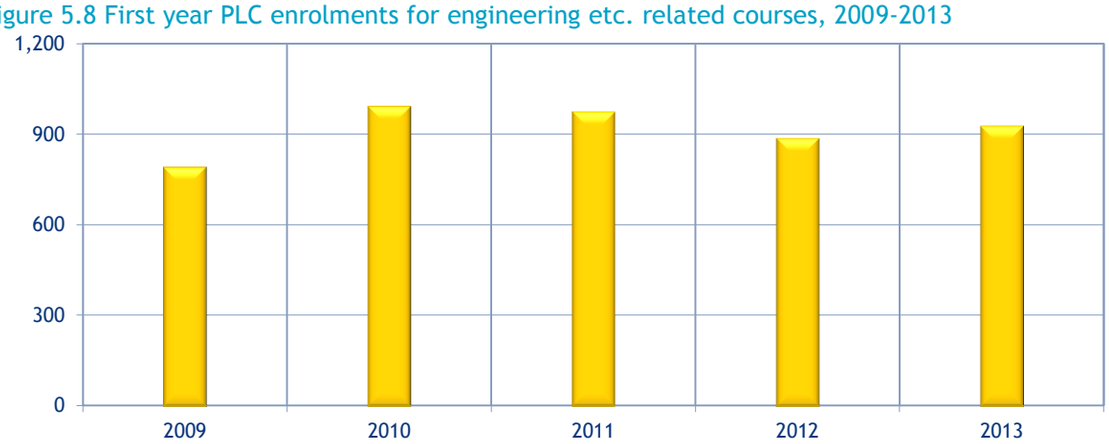
Source: SOLAS

5.4.2 PLC Enrolments

Figure 5.8 shows the number of year one enrolments for PLC engineering etc. courses.

- There were almost 930 learners enrolled on year one of a PLC course in engineering, etc.; this is a 5% increase (40 additional learners) on the preceding year, although the total remains lower than the peak of almost 1,000 observed in 2010
- The courses were primarily at level 5, accounting for 99% of all courses in 2013
- There was a shift away from construction (towards engineering) related courses over the five-year period: in 2009, these courses accounted for 43% of all year one enrolments, but by 2013, the share had fallen to 23%.

Figure 5.8 First year PLC enrolments for engineering etc. related courses, 2009-2013



Source: DES

5.4.3 CAO Acceptances (Figure 5.9)

In the main, the overall number of CAO acceptances for courses in engineering, manufacturing and construction declined steadily between 2010 and 2013; this relates to declines at levels 6 and 7. In contrast, the number of acceptances at level 8 has been increasing since 2011 with a 10% increase between 2013 and 2014. When broken down by detailed field of learning and course, the data shows the following:

Level 6:

- Engineering courses account for the highest share of acceptances at this level although the numbers have halved since 2010; since 2011 the number of acceptances for construction related courses has remained constant albeit at a low level
- Almost half of all acceptances in 2013 related to mechanical engineering courses

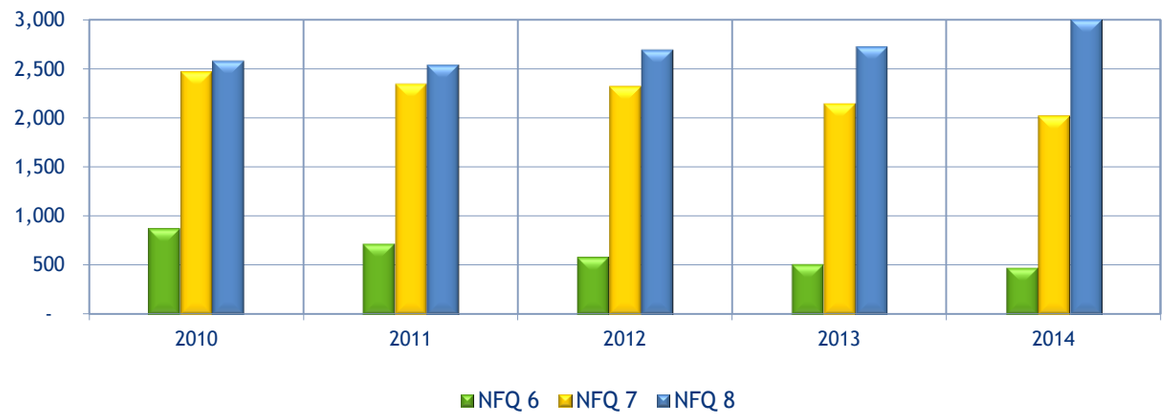
Level 7:

- Engineering related courses accounted for approximately two thirds of all acceptances at this level over the period examined
- Between 2010 and 2014 acceptances on construction courses experienced the largest fall at 45% whereas manufacturing acceptances increased, albeit from a small base
- Since 2013, acceptances on construction courses remained unchanged whereas declines occurred for both engineering and manufacturing related acceptances

Level 8:

- Engineering related courses at this level accounted for over a half of all acceptances in 2014
- Over the period 2010-2014, engineering and manufacturing acceptances increased whereas construction acceptances declined, most notably between 2010 and 2011
- Between 2013 and 2014 there were gains for each programme type but particularly so for construction courses which increased by 28%, across many areas including architecture, civil engineering, construction management and quantity surveying.

Figure 5.9 CAO acceptances for engineering, manufacturing & construction courses, 2010-2014



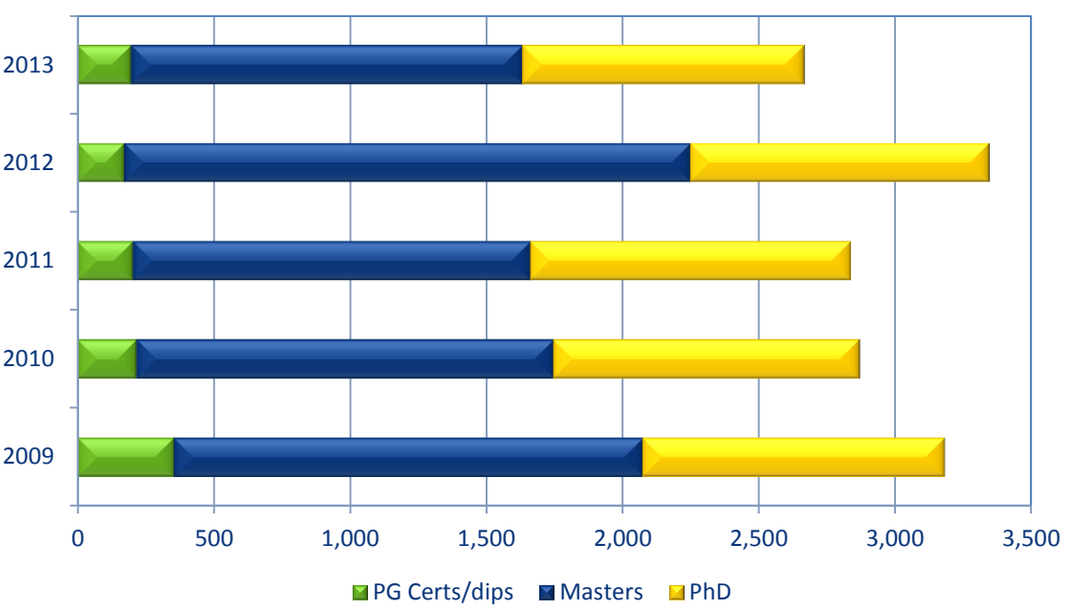
Source: CAO

5.4.4 Postgraduate enrolments

Figure 5.10 shows that masters programmes accounted for over a half of all enrolments in each year, PhD programmes for approximately over a third (39% in 2013).

- With the exception of 2012, overall numbers have been declining since 2009 across all programme types
- In 2013, engineering accounted for the largest share of enrolments (in areas including bioengineering, electrical/electronic, energy), followed by construction-related enrolments (e.g. architecture, civil, structural and environmental engineering).

Figure 5.10 Postgraduate enrolments in engineering, manufacturing & construction, 2009-2013



Source: HEA

5.5 Labour market outlook for engineers

The National Skills Bulletin 2015 indicates that shortages exist for a number of engineering occupations. Table 5.4 provides an education profile of those currently employed in the occupations identified as being in short supply. While this data does not show the skills required for these occupations, it provides an indication of the education level and field of those currently working in these occupations.

Of those selected engineering, manufacturing and construction occupations which have been identified with skills shortages, professionals were the most likely to have attained a third level qualification at 91%. In contrast, those employed in skilled trades occupations identified as having shortages were more likely to have attained post-secondary qualifications and were also the most likely to have attained qualifications in a related field. Those employed in operative positions identified with shortages had a low share of persons with qualifications at either post-secondary or third level, although of those that did have qualifications, 70% were in related fields.

Table 5.4 Education profile of engineering related occupations with skill shortages, quarter 4 2014

Occupation	% Post-sec	% third level	% with eng quals
Professionals	2%	91%	63%
Electrical & electronic engineers			
Production, process, design & development engineers			
Quality control engineers; other regulatory professionals			
Engineering professionals n.e.c.			
Architectural technologists, construction project managers & surveyors			
Associate Professional	13%	73%	54%
Electrical, electronic & engineering technicians			
Process & quality assurance technicians			
Skilled Trades	28%	23%	76%
Metal forming, welding & related trades			
Metal machining, fitting & instrument making trades			
Other construction trades			
Operatives	9%	11%	70%
Other process operatives			
Plant & machine operatives			
Total	20%	40%	69%

Source: NSB 2015 and SLMRU analysis of CSO (QNHS) data

5.6 Engineering, Manufacturing & Construction Supply – Other Facts & Figures

Gender	2%	Share of all QQI (FET) major awards in engineering, manufacturing & construction subjects made to females in 2014; this compares to a 62% share for females across all fields (Source: QQI)
	15%	Share of higher education graduates from engineering, manufacturing and construction programmes in 2013 who were female; this field had the lowest share of female graduates and compares to an average of 53% for higher education graduates overall (Source: HEA)
Lifelong Learning[16]	16,900	Number of 25-64 year-olds with engineering, manufacturing & construction qualifications who had participated in lifelong learning activities in quarter 4 2014 (Source: SLMRU analysis of CSO data)
	7%	Lifelong learning participation rate amongst those with engineering, manufacturing & construction qualifications, which is at the national average (Source: SLMRU analysis of QNHS data)
Further Education & Training	12,000	The number of QQI FET minor/special purpose and supplemental awards made in engineering, manufacturing & construction in 2014; almost 7,800 were at NFQ level 5; almost 9,400 were in construction related areas (Source: QQI)
	2,000	The number of QQI FET major awards made in engineering, manufacturing and construction to learners at ETBs (made up of former FÁS and VEC provider centres) (Source: QQI)
Higher Education	23%	The non-progression rate amongst higher education[17] new entrants in 2010/11 in undergraduate engineering*; this compares to 16% across all fields of learning; the non-progression rate was significantly lower for level 8 courses (12%) (Source: HEA)
	28%	The non-progression rate amongst higher education new entrants in 2010/11 in undergraduate construction programmes; this was the highest non-progression rate observed; the rate was lower for level 8 courses (17%) (Source: HEA)
	3	The percentage point increase in the non-progression rate for those studying engineering/manufacturing when compared to 2007/08 (Source: HEA)
	8	The percentage point increase in the non-progression rate for those studying construction when compared to 2007/08 (Source: HEA)
	410	The number of graduates (all levels) domiciled in Ireland but who obtained awards from UK higher education institutions in engineering and construction; this is a decline on 515 in 2013 (Source: HESA)

* Excludes civil engineering, which is included in the construction category.

[16] Lifelong learning refers to adults aged 25-64 years who undertook formal and/or non-formal learning in the four weeks prior to the QNHS survey.
[17] This refers to full-time undergraduate new entrants NFQ levels 6-8.

5.7 Outlook

- There were 254,000 persons (aged 20-64) with qualification in engineering, manufacturing and construction, representing 18% of all those with post-secondary or above education; almost half were post-secondary education holders, the highest number across all education fields.
- While employment rates were higher than average for both post-secondary and third level qualification holders, those with post-secondary education were more likely than their third level counterparts to work in an occupation related to their field of study.
- Post-secondary qualification holders worked mostly in construction, whereas third level graduates tended to work across a variety of sectors including industry and professional services.
- The FDS report shows that recent engineering graduates at level 8 were more likely than level 8 graduates overall to be employed overseas; there was also a considerable drop in the numbers of young engineering graduates (25-29 years) in the population since 2009, particularly at post-secondary education level.
- There has been a fall in the number of FET awards made in this field (which were mainly construction) in recent years, a reflection of reduced construction activity in the economy; higher education awards have, in the main, been increasing.
- The fall-off in enrolments at post-secondary level (i.e. PLCs and apprenticeships), reduced CAO acceptances at levels 6 and 7 and a decline in post-graduate enrolments suggest that the skills supply at levels 5-7 and 9-10 (especially for construction) will remain limited in the medium term; any increase in future output is likely to be driven by level 8 graduates particularly in engineering, although construction is also beginning to show signs of recovery.
- The collapse of the construction industry had an impact on employment opportunities for those with engineering, manufacturing and construction related qualifications, especially at post-secondary education level; these difficulties were primarily related to those working in construction related occupations.
- However, labour market opportunities were more positive for third level qualification holders, although this may entail working in an unrelated field (particularly for the younger cohorts).
- The anticipated recovery in the construction sector and the continued growth in engineering related areas should lead to positive outcomes for those with qualifications (both post-secondary and third level) in these areas.

6. Social science, business and law (SSBL)

6.1 Social science, business and law graduates in the population

Figure 6.1 shows the breakdown of persons (aged 20-64) in Ireland with qualifications in social science, business and law (SSBL)[18] in quarter 4 2014.

- There were 418,000 persons aged 20-64 years with SSBL qualifications, accounting for 30% of all post-secondary/third level award holders
- Of these, 330,000 (79%) were in employment, slightly above the average across all fields of learning (78%)
- Of those in employment, 234,500 (71%) were working in an area related to their studies, which is higher than the average across all fields of learning (61%); of those not economically active, 13,500 were students and approximately a half were on home duties
- At least four fifths of SSBL graduates in employment (either in related or unrelated fields) held third level qualifications
- At least two thirds of those who were either unemployed or not economically active held third level qualifications.

Quarter 4 2009 comparison

- The number of persons with SSBL qualifications grew by 7% (or 26,000 extra persons); despite an 8% increase in the numbers employed, this masks a 21% decline in the number with post-secondary qualifications in employment
- There was a 5% increase in the number of people with SSBL **working in a related area**, although the increase was confined to those with third level qualifications (+10%), as the number of those with post-secondary qualifications declined (by 21%); a similar pattern was observed for those working in an unrelated area, although the numbers involved were smaller
- There was a decline in the number of persons with both post-secondary and third level qualifications who were **unemployed**
- The number of persons with SSBL qualifications who were not active in the labour market grew by 7% due to an increase in the number classifying themselves as students or retired; the numbers with post-secondary education fell while the numbers with third level qualifications grew.

[18] Education field refers to the field of learning from the highest qualification attained and as such may mask a person's primary degree i.e. those with a computing degree may go on to attain an MBA and would therefore be captured in the social science, business & law category rather than in computing.

Figure 6.1 Distribution of persons (aged 20-64) with SSBL qualifications, quarter 4 2014

Source: SLMRU analysis of CSO (QNHS) data

6.1.1 Detailed breakdown of third level graduates by employment status

Table 6.1 provides a further breakdown of third level SSBL graduates by detailed education level and share in employment. There were over 350,000 third level graduates aged 20-64 in quarter 4 2014, accounting for 33% of all third level graduates. Those with masters or postgraduate certificates/diplomas had the highest share in employment at 87% and also accounted for over a third of all persons with qualifications at this level.

Table 6.1 Third level SSBL graduates (20-64) by detailed education level and % in employment, quarter 4 2014

	Total Q4 2014	% in employment	% of total third level grads
Higher cert/uni diploma	94,100	78%	30%
Ord/hons bachelor degree/higher dip	185,400	82%	34%
Masters/postgrad cert/dip	68,600	87%	37%
PhD	3,300	78%	18%
Total	351,400	82%	33%

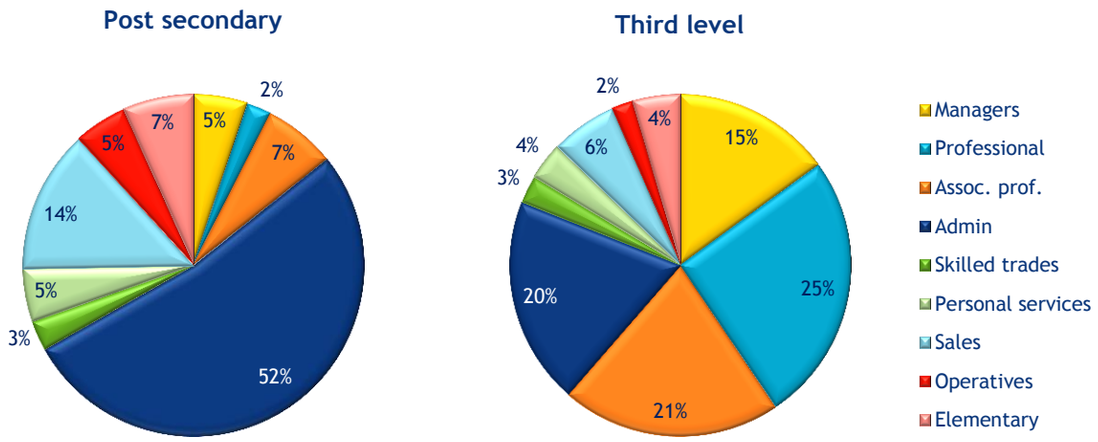
Source: SLMRU (SOLAS) analysis of CSO data

6.1.2 Employment of graduates by occupation and sector

Occupations (Figure 6.2)

- Post-secondary: of those with SSBL qualifications at this level in employment, 52% were working in administrative/secretarial occupations (e.g. administrative assistants, PAs); a further 14% were in sales and customer service (e.g. sales and retail assistants); approximately half of the decline in employment in this cohort since quarter 4 2009 was due to a decline in those employed in administrative occupations
- Third level: almost two thirds of employed third level graduates were in managerial (e.g. functional managers, managers in retail/wholesale), professional (half of whom were chartered/certified accountants) or associate professional (e.g. finance analysts, business sales executives) positions in quarter 4 2014 (compared to 14% for those with post-secondary education); since quarter 4 2009, the largest gains in employment in this cohort were for those working in associate professional occupations (+14,000) with declines for those in professional occupations (-4,000).

Figure 6.2 SSBL graduates (aged 20-64) by education level and occupation, quarter 4 2014

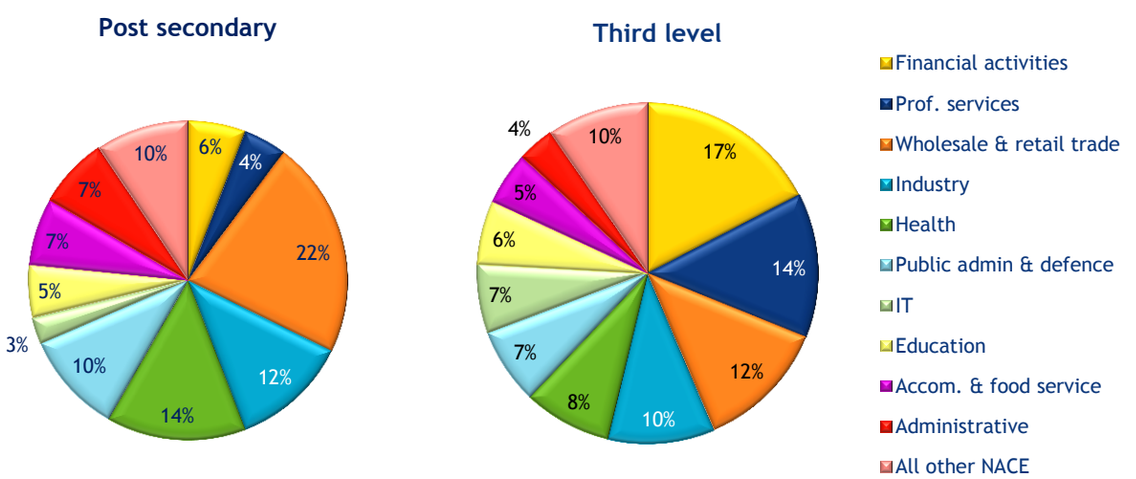


Source: SLMRU (SOLAS) analysis of CSO data

Sectors (Figure 6.3)

- Post-secondary: almost a quarter of those in employment with SSBL qualifications at this level were working in the wholesale and retail sector, followed by health and welfare (14%), industry (12%) and public administration and defence (10%); since quarter 4 2009, declines occurred across all sectors (except administrative activities), with declines most pronounced for those employed in financial activities
- Third level: the financial, insurance and real estate sector accounted for the highest share of persons employed in this cohort (17%), followed by professional activities (14%, e.g. legal and accounting activities); since quarter 4 2009, increases in employment occurred across all sectors except construction and education.

Figure 6.3 SSBL graduates (aged 20-64) by education and sector, quarter 4 2014



Source: SLMRU (SOLAS) analysis of CSO data

6.2. SSBL graduate output

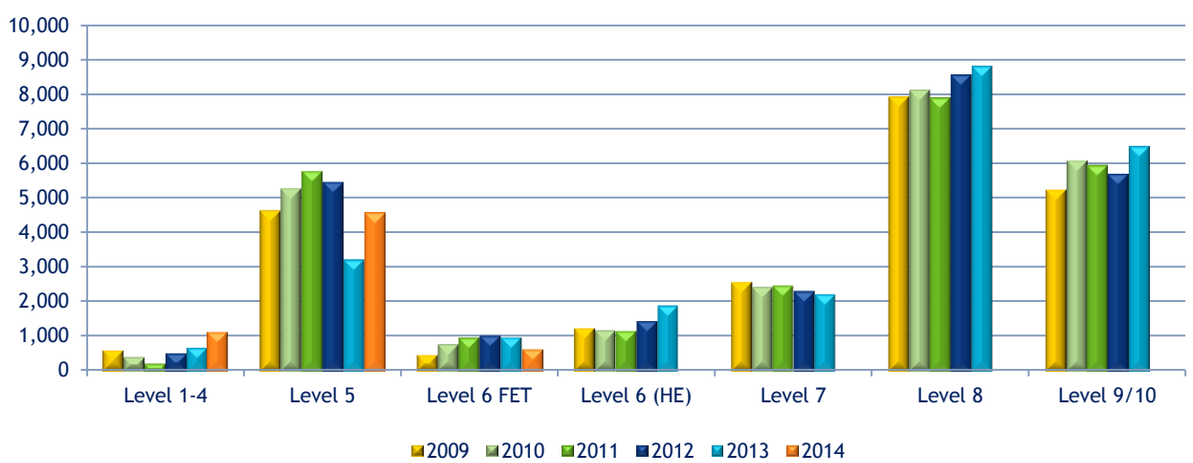
This section provides an outline of the potential future supply of SSBL graduates in the labour force. First, the number of awards made in the further and higher education and training system is provided; this is followed by an analysis of the first destination of recent graduates in terms of economic status.

6.2.1 Awards

Figure 6.4 shows the number of awards made in SSBL by level between 2009 and 2013. It also provides the number of FET awards in 2014.

- There were almost 24,400 awards in SSBL in Ireland in 2013, an increase of 7% (or approximately 1,600 additional awards) when compared to 2009, but a 3% decrease (734 fewer awards) when compared to 2012
- The growth observed between 2009 and 2013 was due to additional awards in higher education, particularly at levels 8 and 9
- The decline observed between 2012 and 2013 is due mostly to a 41% fall in the number of level 5 awards; while level 5 awards rose again in 2014, they remained below their peak levels observed in 2011
- Not included in the graph are an additional
  - 2,463 awards made to learners at private and independent colleges outside the HEA-aided sector in 2014
  - 949 professional qualifications made to learners through accountancy, tax and actuarial professional organisations (Appendix B2 lists the professional bodies included).

Figure 6.4 Awards in SSBL by NFQ level, 2009-2014



Source: QQI (FET major awards), HEA[19]

[19] In addition approximately 40 new qualifiers are admitted as Fellows of the Actuarial Society of Ireland every year; (actuarial science is included in the data on mathematics, science & computing).

Table 6.2 provides a breakdown of awards by detailed field of learning and level.

Of the 18,400 business, administration and law graduates (NFQ 3-10),

- approximately 29% were for **honours degrees** (level 8), typically for courses in business studies or commerce; they included over 500 graduates in international business, or BComm/business studies with a language (e.g. BComm International); not included in the table are approximately 90 level 8 awards in actuarial science/mathematics (as they are included in the mathematics numbers in Chapter 4);
- more than a quarter were in the FET sector, primarily at level 5 and mostly for office administration

- The vast majority (61%) of secretarial awards at levels 1-4 were for subjects such as information processing, spreadsheets etc.
- There were over 1,500 graduates in accounting and taxation and a further 760 in finance, banking & insurance, mostly at levels 8-10; in addition, professional qualifications, including accountants, taxation experts and actuaries amounted to almost a further 2,000; of these, newly qualified actuaries accounted for approximately 40.

Table 6.2 Further, higher & prof. education & training SSBL by detailed field & level, 2013/2014

	FET (2014)			Higher education (2013)					Non-aligned awards	Total
	NFQ 1-4	NFQ 5	NFQ 6	NFQ 6	NFQ 7	NFQ 8	NFQ 9	NFQ 10		
Combined SSBL (HEA)	0	0	0	6	48	571	21	2	-	648
Social science & information, *inc.*	0	1,113	53	367	170	1,819	1,374	126	-	5,022
Economics	*0*	*0*	*0*	*0*	*0*	*178*	*171*	*21*	-	*370*
Business & admin, *inc.*	1,135	3,435	589	1,494	1,885	5,410	4,390	55	-	18,393
Sales	*200*	*226*	*11*	*26*	*17*	*64*	*84*	*0*	-	*628*
Marketing/advertising	-	*53*	-	*124*	*231*	*403*	*506*	*0*	-	*1,317*
Finance & insurance	-	-	-	*51*	*9*	*141*	*554*	*1*	-	*756*
Accounting & tax	-	-	-	*55*	*323*	*695*	*440*	*0*	-	*1,513*
Secretarial	*935*	*1,366*	-	*67*	*51*	-	-	-	-	*2,419*
Law	-	21	-	38	132	1,010	498	33	-	1,732
Professional qualifications (2014)	-	-	-				1,336		652	1,988
QQI-HE (2014), *inc.*	-	-	-	88	314	1,550	511	0	-	2,463
Social science & info	-	-	-	-	*33*	*328*	*33*	-	-	*394*
Business & admin	-	-	-	*88*	*281*	*1,222*	*511*	-	-	*2,069*
Total	1,135	4,569	642	1,993	2,549	10,360	8,130	216	652	30,246

Source: QQI, HEA, IAASA (accountancy), Irish Tax Institute, and Society of Actuaries in Ireland

Note: undergraduate data relative to actuarial science is classified with science and mathematics and does not appear in the data in the table above as they are categorised with mathematics and science data in Chapter 4.

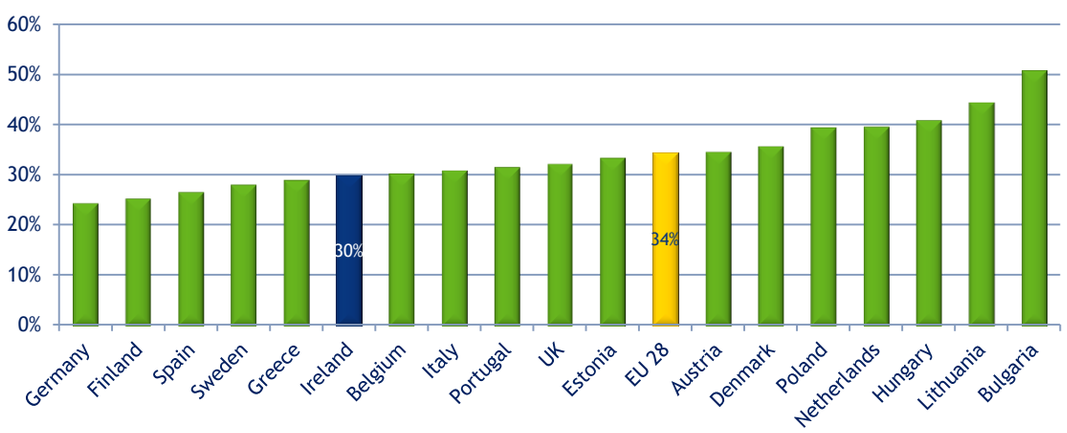
Comparison with 2009

- There was an 11% rise in the number of FET awards; the growth was most pronounced at levels 3 and 4 which combined accounted for over four fifths of the total increase; these additional awards were primarily in the area of information processing
- The overall growth for FET awards masks fluctuations in the intervening years, particularly at level 5, where the number of awards rose by 14% between 2009 and 2011, but declined by 41% between 2012 and 2013
- The growth at level 8 included more than 100 additional awards each in business with language (reaching over 200 awards in 2013) and business and accounting/finance (reaching approximately 500) in 2013; at postgraduate level, much of the increase was due to a rise in the number of awards in business management/administration, and to a lesser extent, business with accounting/finance.

6.2.2 EU Comparison (Figure 6.5)

In 2012, approximately 30% of Ireland's third level graduates had studied programmes in social science, business and law; this compares to the EU 28 average of 34%; however, countries such as Germany and Finland have smaller shares of SSBL graduates amongst their third level graduates (approximately a quarter), while countries such as Lithuania and Bulgaria have higher shares (in excess of 40%).

Figure 6.5 SSBL third* level graduates as a share of total graduates in selected EU countries, 2012



Source: Eurostat

* Refers to all third level categories (equivalent in Ireland to levels 6-10)

6.3 First destination of graduates

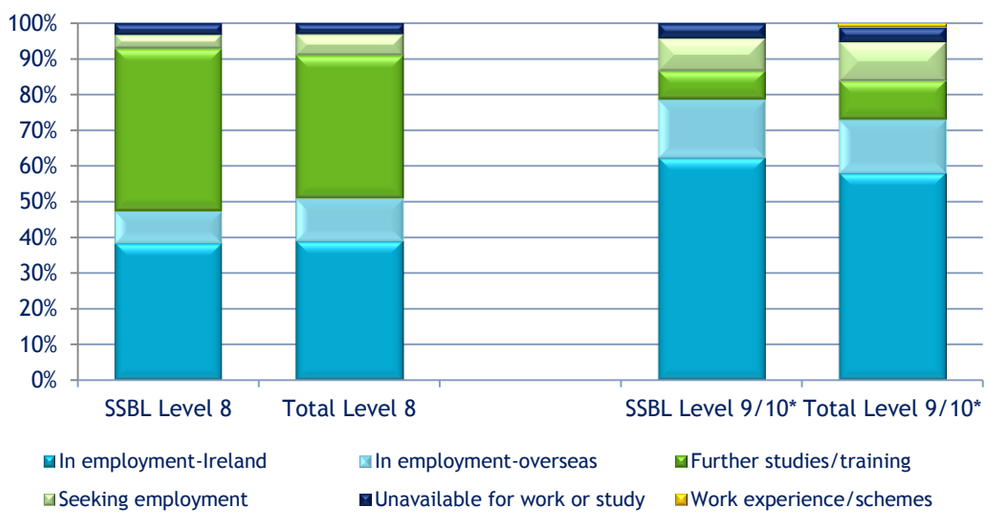
This section focuses on the economic status of those who have recently attained post-secondary or higher education qualifications. The HEA's First Destination Survey shows the destination of university graduates with honours bachelor degrees or masters/PhD awards whereas data from the CSO's QNHS examines qualification holders (both post-secondary and third level) aged 25-29 years as these are considered to be the closest proxy to recent graduates.

6.3.1 First Destination Survey (FDS)

Figure 6.6 shows that for

- level 8, SSBL graduates are slightly less likely to be in employment than level 8 graduates overall, relating in the main to those employed overseas; SSBL level 8 graduates are more likely to be in further studies/training and less likely to be seeking employment
- level 9/10, SSBL graduates are more likely to be in employment than level 9/10 graduates overall and less likely to be seeking employment.

Figure 6.6 First destination of NFQ level 8 and level 9/10 SSBL graduates, 2013



Source: HEA

*Level 9/10 includes masters and PhDs only

6.3.2 Recent qualification holders in the labour force

Table 6.3 provides a profile of 25-29 year-olds who hold SSBL post-secondary and third level qualifications based on the CSO'S QNHS data.

- **Total:** in quarter 4 2014, there were over 50,000 SSBL graduates (aged 25-29), almost entirely at third level; when compared to quarter 4 2009, the numbers declined for both education levels, although the decline was more pronounced for post-secondary education holders in relative terms with a decline of 56%

- **% in employment:** in quarter 4 2014, 80% of all young SSBL qualification holders were in employment: third level graduates were far more likely to be in employment, with a share of 82% compared to 58% for post-secondary education holders; when compared to quarter 4 2009, the share in employment with post-secondary education declined significantly (by 18 percentage points) whereas it fell by five percentage point for third level graduates
- **% employed in related field:** in quarter 4 2014, post-secondary qualification holders were most likely to be in employment in a related field; the share of third level graduates employed in a related field declined by three percentage points when compared to quarter 4 2009.

Table 6.3 Employment status of young SSBL graduates (aged 25-29) by education level, quarter 4 2009 and quarter 4 2014

	Quarter 4 2009			Quarter 4 2014		
	Total	In employment		Total	In employment	
		%	% in related field		%	% in related field
Post-secondary	9,100	76%	78%	4,000	58%	82%
Third level	63,500	87%	77%	47,000	82%	74%
Total	72,600	85%	77%	51,000	80%	74%

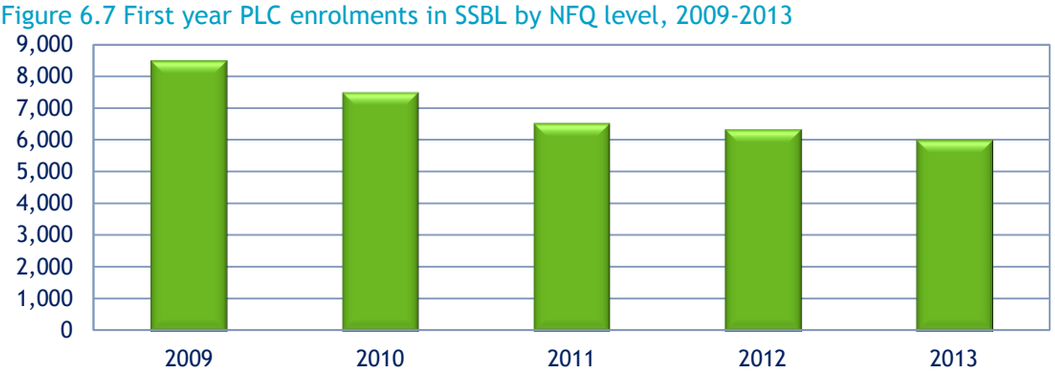
Source: SLMRU (SOLAS) analysis of CSO data

6.4 Future output of SSBL graduates

6.4.1 PLC Enrolments

As detailed in Figure 6.7, the number of first-years enrolled on SSBL courses has declined since 2009, resulting in almost 2,500 fewer learners in this field. Despite the decline, there have been increases in the non-business related fields (i.e. social science, journalism or law), where the total number of awards increased more than five-fold to reach approximately 1,100 in 2013.

Figure 6.7 First year PLC enrolments in SSBL by NFQ level, 2009-2013



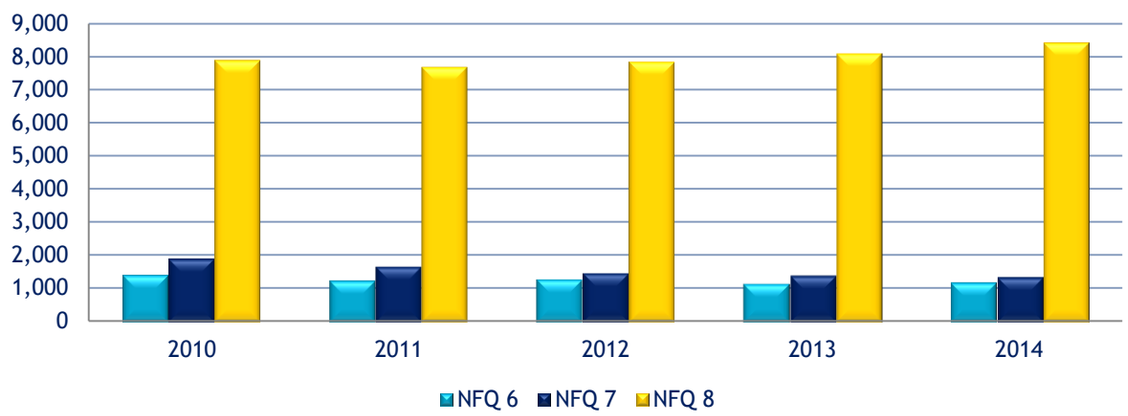
Source: DES

6.4.2 CAO Acceptances (Figure 6.8)

The number of CAO acceptances (levels 6-8) for courses in SSBL declined by 7% between 2010 and 2014; this was as result of a fall in the number of acceptances at level 6 (-16%) and level 7 (-29%), whereas level 8 acceptances rose by 4%.

- At levels 6 and 7 the declines were across almost all detailed fields of learning (e.g. marketing, accounting, sales), although the largest declines were for the courses with the largest numbers such as those in business studies and management related
- At level 8, the number of acceptances have been on the increase since 2011 (+733 acceptances), primarily related to increases in acceptances on business and law courses.

Figure 6.8 CAO acceptances in SSBL, 2010-2014

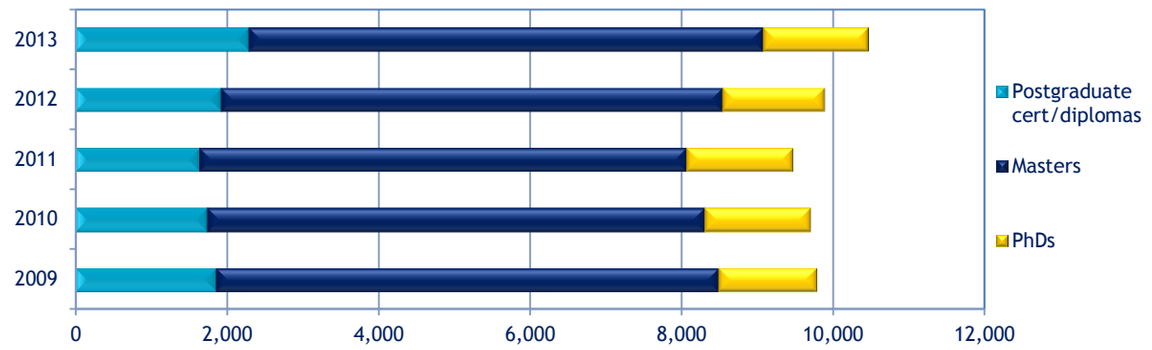


Source: CAO

6.4.3 Postgraduate enrolments in SSBL by programme type (Figure 6.9)

- Masters enrolments accounted for approximately two thirds of total postgraduate enrolments every year
- When compared to 2009, the share of masters enrolments declined from 68% to 65% although the share for postgraduate certs/diplomas increased (going from 19% to 22%); the share of PhDs, despite small changes in the intervening years, remained stable at 13%
- Within master's programmes, the highest number of enrolments in 2013 was for taught masters, amounting to over 6,600 enrolments. Of these, 44% were in administration related areas (including management), a fifth were in social science, while the remainder was distributed among other fields such as accounting/finance and marketing. Research masters accounted for comparatively few enrolments (less than 200).

Figure 6.9 Postgraduate enrolments in SSBL by programme type, 2009-2013



Source: HEA

6.5 Labour market outlook for business related occupations

The National Skills Bulletin 2015 indicates that shortages exist for a number of business related occupations. Table 6.4 provides an education profile of those currently employed in these occupations. While this data does not show the skills required for these occupations, it provides an indication of the education level and field of those currently working in these occupations. .

Business related professional occupations which were identified as having skills shortages had a high share of third level graduates (at 93%) and also a high share with SSBL-related qualifications (at 77%). In contrast, less than half of those in customer service roles with skills shortages had third level qualifications or qualifications related to their work.

Table 6.4 Education profile of SSBL occupations with skill shortages, quarter 4 2014

Occupation	% Post-sec	% third level	% with SSBL quals
Professionals	1%	93%	77%
Accountants & tax experts			
Mgt. consultants, business analysts & project managers			
Actuaries, economists & statisticians; other business professionals			
Associate Professional	5%	61%	65%
Brokers & insurance underwriters			
Finance & investment analysts			
Business sales executives			
Sales accounts & business development managers			
Administrative	9%	54%	72%
Financial admin.			
Stock control, transport & distribution admin.			
Sales and customer services	10%	45%	41%
Customer service occupations			
Total	6%	66%	69%

Source: NSB 2015 and SLMRU analysis of CSO (QNHS) data

6.6 SSBL skills supply - other facts and figures

Gender	68%	Share of all QQI (FET) major awards in SSBL subjects **made to females** in 2014; this holds across all levels 4-6, but at level 3 the distribution was almost balanced, with females receiving 54% of all major awards in this field (Source: QQI)
	53%	Share of higher education graduates from SSBL programmes in 2013 who were female; this compares to an average of 53% for higher education graduates overall (Source: HEA)
Lifelong Learning[20]	38,100	Number of 25-64 year-olds with SSBL qualifications who had participated in **lifelong learning** activities in quarter 4 2014 (Source: SLMRU analysis of QNHS data)
	9.7%	**Lifelong learning participation rate** amongst those with SSBL qualifications; this compares to 7.3% on average nationally (Source: SLMRU analysis of QNHS data)
Further Education & Training	39,000	The number of **QQI FET minor and special purpose awards** made in SSBL in 2014; of these, 19,600 were at NFQ 5; more than 23,000 were for secretarial/data processing courses (Source: QQI)
	5,800	The number of QQI FET major awards made in SSBL to **learners at ETBs** (made up of former FÁS and VEC provider centres) (Source: QQI)
Higher Education	15%	The **non-progression rate amongst higher education**[21] new entrants in 2010/11 in SSBL and arts/humanities; this compares to 16% across all fields of learning; the non-progression rate was lower for level 8 courses (11%) (Source: HEA)
	1	The percentage point increase in the non-progression rate for those studying SSBL and arts/humanities when compared to 2007/08 (Source: HEA)
	925	The number of graduates who were domiciled in Ireland but obtained awards in business and administration* from **UK higher education** institutions; this is a decline on 1,750 in 2013 (Source: HESA).

*UK higher education fields or learning are not directly comparable with the ISCED classification used in this report; business and administration includes tourism & transport management subjects.

[20] Lifelong learning refers to adults aged 25-64 years who undertook formal and/or non-formal learning in the four weeks prior to the QNHS survey.
[21] Refers to full-time undergraduate new entrants NFQ levels 6-8.

6.7 Outlook

- There were 418,000 persons aged 20-64 years with SSBL qualifications, accounting for almost a third of all post-secondary/third level award holders.
- SSBL graduates tend to find employment spanning all sectors of the economy but at the higher end of the skill scale, particularly in the case of third level graduates; third level graduates have a high share in employment while post-secondary education holders have a significantly lower than average share in employment.
- There was a significant fall in the number of young (25-29) SSBL graduates in the population since 2009; in addition, there was a fall in the share in employment.
- Recent declines in enrolments for PLC courses are likely to impact negatively on output at post-secondary level in the short-term, particularly in relation to business related subjects.
- There has been a shift towards higher levels of the NFQ amongst graduates from SSBL higher education programmes; this trend is likely to continue: increases in CAO acceptances at levels 8 and in postgraduate enrolments are expected to be reflected in sustained high levels of graduate output in SSBL in the medium term.
- As those with SSBL qualifications are employed across a wide range of occupations and sectors, the outlook for future employment opportunities is difficult to predict; however, there are many business related occupations which have been identified as experiencing shortages and growth prospects are positive for the financial and professional services sectors (which combined employ 10% of SSBL post-secondary qualification holders and 31% of third level holders).
- The labour market outcomes for third level graduates are positive, with graduates employed in high skilled occupations related to their field of study and across a variety of sectors; outcomes for post-secondary education graduates are less favourable with indications that the younger age cohorts are facing challenges in entering the labour market.

7. Health and welfare

7.1 Health and welfare graduates in the population

Figure 7.1 shows the breakdown of persons (aged 20-64) in Ireland with health and welfare qualifications[22] by education level. In quarter 4 2014,

- There were 204,000 persons aged 20-64 with qualifications in health and welfare, representing 14% of all those with post-secondary/third level qualifications in this age cohort; at 75%, this discipline had a slightly lower than average (76%) share of persons with third level qualifications
- Of those with health and welfare qualifications, 78% (159,000 persons) were employed, which is in line with the average for all fields of learning
- The majority (75%) of employed post-secondary/third level health and welfare qualification holders worked in an area related to their qualification, the highest share of all fields of learning
- Almost a half of those classified as not active were on home duties
- Two thirds of persons with health and welfare post-secondary qualifications were employed in related fields compared to 77% for third level graduates
- While third level graduates accounted for 78% of those employed, they accounted for 44% of unemployed persons from this discipline and 67% of those classified as not active.

Quarter 4 2009 comparison

- There was a 31% increase in the numbers in the population with health and welfare related qualifications, primarily due to an increase in post-secondary educated care workers
- The overall numbers employed increased by 27%, with increases almost equally shared between those with post-secondary and third level qualifications
- This was one of the few disciplines which experienced an increase in unemployment over the period
- The overall numbers classified as not active increased by 48%, with increases in most areas but particularly for those categorised as students and retired.

[22] Education field refers to the field of learning from the highest qualification attained and may mask a person's primary degree.

Figure 7.1 Distribution of persons (aged 20-64) in the population with health and welfare qualifications, quarter 4 2014

Source: SLMRU analysis of CSO (QNHS) data

7.1.1 Detailed breakdown of third level graduates by employment status

Table 7.1 provides a further breakdown of third level health and welfare graduates by detailed education level and share in employment. There were over 150,000 third level graduates aged 20-64 in quarter 4 2014 accounting for 14% of all third level graduates. The share in employment across each programme type was higher than average and the share in employment increased the higher the level of education. This field of learning accounted for over a fifth of all persons who held a PhD qualification.

Table 7.1 Third level health and welfare graduates (20-64) by detailed education level and % in employment, quarter 4 2014

Programme type	Total Q4 2014	% in employment	% of total third level grads
Higher cert/uni diploma	55,100	75%	17%
Ord/hons bachelor degree/higher dip	71,000	85%	13%
Masters/postgrad cert/dip	22,600	87%	12%
PhD	3,900	87%	22%
Total	152,600	82%	14%

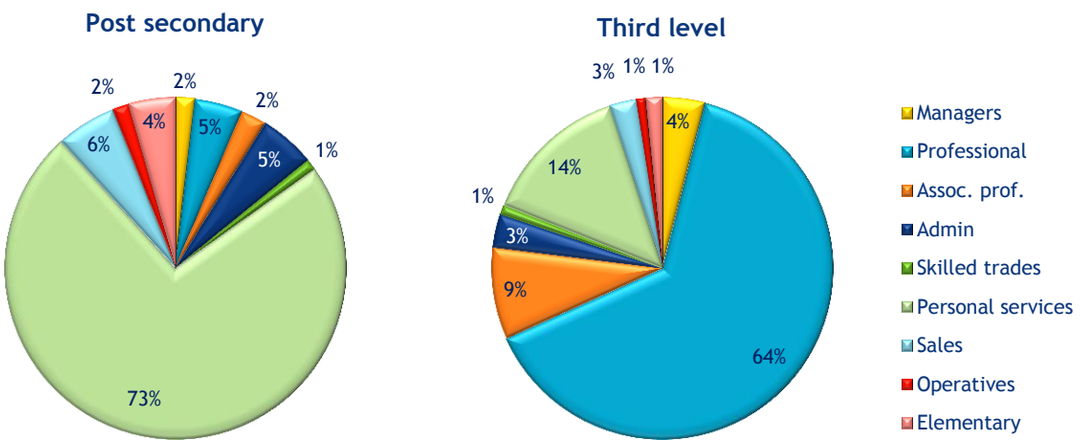
Source: SLMRU (SOLAS) analysis of CSO data

7.1.2 Employment of graduates by occupation and sector

Occupations (Figure 7.2)

- Post-secondary: almost three quarters of employed health and welfare qualifications at this level were working in personal services (e.g. care workers, childminders) occupations; the number of post-secondary qualification holders in employment in personal services increased by over 130% since quarter 4 2009
- Third level: in contrast, approximately two thirds of employed third level graduates were in professional positions (e.g. nurses, doctors) in quarter 4 2014; since quarter 4 2009, while employment growth occurred across all occupations, the largest gains in employment were for those working in professional occupations (+5,000).

Figure 7.2 Health and welfare graduates (aged 20-64) by education level and occupation, q4 2014

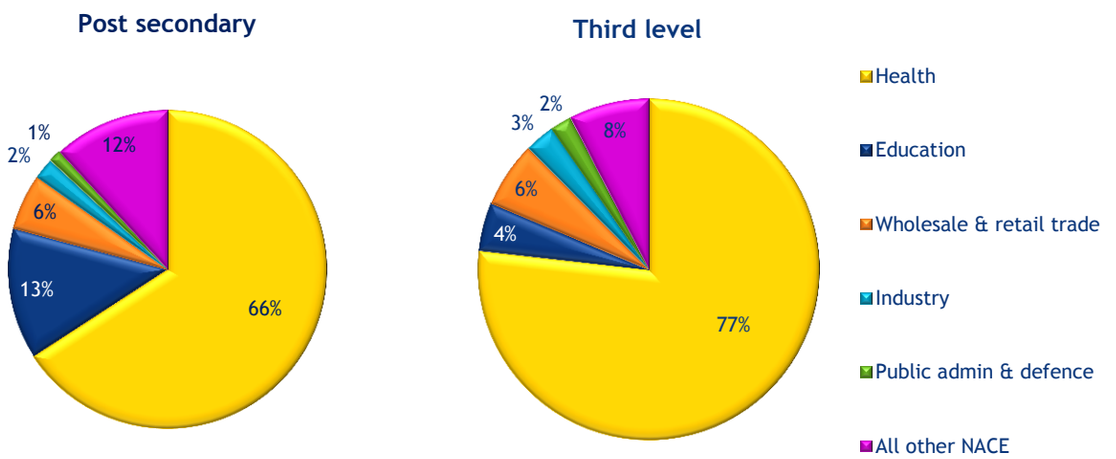


Source: SLMRU (SOLAS) analysis of CSO data

Sectors (Figure 7.3)

- Post-secondary: two thirds of those with health and welfare qualifications at this level were working in the health sector, with a further 13% employed in education; since quarter 4 2009, the numbers employed in the health sector doubled accounting for almost all the employment growth
- Third level: over three quarters of graduates at this level were employed in the health sector in quarter 4 2014; the 16% increase in employment since quarter 4 2009 for this cohort was due in the main to growth in employment in the health sector.

Figure 7.3 Health and welfare graduates (aged 20-64) by education level and sector, quarter 4 2014



Source: SLMRU (SOLAS) analysis of CSO data

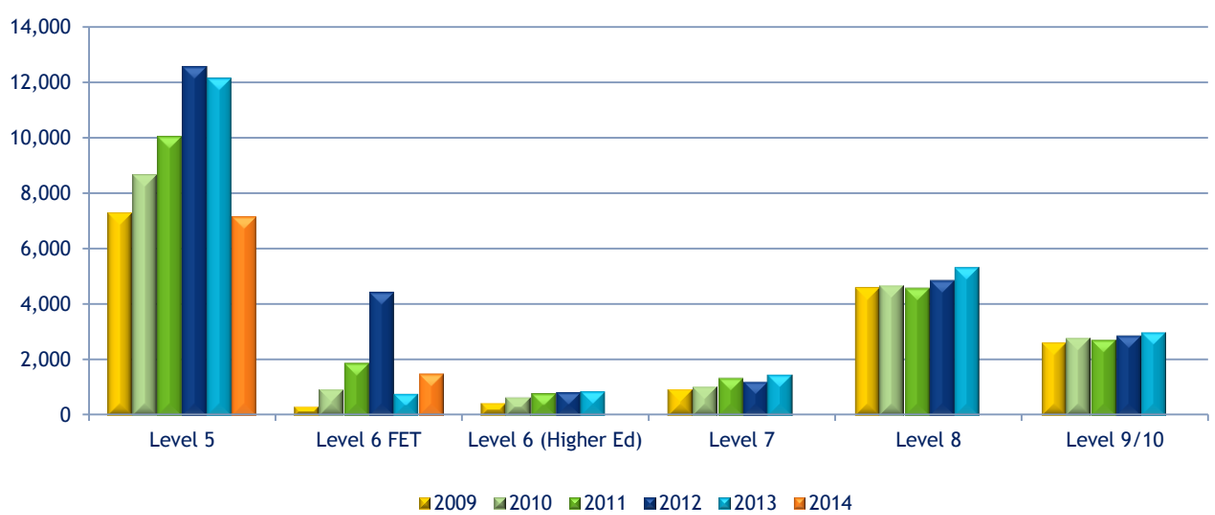
7.2. Health and welfare graduate output

7.2.1 Awards

Figure 7.4 shows the number of awards made in health and welfare by level between 2009 and 2013. Also shown are the number of FET awards made in 2014.

- There were almost 23,800 awards in health and welfare in Ireland in 2013, an increase of 46% (or approximately 7,400 additional awards) when compared to 2009, but a 12% decrease (over 3,000 fewer awards when compared to 2012)
- Between 2009 and 2013, there were increases across all NFQ levels, with the greatest, in absolute terms, in the FET sector at level 5 (almost 4,900 additional awards); the number of FET awards, however, declined subsequently and in 2014 totalled 8,700 (compared to 13,000 the preceding year)
- Not included in the graph are
  - an additional 741 higher education awards made to learners at private and independent colleges outside the HEA-aided sector in 2014
  - awards at levels 1-4, where the total number made each year amounted to fewer than 40.

Figure 7.4 Awards in health and welfare by NFQ level, 2009-2013/2014



Source: QQI (FET major awards), HEA

Table 7.2 provides a breakdown of awards by detailed field of learning and level.

- Of the 20,200 awards in 2013/2014, over one half were in health related fields (mostly nursing, followed by medicine) and 46% were in welfare rated areas, the majority of which were in childcare.
- However, while health related awards tend to be in higher education, especially at levels 8 or higher, welfare awards tend to be in the FET sector, mostly at level 5.
- Level 5 had the highest number of awards, at over 7,100

- QQI higher education awards made to learners at private, independent providers were mostly in the area of welfare e.g. counselling, psychotherapy, play therapy, social care etc) and were made mostly at level 7, followed by levels 8 and 9.

Table 7.2 FET and higher education health/welfare awards by detailed field & level, 2013/2014

	FET (2014)			Higher Education (2013)					Total
	NFQ 1-4	NFQ 5	NFQ 6	NFQ 6	NFQ 7	NFQ 8	NFQ 9	NFQ 10	
Combined health & welfare	-	-	-	-	16	25	27	5	73
Health, *including*	-	3,287	-	165	502	3,930	2,264	292	10,440
Medicine	-	-	-	*0*	*76*	*959*	*419*	*198*	*1,652*
Nursing & caring	-	*3,287*	-	*17*	*147*	*1,751*	*996*	*13*	*6,211*
Dental studies	-	-	-	*22*	*88*	*89*	*16*	*20*	*235*
Pharmacy	-	-	-	*85*	*99*	*195*	*283*	*16*	*678*
Welfare, *including*	35	3,844	1,506	725	966	1,399	418	10	8,903
Childcare youth services	*35*	*2,637*	*1,341*	*264*	*398*	*622*	*29*	-	*5,326*
Social work & counselling	-	*1,207*	*165*	*461*	*568*	*777*	*389*	*10*	*3,577*
QQI-HE (2014)	-	-	-	48	303	197	192	1	741
Total	35	7,131	1,506	938	1,787	5,551	2,901	308	20,157

Source: QQI, HEA

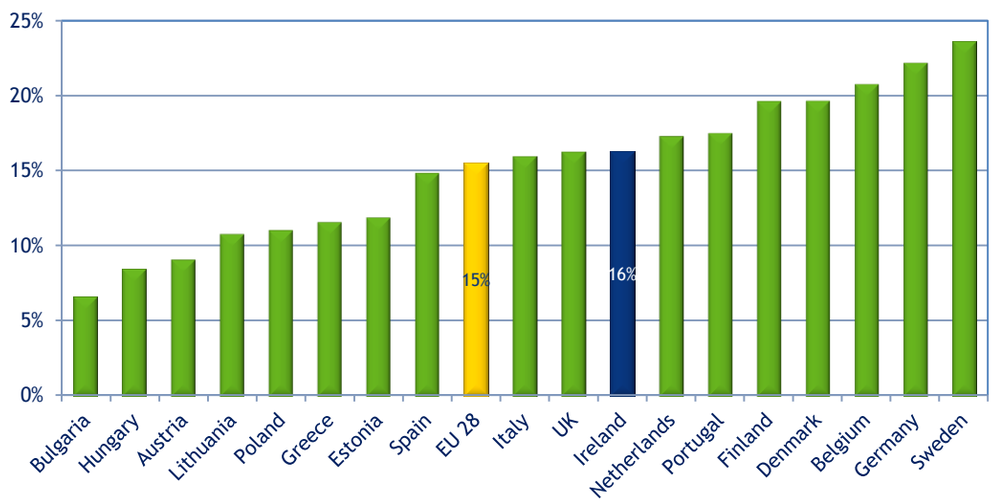
Comparison with 2009

- The total number of FET awards grew by approximately 1,000 (12%), due mostly to an increase in the number of childcare/education awards at level 6; the spike at level 6 in 2012 was due to an increased (and subsequent decrease in 2013) in the number of supervision in childcare awards.
- The 2% fall in the number of level 5 awards between 2009 and 2014 masks annual increases (especially in healthcare support/services and childcare) which occurred between 2009 and 2012 but a 41% decline which occurred between 2013 and 2014; the 2013-2014 decline was primarily for awards in healthcare support, health services skills and community health services, which combined fell by approximately 4,700 awards
- Increases in higher education related primarily to welfare-related courses (i.e. social care); the most significant increase was at level 6 where the numbers almost doubled between 2009 and 2014, albeit from a small base.

7.2.2 EU Comparison (Figure 6.5)

On average, 15% of all third level graduates in the EU in 2012 had studied health/welfare programmes; Ireland, has a slightly higher share at 16%, although countries such as Sweden, Germany and Belgium have even higher shares at over 20%.

Figure 7.5 Health/welfare third* level graduates as a share of total graduates in selected EU countries, 2012



Source: Eurostat

* Refers to all third level categories (equivalent in Ireland to levels 6-10)

7.3 First destination of graduates

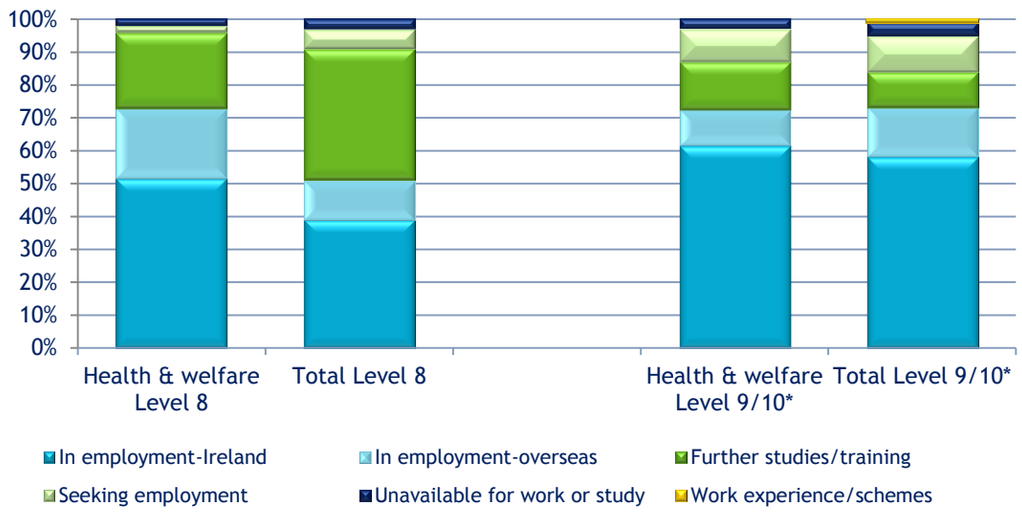
This section focuses on the economic status of those who have recently attained post-secondary or higher education qualifications. The HEA's First Destination Survey shows the destination of university graduates with honours bachelor degrees or masters/PhD awards whereas data from the CSO's QNHS examines qualification holders (both post-secondary and third level) aged 25-29 years as these are considered to be the closest proxy to recent graduates.

7.3.1 First Destination Survey

Figure 7.6 shows that for

- level 8: health and welfare graduates at this level had a much higher rate of employment in Ireland and abroad nine months after graduation than the total cohort and as such, less likely to be engaged in further learning or seeking employment
- level 9/10: health and welfare graduates were more likely to be in employment in Ireland than level 9/10 graduates overall but less likely to be in employment overseas.

Figure 7.6 First destination of NFQ level 8 and level 9/10 health and welfare graduates, 2013



Source: HEA

*Level 9/10 includes Masters and PhDs only

7.3.2 Recent qualification holders in the labour force

Table 7.3 provides a profile of 25-29 year-olds who hold health and welfare post-secondary and third level qualifications based on the QNHS data.

- **Total:** in quarter 4 2014, there were 25,000 health and welfare graduates (aged 25-29); when compared to quarter 4 2009, the numbers increased for both levels of education
- **% in employment:** in quarter 4 2014, 74% of all young health and welfare qualification holders were in employment; third level graduates were far more likely to be in employment, with a share of 81% compared to 53% for post-secondary education holders; when compared to quarter 4 2009, the share in employment with post-secondary education dropped by one percentage point whereas it fell by five percentage point for third level graduates
- **% employed in related field:** in quarter 4 2014, the share of third level graduates employed in a related field fell by six percentage points when compared to quarter 4 2009; at 72%, however, they were much more likely to be employed in a related field than those with post-secondary qualifications.

Table 7.3 Employment status of young health and welfare graduates (aged 25-29) by education level, quarter 4 2009 and quarter 4 2014

	Quarter 4 2009			Quarter 4 2014		
	Total	In employment		Total	In employment	
		%	% in related field		%	% in related field
Post-secondary	4,300	54%	*	6,200	53%	56%
Third level	17,400	86%	78%	18,800	81%	72%
Total	21,700	80%	73%	25,000	74%	69%

Source: SLMRU (SOLAS) analysis of CSO data

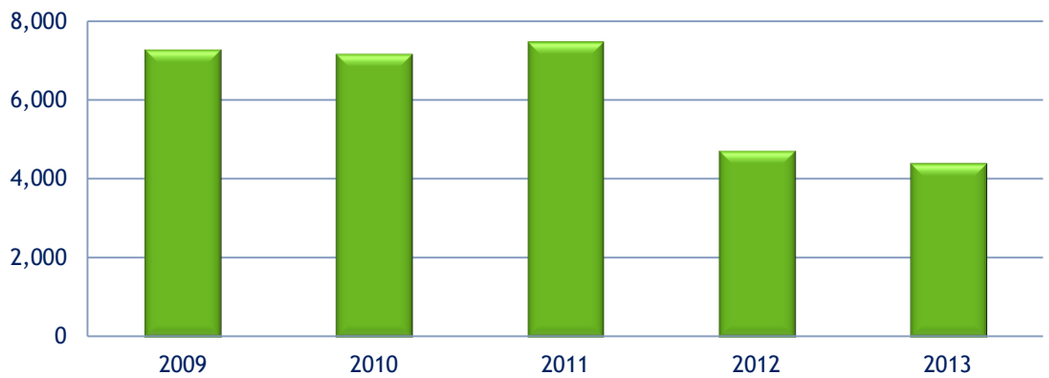
* Numbers are too small to report

7.4 Future output of health and welfare graduates

7.4.1 PLC Enrolments

- There were 4,400 learners enrolled on year 1 of health/welfare related PLC courses in 2013; of these almost 1,000 were for healthcare support courses and a further 1,700 were for nursing studies courses; other courses include community and health services, community care, etc.
- Between 2012 and 2013, the number of learners declined by approximately 300 (or 6%); while there also appears to be a significant decline when compared to enrolments in 2009-2011, the decline was related to the introduction of *early childhood care and education* courses (classified within the education field) and the cessation of the *community and health services - childcare* course (in the health/welfare field). When this change is considered, the decline between 2009 and 2013 amounts to fewer than 200 learners (or a 2% decrease).

Figure 7.7 First year PLC enrolments in health/welfare by NFQ level, 2009-2013

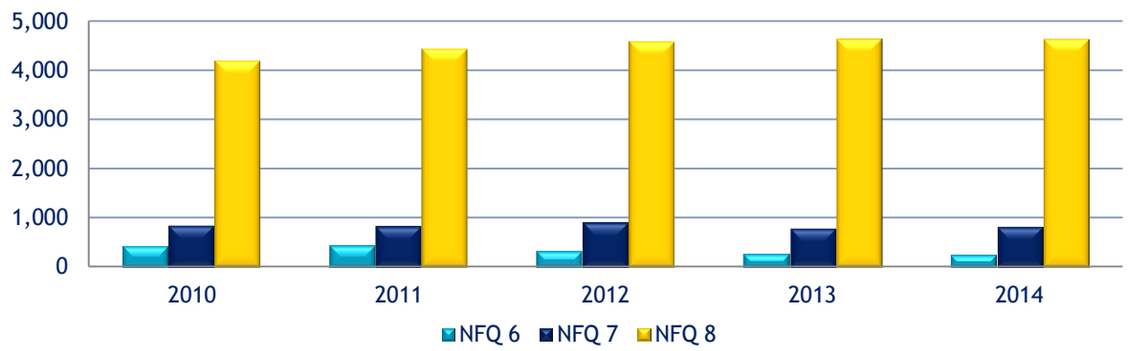


Source: DES

7.4.2 CAO Acceptances

- The overall number of CAO acceptances (levels 6-8) for courses in health and welfare increased by 4% between 2010 and 2014; while declines occurred at levels 6 and 7, acceptances at level 8 increased by 10% over the period
- At levels 6 and 7, most courses were in the area of social work, with acceptances declining in this subject over the time period examined
- At level 8, the number of acceptances have remained static since 2012; courses relating to nursing accounted for a third of all acceptances in 2014, with the largest gains in acceptances since 2010 occurring for social service related courses.

Figure 7.8 CAO acceptances in health and welfare, 2010-2014

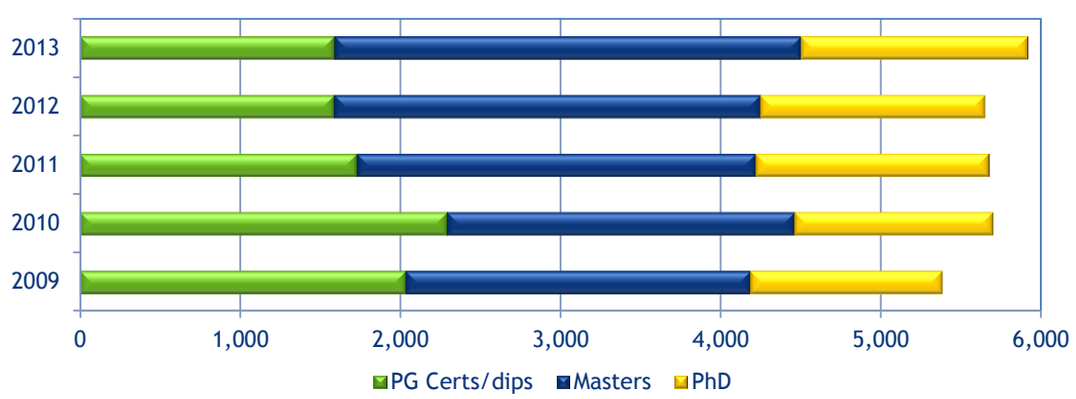


Source: CAO

7.4.3 Postgraduate enrolments in health and welfare by programme type, 2009-2013 (Figure 7.9)

- The number of postgraduate enrolments reached their highest level in 2013 at over 5,900, representing a 10% increase (or 530 additional learners) when compared to 2009
- Masters enrolments accounted for the largest number of health/welfare enrolments each year, excluding 2010
- PhD programmes accounted for approximately a quarter of all postgraduate enrolments.

Figure 7.9 Postgraduate enrolments in health and welfare by programme type, 2009-2013



Source: HEA

7.5 Labour market outlook for health and welfare related occupations

The National Skills Bulletin 2015 indicates that shortages exist for a number of health and welfare related occupations. Table 7.4 provides an education profile of those currently employed in these occupations. While this data does not show the skills required for these occupations, it provides an indication of the education level and field of those currently working in these occupations.

Almost all persons currently employed in health related occupations which have been identified as in short supply had third level qualifications and in health-related areas.

Table 7.4 Education profile of health related occupations with skill shortages, quarter 4 2014

Occupation	% Post-sec	% third level	% with health quals
Professionals	1%	95%	86%
Medical practitioners			
Nurses & midwives			
Other health professionals n.e.c			
Total	1%	95%	86%

Source: NSB 2015 and SLMRU analysis of CSO (QNHS) data

7.6 Health & welfare skills supply - other facts and figures

Gender	88%	Share of all QQI (FET) major awards in health/welfare subjects **made to females** in 2014; this compares to a 62% share for females across all fields (Source: QQI)
	76%	Share of higher education graduates from health/welfare programmes in 2013 who were female; for medicine (honours degrees), however, the female share is lower, making up 54% of all graduates; this compares to an average of 53% for higher education graduates overall (Source: HEA)
Lifelong Learning[23]	24,100	Number of 25-64 year-olds with health/welfare qualifications who had participated in **lifelong learning** activities in quarter 4 2014 (Source: SLMRU analysis of QNHS data)
	12.7%	**Lifelong learning participation rate** amongst those with health/welfare qualifications; this compares to 7.3% on average nationally (refers to 25-64 year-olds) (Source: SLMRU analysis of QNHS data)

[23] Lifelong learning refers to adults aged 25-64 years who undertook formal and/or non-formal learning in the four weeks prior to the QNHS survey.

Further Education & Training	27,000	The number of **QQI FET minor and special purpose awards** made in health and welfare in 2014 mostly at NFQ 5; almost 12,000 were in childcare with a further 10,000 in caring skills. (Source: QQI)
	6,900	The number of QQI FET major awards made in health and welfare to **learners at ETBs** (made up of former FÁS and VEC provider centres) (Source: QQI)
Higher Education	8%	The **non-progression rate amongst higher education**[24] new entrants in 2010/11 in healthcare programmes; this compares to 16% across all fields of learning; the non-progression rate was slightly lower for level 8 courses (7%) (Source: HEA)
	1	The percentage point decrease in the non-progression rate for those studying healthcare when compared to 2007/08 (Source: HEA)
	1,395	The number of graduates who were domiciled in Ireland but obtained awards in health, vet & agriculture from **UK higher education** institutions; this is an increase on the 1, 620 awards in 2013 (Source: HESA).

7.7 Outlook

- At over 200,000 (20-64 years), the health and welfare discipline had the third highest number of qualification holders after SSBL and engineering etc.; of these, 50,000 held post-secondary education and were mostly employed as care workers; in contrast, the 150,000 third level graduates were mostly employed in professional occupations, such as doctors and nurses.
- The FDS report shows that health and welfare level 8 graduates have a higher than average share in employment overseas after graduation indicating that their skills are highly mobile.
- Output from FET courses (usually 1-2 years) have tended to fluctuate, whereas output at third level has remained broadly steady; this is likely to be sustained as inflows have followed a similar pattern in recent years.
- The labour market outcomes for third level graduates in this discipline are positive (high employment rates with employment mainly in health professional occupations); post-secondary graduate outcomes were less favourable (lower than average share in employment and slightly less likely than their third level counterparts to work in a related field).
- Employment opportunities in the health sector are mostly in government funded activities; although there have been limited opportunities in recent years due to recruitment freezes and tight healthcare budgets, demand for these skills are expected to be sustained and most likely to increase due both to demographic factors and an improved fiscal situation.

[24] Refers to full-time undergraduate new entrants NFQ levels 6-8.

8. Services

8.1 Services graduates in the population

Figure 8.1 shows the breakdown of persons (aged 20-64) in Ireland with qualifications[25] in services by education level. In quarter 4 2014

- There were 112,000 persons aged 20-64 with qualifications in services, representing 8% of all those with post-secondary/third level qualifications in this age cohort; at 65%, this discipline had one of the lowest share of persons with third level qualifications
- Of those with services qualifications, 73% (81,000 persons) were employed, which is below the average for all fields of learning (78%)
- Of those employed, 55% worked in an area related to their qualification, which is below the average for all fields of learning
- Almost a half of those classified as not active were on home duties
- Over two thirds of persons with services post-secondary qualifications were employed in related fields compared to 49% for third level graduates
- Of those not active in the labour market, over half (12,000) were classified as on home duties, the highest share across all fields of learning.

Quarter 4 2009 comparison

- There was a 15% increase in the numbers in the population with services related qualifications
- The overall numbers employed also increased by 15%, primarily at third level, with increases in the numbers employed in skilled trades (i.e. chefs) and in sales (i.e. sales and retail assistants)
- There was very little change in the numbers unemployed whereas those not economically active increased by 3,500 (or 19%), almost all at post-secondary level.

[25] Education field refers to the field of learning from the highest qualification attained and may mask a person's primary degree.

Figure 8.1 Distribution of persons (aged 20-64) in the population with services qualifications, quarter 4 2014

Source: SLMRU analysis of CSO (QNHS) data

8.1.1 Detailed breakdown of third level graduates by employment status

Table 8.1 provides a further breakdown of third level services graduates by detailed education level and share in employment. In total, there were over 70,000 third level graduates aged 20-64 in quarter 4 2014 in services accounting for 7% of all third level graduates. Those who held a higher certificate or university diploma accounted for two thirds of all third level graduates in this cohort. This group had the lowest share in employment at 76% compared to 84% for degree/higher diploma holders.

Table 8.1 Third level services graduates (20-64) by detailed education level and % in employment, quarter 4 2014

	Total Q4 2014	% in employment	% of total third level grads
Higher cert/uni diploma	47,900	76%	15%
Ord/hons bachelor degree/higher dip	19,800	84%	4%
Masters/postgrad cert/dip and PhD*	5,300	76%	3%
Total	73,000	79%	7%

Source: SLMRU (SOLAS) analysis of CSO data

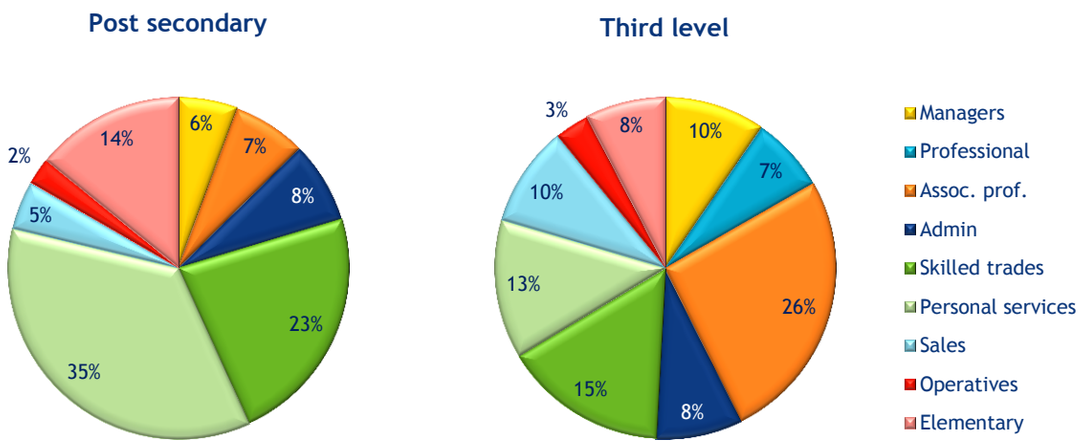
* Numbers too small to report PhD graduates separately

8.1.2 Employment of graduates by occupation and sector

Occupations (Figure 8.2)

- Post-secondary: over half of all services graduates at this level were employed in skilled trades (e.g. chefs) or personal services (e.g. hairdressers) in quarter 4 2014; since quarter 4 2009, employment fell for most occupations excluding skilled trades and personal services
- Third level: employment in quarter 4 2014 was spread across all occupational groups with a quarter in associate professional roles (e.g. protective services), 15% in skilled trades (e.g. chefs) and 13% in personal services (e.g. hairdressers); since quarter 4 2009, employment increased across most occupations but particularly for sales and customer service roles (+3,000) and skilled trades (+2,500).

Figure 8.2 Services graduates (aged 20-64) by education level and occupation, quarter 4 2014

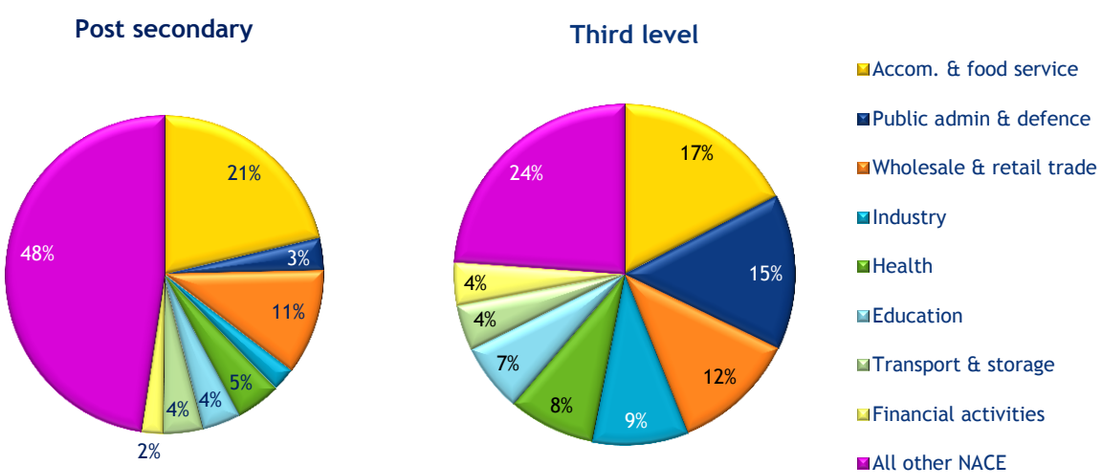


Source: SLMRU (SOLAS) analysis of CSO data

Sectors (Figure 8.3)

- Post-secondary: almost a half of those employed at this level in quarter 4 2014 were in other NACE categories (which includes hairdressing activities) with a further fifth in accommodation and food services; there was very little change in employment levels since quarter 4 2009 across all sectors
- Third level: employment at this level was primarily in the areas of accommodation and food services, other NACE and public administration which is in line with the occupational breakdown previously discussed for third level graduates in services; the 20% increase in employment since quarter 4 2009 relates primarily to increases in employment of third level services graduates in industry, wholesale and retail and accommodation and food services.

Figure 8.3 Services graduates (aged 20-64) by education and sector, quarter 4 2014



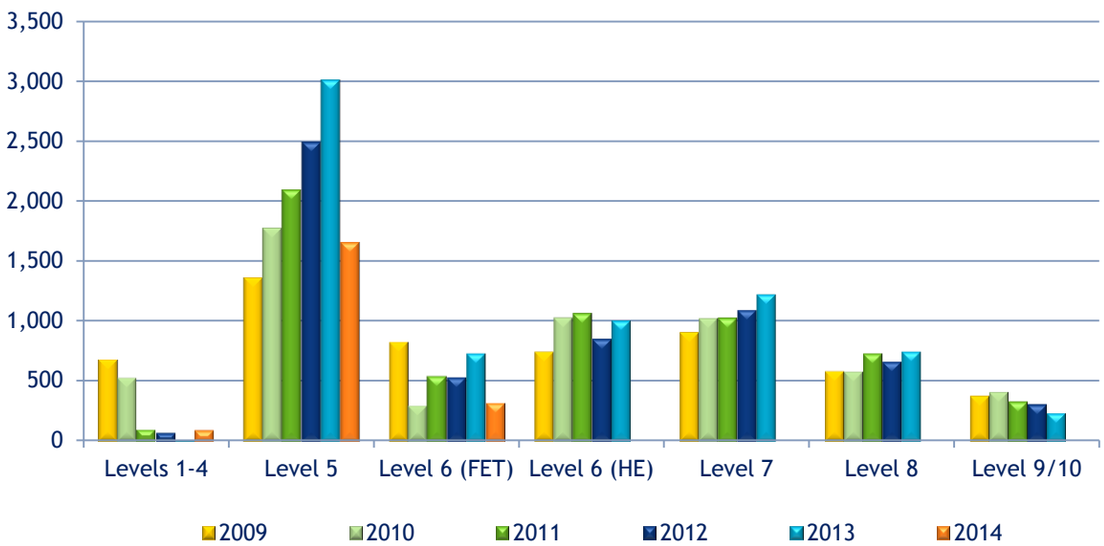
Source: SLMRU (SOLAS) analysis of CSO data

8.2.1 Awards

Figure 8.4 shows the number of awards made in services by level between 2009 and 2013. The number of FET awards for 2014 is also provided.

- There were almost 7,000 services awards in Ireland in 2013, a 28% increase (or 1,500 additional awards) when compared to 2009.
- In 2013, FET awards accounted for 54% of all services awards; higher education for 46%; most higher education awards were at level 6 and 7.
- While the number of level 5 awards more than doubled between 2009 and 2013, there was a sharp decline in 2014, with numbers declining by 1,400, falling to approximately 1,500; the numbers at levels 1-4 also fell, although the numbers involved were comparatively smaller.

Figure 8.4 Awards in services by NFQ level, 2009-2013/2014



Source: QQI (FET major awards), HEA

Table 8.2 provides a breakdown of awards by detailed field of learning and level.

- Of the 5,336 awards in 2013/2014, over a third were in the FET sector, mostly at level 5
- Higher education awards were mostly at sub-honours degree level, at NFQ 6 and 7
- Most FET awards were in either hair/beauty or travel/tourism, whereas higher education awards were mostly in catering, followed by travel/tourism and sport
- **Hotel & catering:**
  - In FET, professional cookery awards amounted to almost 300, with almost equal numbers at level 5 and 6
  - There were approximately 300 higher education awards in culinary arts, mostly at level 6; there were a further 350 awards in hotel/catering or hospitality management, mostly at level 7.

Table 8.2 Further and higher education & training services awards by detailed field & level, 2013/2014

	FET (2014)			Higher Ed (2013)					Total
	NFQ 1-4	NFQ 5	NFQ 6	NFQ 6	NFQ 7	NFQ 8	NFQ 9	NFQ 10	
Personal services, *of which*	96	1,461	283	809	946	581	58	1	4,235
Hotel, restaurant & catering	*82*	*204*	*150*	*319*	*316*	*193*	*26*	-	*1,290*
*Travel, tourism & leisure**	*14*	*438*	*108*	*28*	*244*	*212*	*30*	-	*1,074*
Sports	-	-	-	*462*	*386*	*176*	*2*	*1*	*1,027*
Hair & beauty services		*819*	*25*	-	-	-	-	-	*844*
Transport services	-	40	-	-	50	49	-	-	139
Security services	-	156	40	180	146	87	110	-	719
Envir. protection & other services	-	-	-	22	87	36	62	8	215
QQI-HE awards	-			-	22	6	-	-	28
Total Services	96	1,657	323	1,011	1,251	759	230	9	5,336

Source: QQI, HEA

*Includes sports/recreation field for FET awards

When compared to 2009

Further education and training

- Although the total number of FET awards declined in 2014, the declines at level 5 and 6 mostly occurred between 2013 and 2014, following several years of year-on-year growth
- The declines at level 5, where most awards are made each year, were mostly for sport/recreation and tourism
- The number of awards in **professional cookery (NFQ 5 & 6)** has fluctuated over the years, going from 432 in 2009 to just 15 in 2010 and 157 in 2012; for all other years the number of awards averaged 300

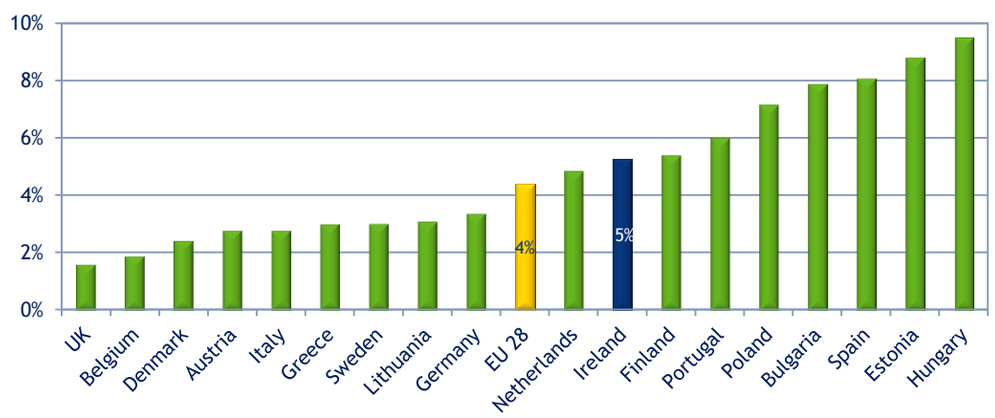
Higher education

- There has been a decline, albeit from a comparatively low base, at postgraduate level, mostly due to falls in the number of environmental protection and health/safety awards at level 9
- At undergraduate level, there was an increase in the number of **culinary arts graduates** going from over 100 to approximately 300; there were also more than 100 additional awards in hotel/catering and hospitality management.

8.2.2 EU Comparison (Figure 8.5)

Approximately 5% of Ireland's third level graduates had studied programmes in the services field (e.g. hotel/catering, sports); this compares to the EU 28 average of 4%.

Figure 8.5 Services third* level graduates as a share of total graduates in selected EU countries, 2012



Source: Eurostat

* Refers to all third level categories (equivalent in Ireland to levels 6-10)

8.3 First destination of graduates

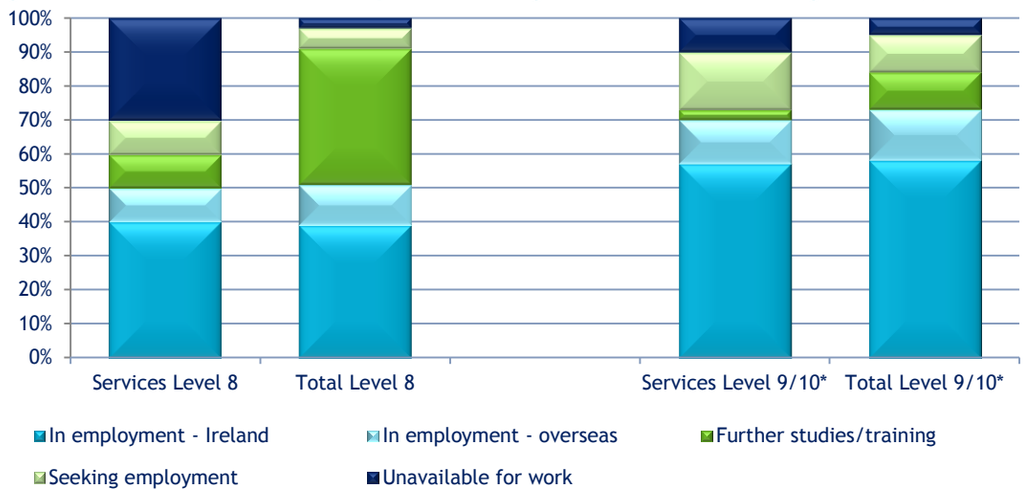
This section focuses on the economic status of those who have recently attained post-secondary or higher education qualifications. The HEA's First Destination Survey shows the destination of university graduates with honours bachelor degrees or masters/PhD awards whereas data from the CSO's QNHS examines qualification holders (both post-secondary and third level) aged 25-29 years as these are considered to be the closest proxy to recent graduates.

8.3.1 First Destination Survey

Figure 8.6 shows that, based on the HEA's report *What Do Graduates Do? The Class of 2013*,

- level 8 services graduates have a far higher share of persons unavailable for work at 30% than the overall graduate pool (at 3%) nine months after graduation and a smaller share of graduates in further studies; the share in employment was in line with the overall for this level
- services graduates at level 9/10 were broadly in line with the overall at this level in terms of employment in Ireland but had a greater share seeking employment and unavailable for work.

Figure 8.6 First destination of NFQ level 8-10 higher education services graduates, 2013



Source: HEA
*Level 9/10 includes masters and PhDs only

8.3.2 Recent qualification holders in the labour force

Table 8.3 provides a profile of 25-29 year-olds who hold post-secondary and third level qualifications based on the QNHS data.

- **Total:** in quarter 4 2014, there were almost 20,000 services graduates aged 25-29, 63% of whom were at third level; when compared to quarter 4 2009, while the number of post-secondary graduates rose slightly there was a fall in the number of third level graduates
- **% in employment:** young third level services graduates were more likely to be in employment than their post-secondary equivalents, with the gap widening since quarter 4 2009
- **% employed in related field:** those with post-secondary qualifications were far more likely to be employed in a related field than those with third level qualifications in services; while the share in related fields increased for post-secondary education holders since quarter 4 2009, it fell for third level graduates.

Table 8.3 Employment status of young services graduates (aged 25-29) by education level, quarter 4 2009 and quarter 4 2014

	Quarter 4 2009			Quarter 4 2014		
	Total	In employment		Total	In employment	
		%	% in related field		%	% in related field
Post-secondary	6,900	78%	65%	7,200	60%	80%
Third level	13,800	83%	61%	12,400	84%	51%
Total	20,700	82%	62%	19,600	75%	60%

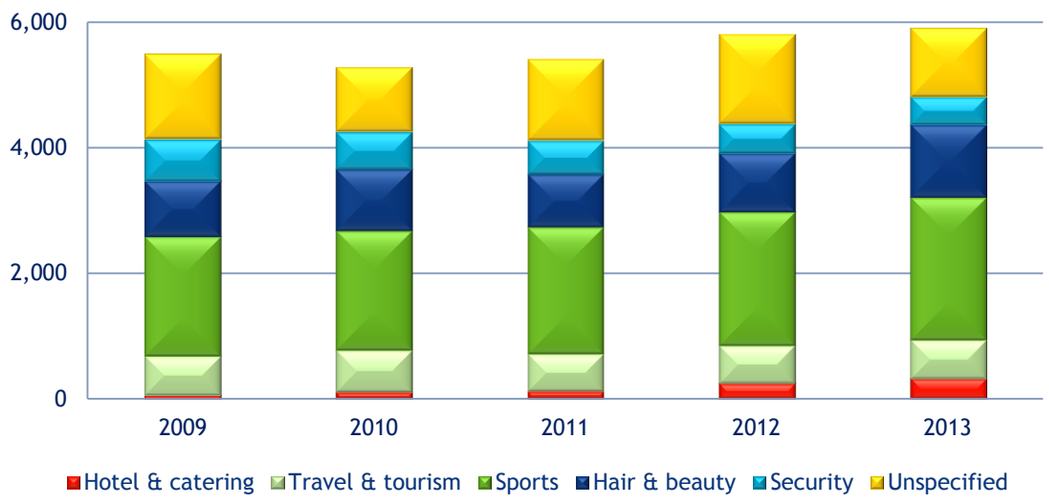
Source: SLMRU (SOLAS) analysis of CSO data

8.4 Future output of services graduates

8.4.1 PLC Enrolments

- Figure 8.7 shows that the number of learners enrolled in year one of PLC services courses reached over 5,900 in 2013; the largest number of enrolments each year was for sports related areas (e.g. sports recreation and exercise, sports development), with almost 2,300 learners in 2013
- While the largest increase observed between 2009 and 2013 was for sports related courses (which rose by 362, or 19%), the largest relative increase was for hotel and catering courses (e.g. professional cookery), where numbers rose from 66 in 2009 to 325 in 2013, amounting to almost a four-fold increase over the five-year period.

Figure 8.7 First year PLC enrolments in services by NFQ level, 2009-2013



Source: DES

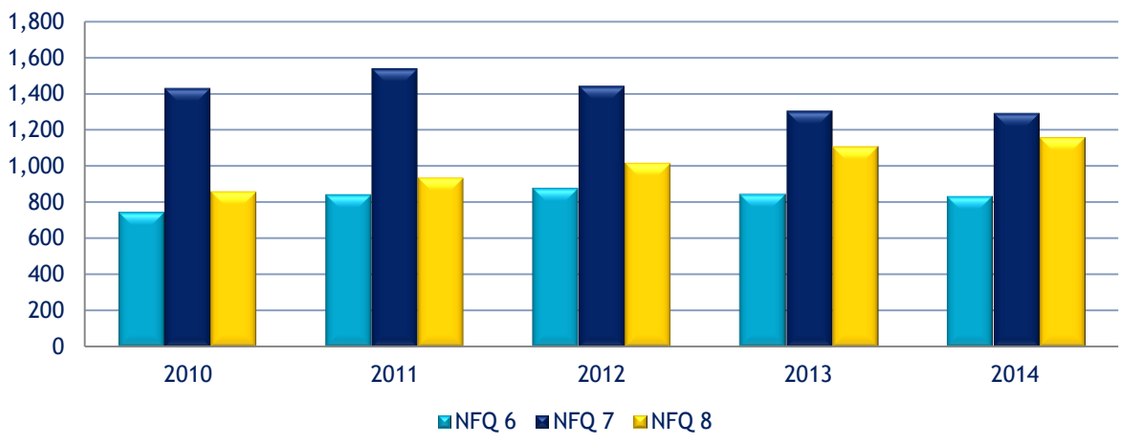
Note: the vast majority of enrolments were at level 5.

8.4.2 CAO Acceptances

The number of CAO acceptances (levels 6-8) for courses in services increased by 8% between 2010 and 2014; whereas the number of acceptances at level 7 declined (by 10%), there were gains for both level 6 (+12%) and level 8 (+35%) acceptances (Figure 8.8).

- Level 6: courses in culinary arts accounted for the largest share of acceptances at this level; small increases in hotel and catering courses account for some of the gains at this level along with the introduction of sports coaching courses since 2011
- Level 7: fluctuations at this level relate primarily to acceptances on tourism related courses which have accounted for over a half of all acceptances over the period examined
- Level 8: growth at this level is almost entirely due to an increased number of acceptances on sports-related courses since 2010 (+300).

Figure 8.8 CAO acceptances in services, 2010-2014

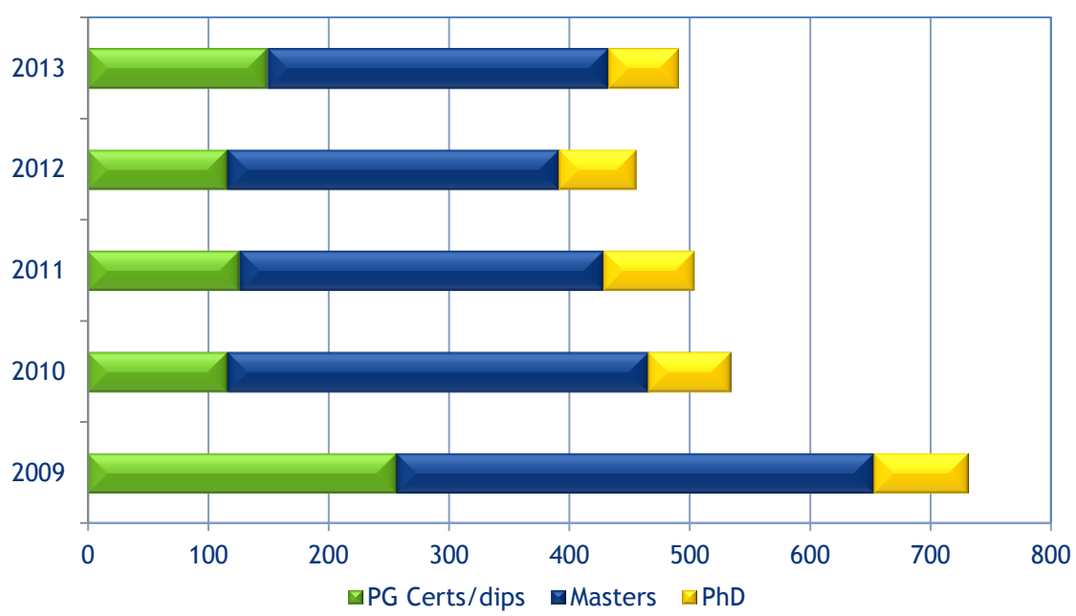


Source: CAO

8.4.3 Postgraduate enrolments in services by programme type, 2009-2013

- The number of postgraduate enrolments declined annually between 2009 and 2012 and, despite a slight increase in 2013, levels remain well below the peak in 2009
- Masters programmes accounted for the highest number of enrolments every year, with the majority in the hotel/catering, tourism and sports fields
- After education, the services field had one of the highest shares of postgraduate certs/dips, with 30% of all postgraduate enrolments in 2013 for this programme type; most of these enrolments were in security services (e.g. occupational health & safety).

Figure 8.9 Postgraduate enrolments in services by programme type, 2009-2013



Source: HEA

8.5 Labour market outlook for services occupations

The National Skills Bulletin 2015 indicates that shortages exist for a number of services occupations. Table 8.4 provides an education profile of those currently employed in these occupations. While this data does not show the skills required for these occupations, it provides an indication of the education level and field of those currently working in these occupations

Overall, those employed in services occupations which have been identified as having skills shortage had a low level of education attainment compared to other occupations identified with shortages, with 13% holding post-secondary qualifications and a further 17% at third level. Of these persons with qualifications, just over a third held qualifications in services-related areas.

Table 8.4 Education profile of services occupations with skill shortages, quarter 4 2014

Occupation	% Post-sec	% third level	% with services qualifications
Associate Professional	23%	36%	61%
Chefs and cooks			
Operatives	9%	9%	6%
Road transport operatives			
Mobile machine drivers and operatives			
Total	13%	17%	37%

Source: NSB 2015 and SLMRU analysis of CSO (QNHS) data

8.6 Services skills supply - other facts and figures

Gender	65%	Share of all QQI (FET) major awards in services subjects **made to females** in 2014; this compares to a 62% share for females across all major awards (Source: QQI).
	42%	Share of higher education graduates from services programmes in 2013 who were female; this compares to an average of 53% for higher education graduates overall (Source: HEA).
Lifelong Learning[26]	7,400	Number of 25-64 year-olds with services qualifications who had participated in **lifelong learning** activities in quarter 4 2014 (Source: SLMRU analysis of QNHS data)
	7.2%	**Lifelong learning participation rate** amongst those with services qualifications; this compares to 7.3% on average nationally (refers to 25-64 year-olds) (Source: SLMRU analysis of QNHS data)
Further Education & Training	57,000	The number of **QQI FET minor and special purpose awards** made in services in 2014; of these, almost 42,300 were at NFQ 5; almost 26,000 were in occupational first aid (Source: QQI)
	1,900	The number of QQI FET major awards made in health and welfare to **learners at ETBs** (made up of former FÁS and VEC provider centres) (Source: QQI)
Higher Education	27%	The **non-progression rate amongst higher education**[27] new entrants in 2010/11 in services; this compares to 16% across all fields of learning; the non-progression rate was lower for level 8 courses (11%) (Source: HEA)
	3	The percentage point increase in the non-progression rate for those studying services when compared to 2007/08 (Source: HEA)
	N/A	The field of learning classifications used in UK higher education statistics does not allow for the identification of fields comparable to the services field of learning; this data is included in the broader SSBL, health and science categories.

[26] Lifelong learning refers to adults aged 25-64 years who undertook formal and/or non-formal learning in the four weeks prior to the QNHS survey.
[27] Refers to full-time undergraduate new entrants NFQ levels 6-8.

8.7 Outlook

- There were 112,000 services graduates in the population (20-64 years), representing 8% of all those with post-secondary education and above. They tend to have lower skills levels than other disciplines – the share at post-secondary level was high, and those with third level qualifications were most likely to be at sub-degree level (i.e. NFQ 6/7).
- Of those post-secondary education holders who were in employment, most were employed as chefs and hairdressers; third level services graduates were also in similar occupations, as well as in protective services (i.e. Gardaí).
- Services qualification holders had a lower than average share in employment and a higher than average share of persons classified as not economically active (primarily on home duties).
- The FDS report shows that the share of level 8 graduates who were unavailable to work nine months after graduation was far higher than the average. The QNHS indicates that there was also a considerable drop in the share of young (25-29 year olds) graduates at post-secondary level who were in employment.
- Due to fluctuations at level 7 and below in both output and recent inflows, future changes in supply are difficult to predict; the typically short duration of these courses implies that supply, especially from FET, could be modified in line with anticipated labour market needs in the short term.
- The sectors that services qualification holders tend to find employment in (e.g. accommodation and food services sector) depend heavily on economic conditions; while the evidence shows that services graduates in recent years seem to have experienced some difficulties in securing employment, greater opportunities for these graduates may be expected with the economic recovery, particularly in tourism and hospitality related areas.

9. Arts/humanities

9.1 Arts/humanities graduates in the population

Figure 9.1 shows the breakdown of persons (aged 20-64) in Ireland with arts/humanities qualifications[28] by education level in quarter 4 2014.

- There were 105,000 persons aged 20-64 with qualifications in arts/humanities in quarter 4 2014, representing 7% of all those with post-secondary/third level qualifications in this age cohort; at 89%, this discipline had a higher than average (76%) share of persons with third level qualifications
- Of those with arts/humanities qualifications, 70% (73,500 persons) were employed; this is the lowest share of persons employed across all education fields
- The majority of employed post-secondary/third level arts/humanities qualification holders worked in an area **not** related to their qualification
- Of those classified as not active, 40% were involved in home duties; this discipline had a relatively low share of persons categorised as retired/unable to work due to sickness etc.
- As there were a relatively small number of persons with post-secondary qualifications in arts/humanities it was not possible to provide a breakdown by detailed education level in most cases.

Quarter 4 2009 comparison

- There was a 6% increase in the numbers in the population with arts/humanities related qualifications
- The overall numbers employed increased by 6%, with increases for persons employed in both related and unrelated fields
- The numbers unemployed fell by 12%, primarily related to a fall in the number of those with third level qualifications
- The overall numbers classified as not active increased by 16%, related primarily to an increase in the number of persons with arts/humanities qualifications classified as on home duties.

[28] Education field refers to the field of learning from the highest qualification attained and may mask a person's primary degree.

Figure 9.1 Distribution of persons (aged 20-64) in the population with arts/humanities qualifications, quarter 4 2014

Source: SLMRU analysis of CSO (QNHS) data

9.1.1 Detailed breakdown of third level graduates by employment status

Table 9.1 provides a further breakdown of third level arts/humanities graduates by detailed education level and share in employment. There were over 90,000 third level arts/humanities graduates aged 20-64 in quarter 4 2014, accounting for 9% of all third level graduates. Almost 60% had attained ordinary/honours bachelor degrees or higher diplomas. For this discipline, the higher the level of education, the higher the share in employment: 67% for persons with a higher certificate/university diploma in employment, rising to 93% for those who had attained a PhD qualification.

Table 9.1 Third level arts/humanities graduates (20-64) by detailed education level and % in employment, quarter 4 2014

	Total Q4 2014	% in employment	% of total third level grads
Higher cert/uni diploma	19,200	67%	6%
Ord/hons bachelor degree/higher dip	54,600	70%	10%
Masters/postgrad cert/dip	16,900	78%	9%
PhD	2,500	93%	14%
Total	93,300	72%	9%

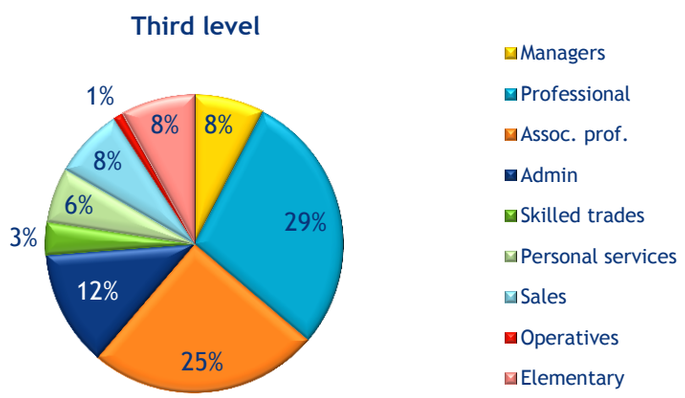
Source: SLMRU (SOLAS) analysis of CSO data

9.1.2 Employment of graduates by occupation and sector

Occupations (Figure 9.2)

- In quarter 4 2014, a third of those with third level qualifications in arts/humanities were employed in professional occupations (e.g. teaching at all levels), with a further quarter employed as associate professionals (e.g. graphic design)
- When compared to quarter 4 2009, employment increased at associate professional, caring and elementary levels.

Figure 9.2 Arts/humanities graduates (aged 20-64) by education level* & occupation, quarter 4 2014



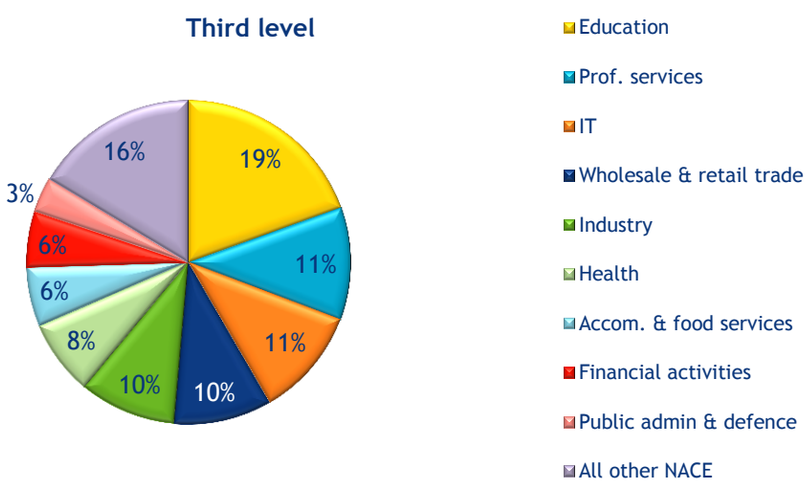
Source: SLMRU (SOLAS) analysis of CSO data

*Post-secondary graduates are excluded as the numbers are too small to report

Sectors (Figure 9.3)

- In quarter 4 2014, a fifth of third level arts/humanities graduates were employed in education, with a further 11% employed in professional services and the IT sector respectively
- When compared to quarter 4 2009, the largest gains in the numbers employed were in the IT sector and in professional activities.

Figure 9.3 Arts/humanities graduates (aged 20-64) by education level* & sector, quarter 4 2014



Source: SLMRU (SOLAS) analysis of CSO data

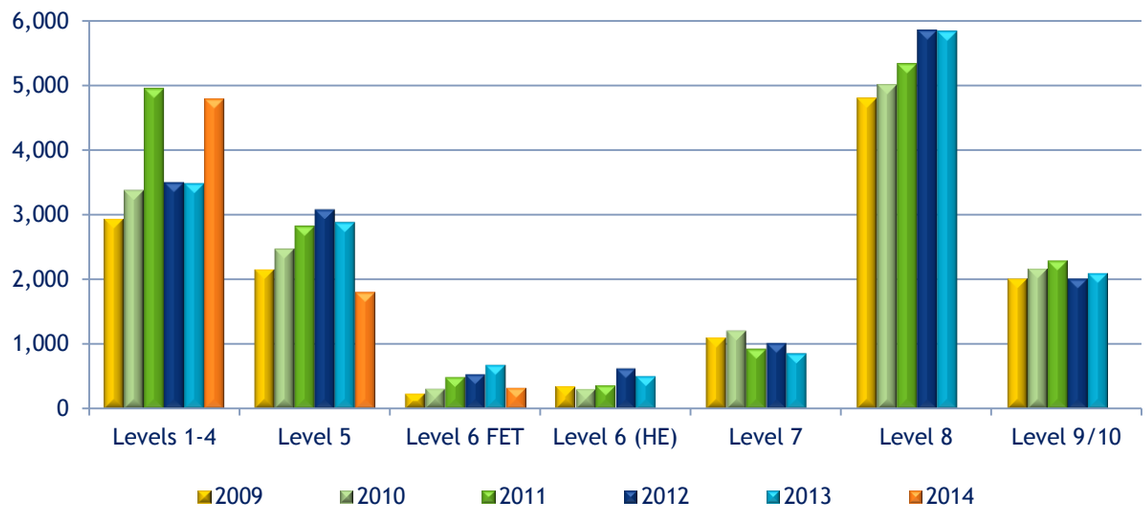
*Post-secondary graduates are excluded as the numbers are too small to report

9.2.1 Awards

Figure 9.4 shows the number of awards made in arts/humanities by level between 2009 and 2013. Also provided is the number of FET awards made in 2014. For the purposes of this analysis, general learning is included in arts/humanities.

- There were almost 16,500 awards in arts/humanities (including general learning) in Ireland in 2013, a 20% rise (or approximately 2,800 additional awards) when compared to 2009, but a 1% decrease (250 fewer awards when compared to 2012)
- In higher education, arts/humanities awards are concentrated at level 8; in FET, levels 4 and 5 had the highest numbers
- Not included in the graph are an additional 273 awards made to learners at private and independent colleges outside the HEA-aided sector in 2014.

Figure 9.4 Awards in arts/humanities* by NFQ level, 2009-2013/2014



Source: QQI (FE major awards), HEA

*Includes general learning

Table 9.2 provides a breakdown of awards by detailed field of learning and level.

- Of the 16,500 arts/humanities awards in 2013/2014, almost a third were for combined arts/humanities programmes (including general learning)
- The remainder were almost evenly divided between arts (almost 5,800 awards) and humanities (almost 5,500 awards) and were predominantly in higher education at level 8 and above
- Most FET awards were made in the area of general learning (NFQ 3-4), with art craft and design related awards dominating at level 5
- At over 1,000 awards, English alone accounted for 6% of all arts/humanities award holders
- Foreign language graduates were in the higher education sector only, mostly at level 8; it should be noted, however, that this data does not include awards made to learners who take a foreign language as part of another programme (e.g. BComm international).

Table 9.2 Further & higher education/training arts/humanities awards by detailed field & level, 2013/2014

	FET (2014)			Higher Education (2014)					Total
	NFQ 1-4	NFQ 5	NFQ 6	NFQ 6	NFQ 7	NFQ 8	NFQ 9	NFQ 10	
Combined arts/humanities*	3,365	0	0	2	5	1,340	57	46	5,050
Arts, of which	0	1,807	330	215	541	2,075	710	83	5,761
Audio-visual/media production	*0*	*496*	*84*	*36*	*211*	*438*	*171*	*4*	*1,440*
Fine arts	*0*	*403*	*164*	*11*	*177*	*391*	*128*	*13*	*1,287*
Humanities, of which	1,435	0	0	124	316	2,434	1,010	133	5,452
Mother tongue (English)	-	-	-	*60*	*206*	*488*	*268*	*29*	*1051*
Foreign languages	-	-	-	*16*	*67*	*309*	*164*	*25*	*581*
History/archaeology	-	-	-	*37*	*22*	*488*	*268*	*29*	*844*
QQI-HE (Arts/Humanities)	0	0	0	12	110	146	5		273
Total	4,800	1,807	330	523	972	5,995	1,847	262	16,536

Source: QQI, HEA
* Includes general learning awards

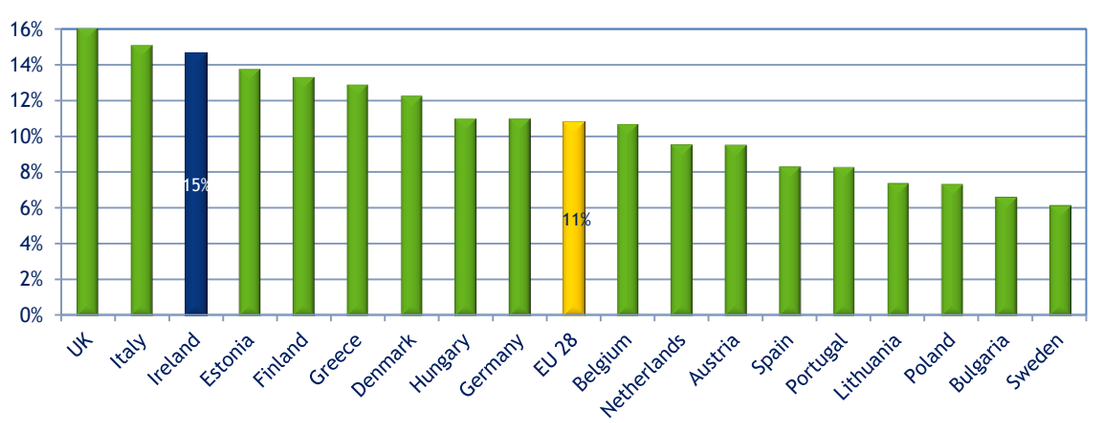
Comparison with 2009

- FET award numbers increased overall, although this masks fluctuations at levels 1-4 (mostly for general learning) and a sharp decline at level 5 and 6 between 2013 and 2014; the declines at levels 5 and 6 were mostly for art, media production and general studies
- The number of awards in higher education increased, particularly at level 8; numbers at postgraduate levels have either declined or remained broadly similar between 2012 and 2013.

9.2.2 EU Comparison (Figure 9.5)

Approximately 15% of Ireland's third level graduates had studied arts/humanities; this compares to the EU 28 average of 11%, and is one of the highest shares observed, after the UK and Italy.

Figure 9.5 Arts & humanities third* level graduates as a share of total graduates in selected EU countries, 2012



Source: Eurostat
* Refers to all third level categories (equivalent in Ireland to levels 6-10)

9.3 First destination of graduates

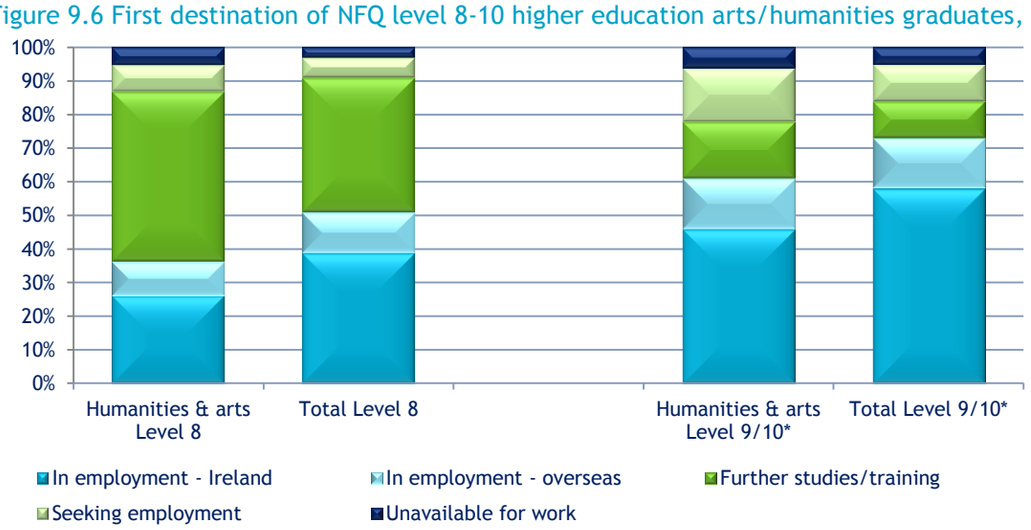
This section focuses on the economic status of those who have recently attained post-secondary or higher education qualifications. The HEA's First Destination Survey shows the destination of university graduates with honours bachelor degrees or masters/PhD awards whereas data from the CSO's QNHS examines qualification holders (both post-secondary and third level) aged 25-29 years as these are considered to be the closest proxy to recent graduates.

9.3.1 First Destination Survey

Figure 9.6 shows that, based on the HEA's report *What Do Graduates Do? The Class of 2013*,

- level 8 arts/humanities graduates have a higher share of persons in further studies than the overall graduate pool nine months after graduation and a smaller share of graduates in employment either in Ireland or overseas
- arts/humanities graduates at level 9/10 were far less likely than the total graduate pool at this level to be in employment in Ireland (46% compared to 58%) with higher shares in further studies or seeking employment.

Figure 9.6 First destination of NFQ level 8-10 higher education arts/humanities graduates, 2013



Source: HEA

*Level 9/10 includes masters and PhDs only

9.3.2 Recent qualification holders in the labour force

Table 9.3 provides a profile of 25-29 year-olds who hold third level qualifications based on the QNHS data.

- **Total:** in quarter 4 2014 there were 10,700 young third level graduates in arts/humanities, a slight decline on quarter 4 2009
- **% in employment:** three quarters of these young graduates were in employment, although very few were employed in a related field; this held across both time periods examined.

Table 9.3 Employment status of young third level arts/humanities graduates (aged 25-29), quarter 4 2009 and quarter 4 2014

	Quarter 4 2009	Quarter 4 2014
Total	11,400	10,700
% in employment	75%	77%
% employed in related field	15%	13%

Source: SLMRU (SOLAS) analysis of CSO data

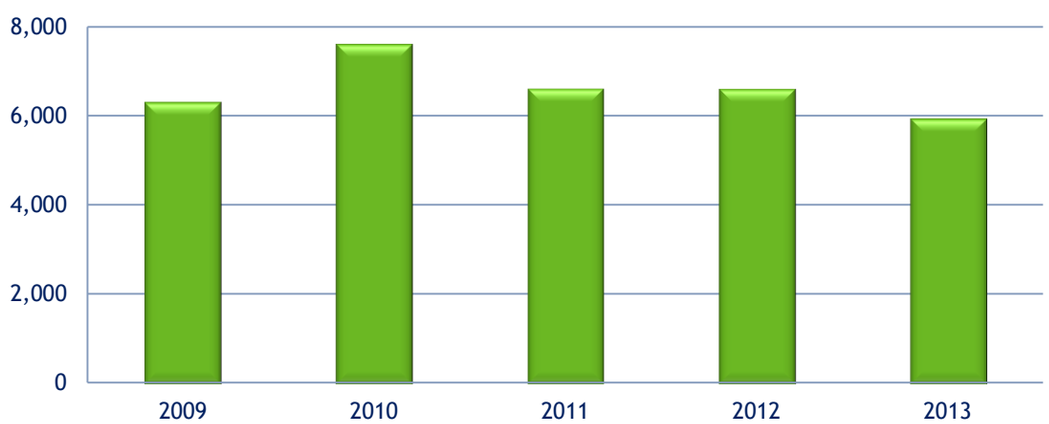
* Post-secondary graduates excluded as numbers too small to report

9.4 Future output of arts/humanities graduates

9.4.1 PLC Enrolments

- In 2013, there were almost 6,000 learners enrolled in year one of arts/humanities PLC courses; of these, almost 2,800 were on art, craft and/or design courses (e.g. art, furniture design & making, etc.); a further 2,200 were on audio-visual/media production related courses (e.g. media engineering, TV and film production)
- As detailed in Figure 9.7, the number of learners enrolled in arts/humanities PLC courses has declined since 2010, and in 2013 was lower than at any point during the five-year period 2009-2013.

Figure 9.7 First year PLC enrolments in arts/humanities by NFQ level, 2009-2013



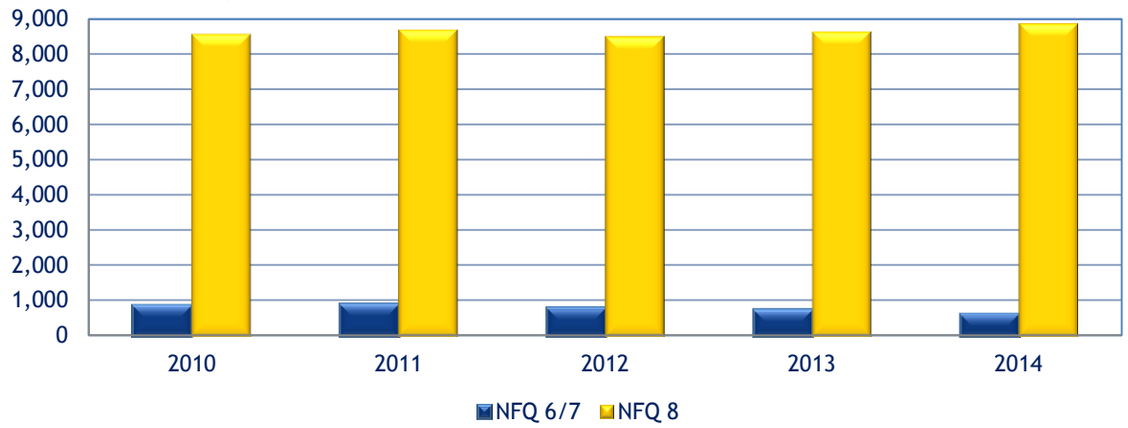
Source: DES

9.4.2 CAO Acceptances

As shown in Figure 9.8, the number of CAO acceptances (levels 6-8) for courses in arts/humanities increased by 1% between 2010 and 2014; while level 8 acceptances increased by 3%, there were declines at levels 6/7 (-28%).

- Level 6/7 acceptances account for a small share of overall acceptances and have been declining in recent years; courses at these levels were primarily in the areas audio-visual techniques
- At level 8, the number of acceptances increased, particularly since 2013; acceptances are primarily for general arts programmes.

Figure 9.8 CAO acceptances in arts/humanities, 2010-2014

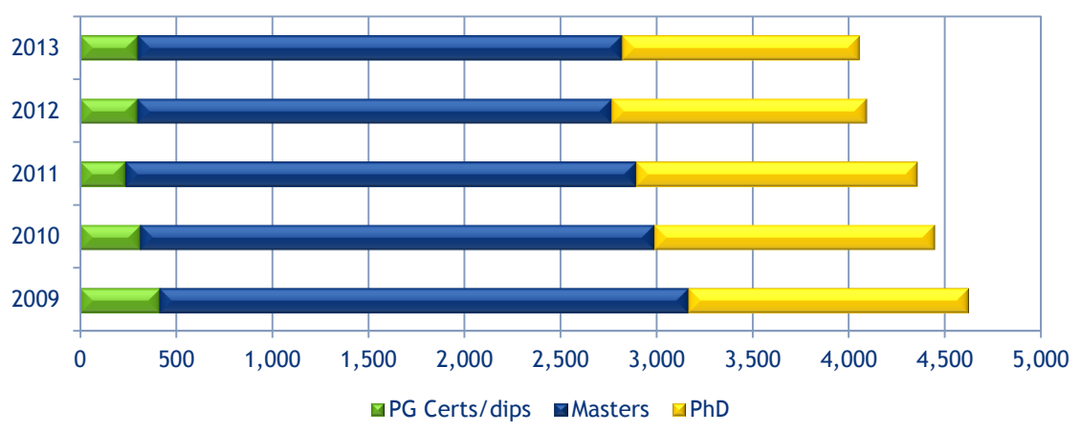


Source: CAO

9.4.3 Postgraduate enrolments in arts/humanities by programme type, 2009-2013

As detailed in Figure 9.9, the number of arts/humanities enrolments declined annually between 2009 and 2013, with approximately 600 fewer enrolments in 2013 when compared to 2009. There has been a slight shift towards an increased share of masters enrolments, and a decreased share for other programme types.

Figure 9.9 Postgraduate enrolments in arts/humanities by programme type, 2009-2013



Source: HEA

9.5 Labour market outlook for arts/humanities occupations

The National Skills Bulletin 2015 did not identify any occupations in the areas of arts/humanities which had skills shortages.

9.6 Arts/humanities skills supply - other facts and figures

Gender	52%	Share of all QQI (FET) major awards in arts/humanities subjects **made to females** in 2014; this compares to a 62% share for females across all major awards (Source: QQI)
	60%	Share of higher education graduates from arts/humanities programmes in 2013 who were female; this compares to an average of 53% for higher education graduates overall (Source: HEA).
Lifelong Learning[29]	10,400	Number of 25-64 year-olds with arts/humanities qualifications who had participated in **lifelong learning** activities in quarter 4 2014 (Source: SLMRU analysis of QNHS data)
	10.9%	**Lifelong learning participation rate** amongst those with arts/humanities qualifications; this compares to 7.3% on average nationally (refers to 25-64 year-olds) (Source: SLMRU analysis of QNHS data)
Further Education & Training	12,000	The number of **QQI FET minor and special purpose awards** made in arts/ and humanities s in 2014; of these, almost 4,800 were at NFQ 5; almost 4,700 were in art, craft & design with a further 2,600 in media production. (Source: QQI)
	3,400	The number of QQI FET major awards made in arts/humanities to **learners at ETBs** (made up of former FÁS and VEC provider centres) (Source: QQI)
Higher Education	15%	The **non-progression rate amongst higher education**[30] new entrants in 2010/11 in SSBL and arts/humanities; this compares to 16% across all fields of learning; the non-progression rate was lower for level 8 courses (11%) (Source: HEA)
	1	The percentage point increase in the non-progression rate for those studying SSBL and arts/humanities when compared to 2007/08 (Source: HEA)
	595	The number of graduates who were domiciled in Ireland but obtained awards in arts/humanities and combined studies from **UK higher education** institutions; this is a decline on 675 in 2013 (Source: HESA)

[29] Lifelong learning refers to adults aged 25-64 years who undertook formal and/or non-formal learning in the four weeks prior to the QNHS survey.
[30] Refers to full-time undergraduate new entrants NFQ levels 6-8.

9.7 Outlook

- There were 105,000 arts/humanities graduates in the population (20-64 years), representing 7% of all those with post-secondary education and above; most were at third level.
- Arts/humanities third level graduates tended to be employed in areas not specifically related to their qualifications; while many were employed in high skilled areas (e.g. teaching, graphic design), there was also a high share who were in lower skilled areas such as general administration and sales assistants (especially for the younger age cohorts).
- Although arts and humanities accounts for a high share of graduate output (particularly at third level) every year, many of them, according to the FDS report, continue on to further studies and therefore qualify in other areas (e.g. business, education).
- Take-up levels onto FET/third level courses have not changed significantly in recent years so a considerable change in output is not expected in the short to medium term.
- There is a high number of people who study arts/humanities (particularly at third level); however, they tend to continue on to further study and tend not to be employed in arts/humanities related areas; as such, their skills may be more flexible in meeting labour market needs but they may also be susceptible to having to accept lower skilled employment as many arts/humanities courses do not have a vocational element.

10. Education

10.1 Education graduates in the population

Figure 10.1 shows the breakdown of persons (aged 20-64) in Ireland with education qualifications[31] by education level in quarter 4 2014.

- There were 93,000 persons aged 20-64 with qualifications in education, representing 7% of all those with post-secondary/third level qualifications in this age cohort; at 93%, this discipline had the highest share of persons with third level qualifications (compared to 76% overall)
- Of those with education qualifications, 80% (74,000 persons) were employed; this is above the average (78%) across all fields of learning
- The majority of employed post-secondary/third level qualification holders worked in an area related to their qualification
- Those retired/unable to work accounted for a half of all education graduates who were classified as not economically active; indeed, at 7%, this discipline had the highest share of persons classified as retired
- It was not possible to provide a breakdown by detailed education level as the number of persons with post-secondary qualifications in education was too small to report.

Quarter 4 2009 comparison

- There was an 11% increase in the numbers in the population with education related qualifications
- The overall numbers employed increased by 8%; while the numbers employed in related fields increased only marginally (by 3%), the number of those employed in other fields increased by 22%
- The numbers unemployed fell with marginal declines for both post-secondary/third level graduates; however, the rate of unemployment was already quite low for this discipline
- The overall numbers classified as not active increased by 39%; this relates primarily to an increase in the number of retired persons with education qualifications (+3,400).

[31] Education field refers to the field of learning from the highest qualification attained and may mask a person's primary degree.

Figure 10.1 Distribution of persons (aged 20-64) in the population with education qualifications, quarter 4 2014

Source: SLMRU analysis of CSO (QNHS) data

10.1.1 Detailed breakdown of third level graduates by employment status

Table 10.1 provides a further breakdown of third level education graduates by detailed education level and share in employment. Overall, third level education graduates account for 8% of all graduates at this level. The higher the level of education, the higher the share in employment with 89% of all graduates who held a masters, postgraduate certificate/diploma or a PhD in employment.

Table 10.1 Third level education graduates (20-64) by detailed education level and % in employment, quarter 4 2014

	Total Q4 2014	% in employment	% of total third level grads
Higher cert/uni diploma	11,100	73%	3%
Ord/hons bachelor degree/higher dip	50,200	79%	9%
Masters/postgrad cert/dip & PhD	25,600	89%	12%
Total	86,900	81%	8%

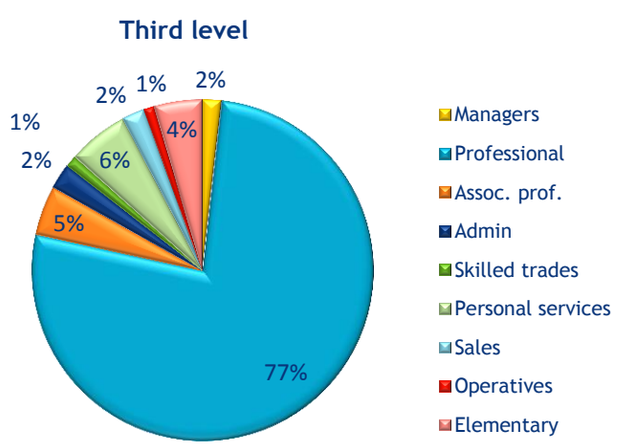
Source: SLMRU (SOLAS) analysis of CSO data

10.1.2 Employment of graduates by occupation and sector

Occupations (Figure 10.2)

- In quarter 4 2014, over three quarters of education graduates at third level were employed in professional roles (mostly as primary and secondary school teachers)
- When compared to quarter 4 2009, the 9% increase in employment for this cohort, which is related primarily to an increase in the number of professionals employed.

Figure 10.2 Education graduates (aged 20-64) by education level & occupation, quarter 4 2014



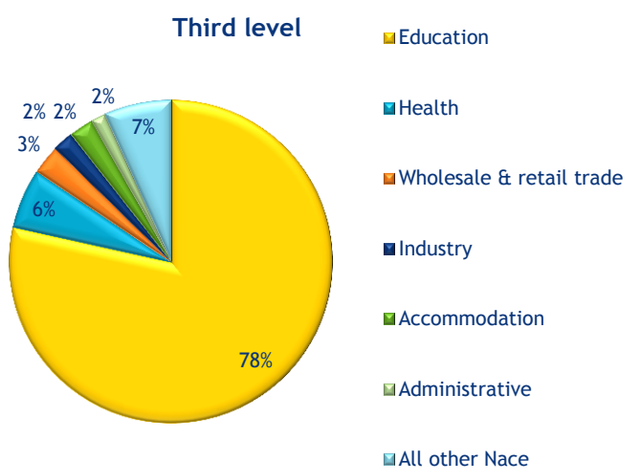
Source: SLMRU (SOLAS) analysis of CSO data

* Post-secondary graduates are excluded as the numbers are too small to report

Sectors (Figure 10.3)

- In quarter 4 2014, over two thirds of third level graduates in this cohort were employed in the education sector; this sector also accounts for the majority of the employment growth in this cohort since quarter 4 2009.

Figure 10.3 Education graduates (aged 20-64) by education level & sector, quarter 4 2014



Source: SLMRU (SOLAS) analysis of CSO data

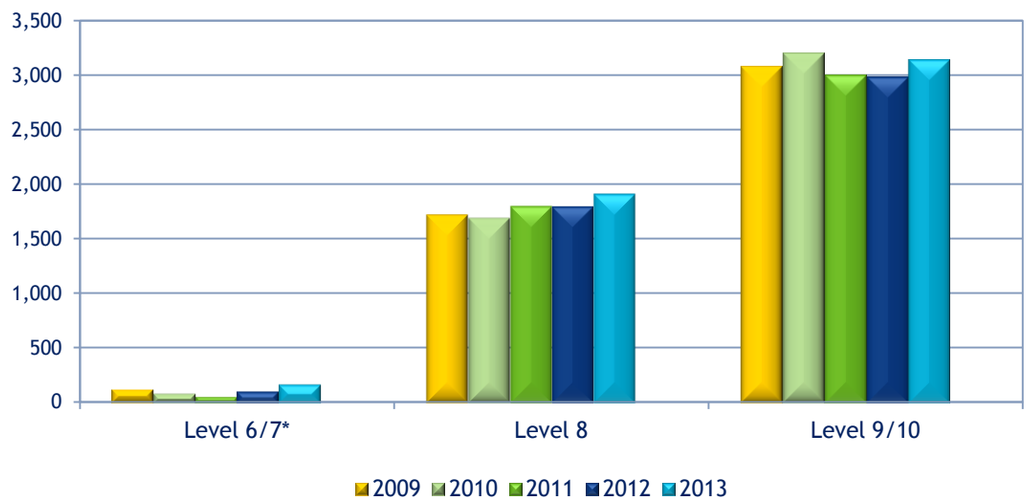
* Post-secondary graduates are excluded as the numbers are too small to report

10.2.1 Awards

Figure 10.4 shows the number of awards made in education by level between 2009 and 2013. Almost all education awards were made at higher level (as QQI awards data relating to childhood care and education are classified in health and welfare).

- There were over 5,200 awards in education in Ireland in 2013, an increase of 6% and 7% when compared to 2009 and 2012 respectively; in absolute terms, the growth amounts to an additional 300 awards in 2013 compared to 2009.
- The highest number of awards was for postgraduate courses which reached over 3,100 awards in 2013 (of these, 2,200 were for postgraduate diplomas)
- Not included in the graph are **an additional 982 awards** made to learners at private and independent colleges outside the HEA-aided sector in 2014, the vast majority of which were at level 8 or above.

Figure 10.4 Awards in education by NFQ level, 2009-2013



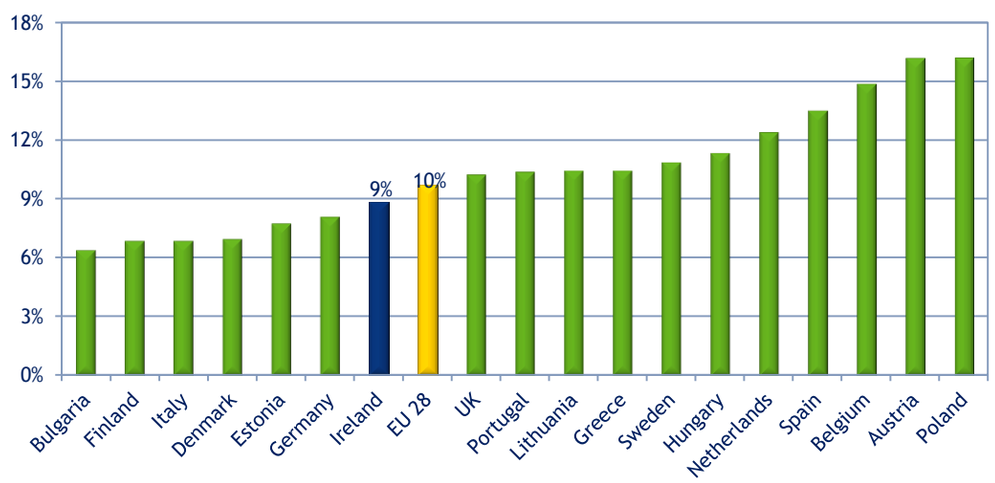
Source: HEA

* Includes 31 major awards from the FET sector at level 6.

10.2.2 EU Comparison (Figure 10.5)

Approximately 9% of Ireland's third level graduates had studied programmes in education, which is just below the EU average of 10%, although well below the rates of 15% and above observed in Belgium, Austria and Poland.

Figure 10.5 Third* level graduates in education as a share of total graduates in selected EU countries, 2012



Source: Eurostat

*refers to all third level categories (equivalent in Ireland to levels 6-10)

10.3 First destination of graduates

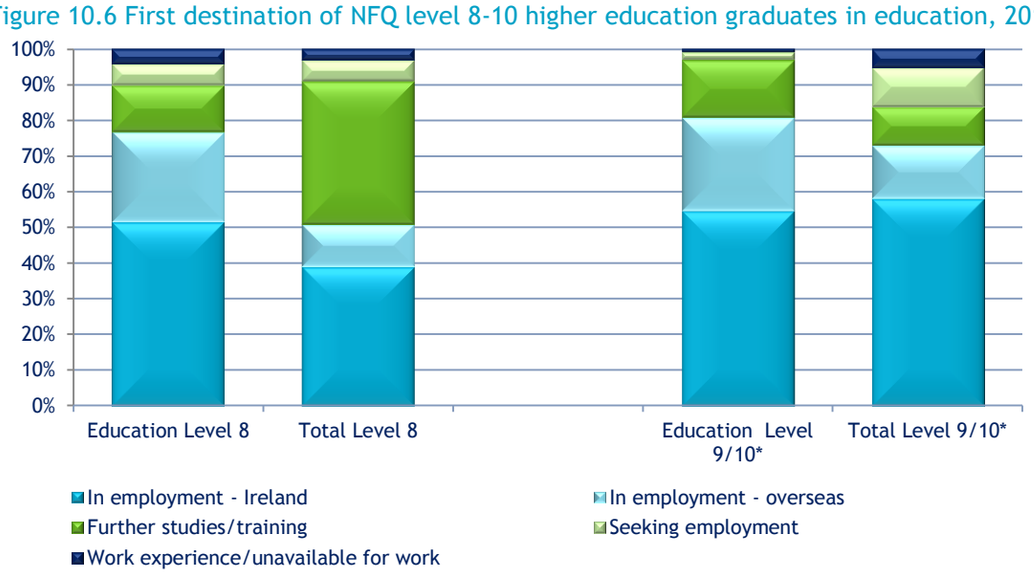
This section focuses on the economic status of those who have recently attained post-secondary or higher education qualifications. The HEA's First Destination Survey shows the destination of university graduates with honours bachelor degrees or masters/PhD awards, whereas data from the CSO's QNHS examines qualification holders (both post-secondary and third level) aged 25-29 years as these are considered to be the closest proxy to recent graduates.

10.3.1 First Destination Survey

Figure 10.6 shows that, based on the HEA's report *What Do Graduates Do? The Class of 2013*,

- Level 8 education graduates have a higher share of persons employed both in Ireland and overseas when compared to the overall (76% compared to 51% overall); indeed, level 8 education graduates had the highest share in employment overseas; as a result, the share who continued on to further education/training was lower than the overall
- In contrast, level 9/10 education graduates had a higher share who continued to further education than the overall for this cohort (16% compared to 11%) with a low share seeking employment or unavailable to work; at 26%, level 9/10 education graduates also had the highest share of graduates who were employed overseas.

Figure 10.6 First destination of NFQ level 8-10 higher education graduates in education, 2013



Source: HEA

* Level 9/10 includes masters and PhDs only

10.3.2 Recent qualification holders in the labour force

Table 10.2 provides a profile of 25-29 year-olds who hold third level qualifications based on the QNHS data.

- **Total:** in quarter 4 2014, there were 11,800 25-29 year olds with third level qualifications in education, representing a small decline on the levels in quarter 4 2009
- **% in employment:** at 91%, young education graduates had the highest share in employment when compared to all other 25-29 year old third level graduates; the share and trend held over both time periods
- **% employed in a related field:** in quarter 4 2014, 84% of young graduates were employed in a related field, the highest share across all graduates in this cohort; this represents an eleven percentage point gain when compared to quarter 4 2009.

Table 10.2 Employment status of young third level education graduates (aged 25-29), quarter 4 2009 and quarter 4 2014

	Quarter 4 2009	Quarter 4 2014
Total	12,300	11,800
% in employment	91%	91%
% employed in related field	73%	84%

Source: SLMRU (SOLAS) analysis of CSO data

Note: post-secondary graduates excluded as numbers too small to report

10.4 Future output of education graduates

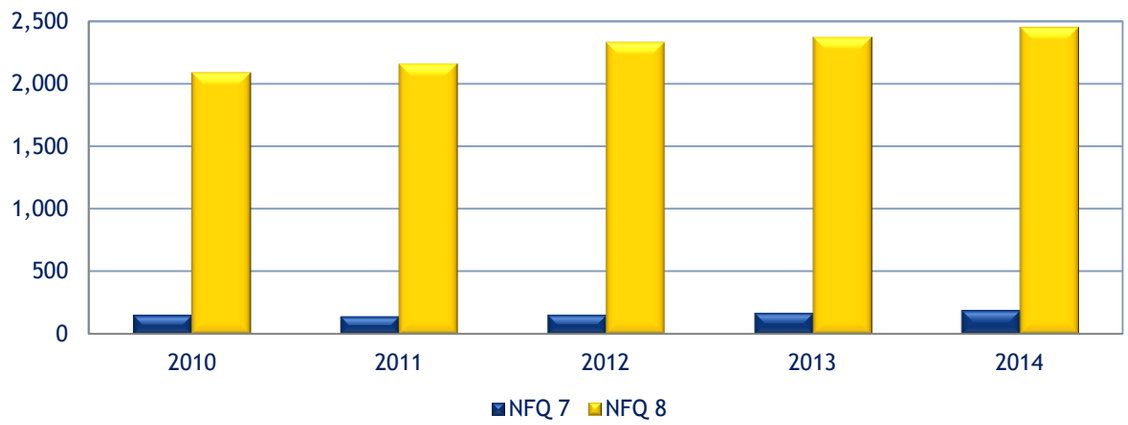
10.4.1 PLC Enrolments

- There were approximately 2,800 learners enrolled on year one of education related PLC courses; the vast majority of these enrolments were for courses in early childhood care and education (Note: awards data for most of these courses is classified in health/welfare)
- The number of year one enrolments grew significantly in 2012, going from fewer than 25 in the preceding years to almost 2,800 in 2012 and 2013.
  - This increase is related to the introduction in 2012 of an *early childhood care and education* course which occurred at the same time as the cessation of the *community and health services - childcare* course
  - When this shift is accounted for, the number of childcare related enrolments has actually declined slightly, going from approximately 2,900 to almost 2,800 between 2009 and 2013.

10.4.2 CAO Acceptances

The number of CAO acceptances (levels 7-8) for courses in education is detailed in Figure 10.7; level 6 acceptances were excluded as the numbers involved were small. At level 8, acceptances increased by 17% between 2010 and 2014; this increase was particularly related to an increase in acceptances on courses relating to early childhood education and primary school teaching.

Figure 10.7 CAO acceptances in education, 2010-2014

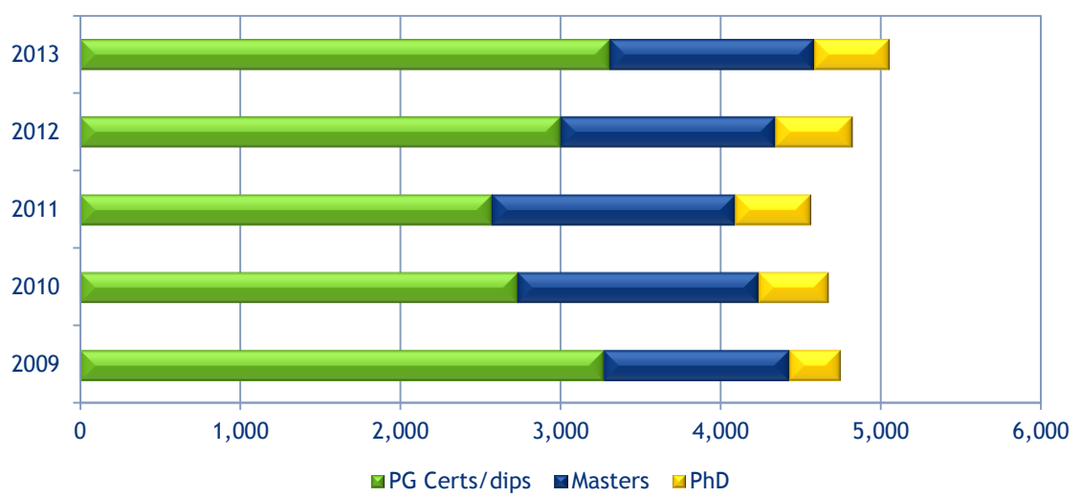


Source: CAO

10.4.3 Postgraduate enrolments in education by programme type, 2009-2013

- As detailed in Figure 10.8, postgraduate certs/diplomas accounted for the majority of enrolments in the education field, making up two thirds of the total in 2013; education is the only field where the majority of postgraduate enrolments were for postgraduate certs/diplomas
- When compared to 2009, the numbers enrolled on postgraduate programmes were 6% higher in 2013, with most of the growth, in absolute terms, for PhD programmes, with almost 150 additional enrolments.

Figure 10.8 Postgraduate enrolments in education by programme type, 2009-2013



Source: HEA

10.5 Labour market outlook for education occupations

The National Skills Bulletin 2015 did not identify any education occupations which had skills shortages.

10.6 Education skills supply - other facts and figures

Gender	77%	Share of all QQI (FET) major awards in education subjects **made to females** in 2014; this holds across all levels 4-6, but males dominated at level 3, receiving 54% of all major awards in this field (Source: QQI)
	71%	Share of higher education graduates from education programmes in 2013 who were female; education had the highest share of female graduates and compares to an average of 53% for higher education graduates overall (Source: HEA)
Lifelong Learning[32]	8,900	Number of 25-64 year-olds with education qualifications who had participated in **lifelong learning** activities in quarter 4 2014 (Source: SLMRU analysis of QNHS data)
	10.1%	**Lifelong learning participation rate** amongst those with education qualifications; this compares to 7.3% on average nationally (refers to 25-64 year-olds) (Source: SLMRU analysis of QNHS data)
Further Education & Training	7,000	The number of **QQI FET minor and special purpose awards** made in education in 2014; of these, 96% were at NFQ 6; over 4,000 were for train the trainer awards (Source: QQI)
	<30	The number of QQI FET major awards made in education to **learners at ETBs** (made up of former FÁS and VEC provider centres) (Source: QQI)
Higher Education	5%	The **non-progression rate amongst higher education**[33] new entrants in 2010/11 in education; this compares to 16% across all fields of learning; the non-progression rate was even lower for level 8 courses (3%) (Source: HEA)
	0	The percentage point change in the non-progression rate for those studying education when compared to 2007/08 (Source: HEA)
	570	The number of graduates who were domiciled in Ireland but obtained awards in education from **UK higher education** institutions; this is a decline on 645 in 2013 (Source: HESA)

[32] Lifelong learning refers to adults aged 25-64 years who undertook formal and/or non-formal learning in the four weeks prior to the QNHS survey.
[33] Refers to full-time undergraduate new entrants NFQ levels 6-8.

10.7 Outlook

- There were 93,000 education graduates (aged 20-64 years), almost all of whom had studied to third level; the majority worked in a field related to their qualification and only a small share were unemployed; over three quarters of those employed were in professional occupations.
- According to the FDS report, a very high share of recent graduates had gained employment overseas (compared to all graduates surveyed) suggesting either a lack of opportunities for newly qualified teachers in Ireland and/or a strong demand for their skills abroad.
- There has been a steady supply of education graduates in recent years and the increase in the number of CAO acceptances at level 8 suggests that this will continue and possibly grow in the medium term; these numbers may be further augmented by supply from the private third level education sector, which accounts for approximately one third of level 8 output.
- While employment rates are high for persons in Ireland with qualifications in education, areas of concern in terms of outcomes for graduates would be the high number of those in the younger age cohorts gaining employment overseas, the relatively high number of those under 65 who have retired in the last five years and the high level of transitions in and out of the labour market that has been identified in the National Skills Bulletin.
- As the majority of education award holders are employed in education related occupations, employment opportunities depend very much on government policy and funding; demand for education professionals is also affected by the size of the school going age population; these factors will impact on the demand for teachers in the coming years.

11. Agriculture and vet

11.1 Agriculture graduates in the population

Figure 11.1 shows the breakdown of persons (aged 20-64) in Ireland with agriculture[34] qualifications by education level. In quarter 4 2014,

- There were 48,000 persons aged 20-64 with agriculture related qualifications, divided almost equally between those with post-secondary education (51%) and third level education (49%)
- Of those with agriculture qualifications, 86% (41,000 persons) were employed; this is above the average (78%) across all fields of learning
- Of those employed, 60% worked in agriculture related fields
- Those with post-secondary qualifications were more likely to be working in agriculture related fields than their third level equivalents.

Quarter 4 2009 comparison

- The numbers with agriculture related qualifications increased by 15% (or 9,500), primarily related to employed post-secondary qualification holders.

Figure 11.1 Distribution of persons (aged 20-64) in the population with agriculture qualifications, Q4 2014

Source: SLMRU analysis of CSO (QNHS) data

* Numbers too small to report

[34] Education field refers to the field of learning from the highest qualification attained and may mask a person's primary degree.

11.1.1 Detailed breakdown of third level graduates by employment status

Table 11.1 provides a further breakdown of third level agriculture graduates by detailed education level and share in employment. There were 23,100 third level agriculture graduates aged 20-64 in quarter 4 2014, accounting for 2% of all third level graduates. Most third level graduates had attained an honours bachelor degree or below with very few at masters level or higher. Graduates with higher certs/university diplomas in this discipline had a higher share in employment (at 86%) compared to all higher certs/university diplomas holders (at 77%).

Table 11.1 Agriculture graduates (20-64) by detailed education level and % in employment, Q4 2014

Programme type	Total Q4 2014	% in employment	% of total third level grads
Higher cert/uni diploma	10,600	86%	3%
Ord/hons bachelor degree/higher dip	11,000	80%	2%
Masters/postgrad cert/dip & PhD	1,600	88%	1%
Total	23,100	84%	2%

Source: SLMRU (SOLAS) analysis of CSO data

11.1.2 Employment of graduates by occupation and sector

Occupations

- Post-secondary: almost three quarters of those employed with agriculture qualifications at this level in quarter 4 2014 were working as farmers, with an increase of almost 4,000 for this occupation since quarter 4 2009
- Third level: in contrast, while farmers still account for a significant share (17%) of award holders at this level, there is a wider spread across occupations than at post-secondary level, with a further 17% in professional occupations and 11% in associate professional roles; the small increases in employment at this level since quarter 4 2009 can be attributed primarily to agriculture related trades.

Sectors

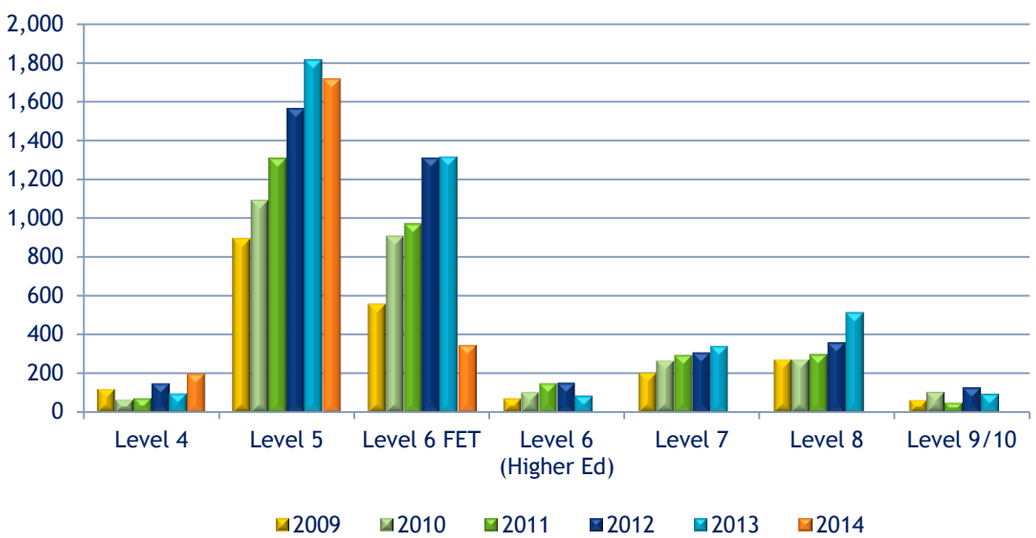
- Post-secondary: of those with agriculture qualifications at this level, 70% were employed in the agriculture sector; this sector also accounted for all of the increase in employment since quarter 4 2009
- Third level: at this level, those with agriculture qualifications were employed across a wide spread of sectors including agriculture (30%), wholesale and retail (13%), healthcare (10%) and professional activities (9%); there were only modest gains in employment at third level, primarily in the agriculture sector.

11.2.1 Awards (Agriculture/vet)

Figure 11.2 shows the number of awards made in agriculture and veterinary by level between 2009 and 2013. The number of FET awards made in 2014 are also included.

- There were almost 4,300 awards in agriculture and vet in Ireland in 2013, almost double the number made in 2009
- In 2013, more than three quarters of all awards in this field were in the FET sector; level 5 had the highest number of awards at over 1,800
- In 2014, following several years of annual growth, the number of FET awards at level 6 declined significantly, due mainly to fewer agriculture awards (which declined from 1,024 to 214 year-on-year).

Figure 11.2 Awards in agriculture and veterinary, by NFQ level, 2009-2013/2014



Source: QQI (FET), HEA

11.2.2 EU Comparison (Figure 11.5)

On average, 1.6% of all third level graduates in the EU in 2012 had studied agriculture/vet programmes; Ireland's share was slightly smaller at 1.3%.

11.3 First destination of graduates

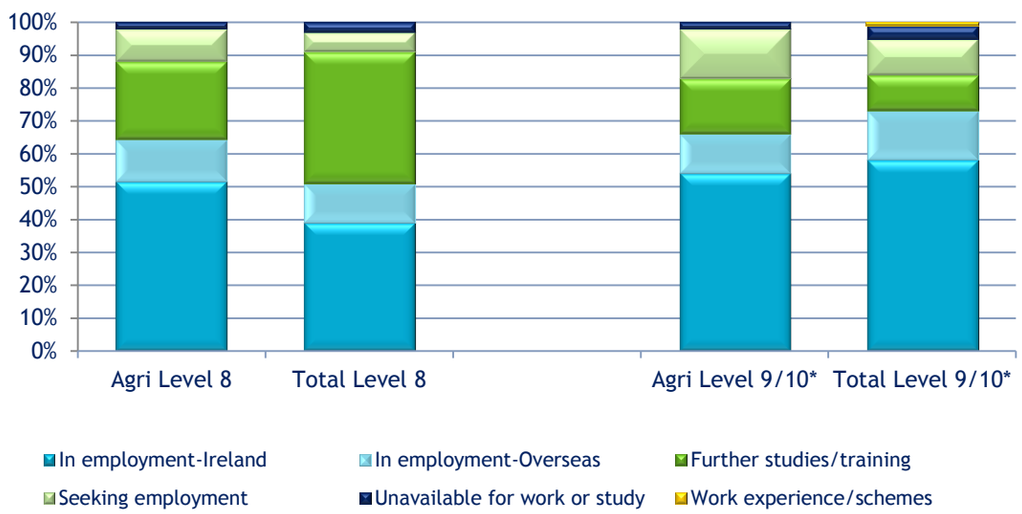
This section focuses on the economic status of those who have recently attained post-secondary or higher education qualifications. The HEA's First Destination Survey shows the destination of university graduates with honours bachelor degrees or masters/PhD awards whereas data from the CSO's QNHS examines qualification holders (both post-secondary and third level) aged 25-29 years as these are considered to be the closest proxy to recent graduates.

11.3.1 First Destination Survey

Figure 11.3 shows that for

- level 8: agriculture graduates at this level had a much higher rate of employment in Ireland nine months after graduation than the total cohort (52% compared to 39%) and as such, less likely to be engaged in further studies or training; the share seeking employment was also greater than the overall cohort
- level 9/10: agriculture graduates were less likely to be in employment in Ireland than level 9/10 graduates overall but more likely to be in further studies or seeking employment.

Figure 11.3 First destination of NFQ level 8 and level 9/10 agriculture graduates, 2013



Source: HEA

* Level 9/10 includes masters and PhDs only

11.3.2 Recent qualification holders in the labour force

The number of young (25-29 year olds) agriculture graduates was too small to report in great detail. The main findings were as follows:

In quarter 4 2014,

- third level graduates accounted for two thirds of all agriculture graduates in this age cohort
- those with third level qualifications were slightly more likely to be in employment than post-secondary education holders (82% compared to 77%)
- those with post-secondary education were far more likely to be employed in related fields than their third level equivalents.

When compared to quarter 4 2009,

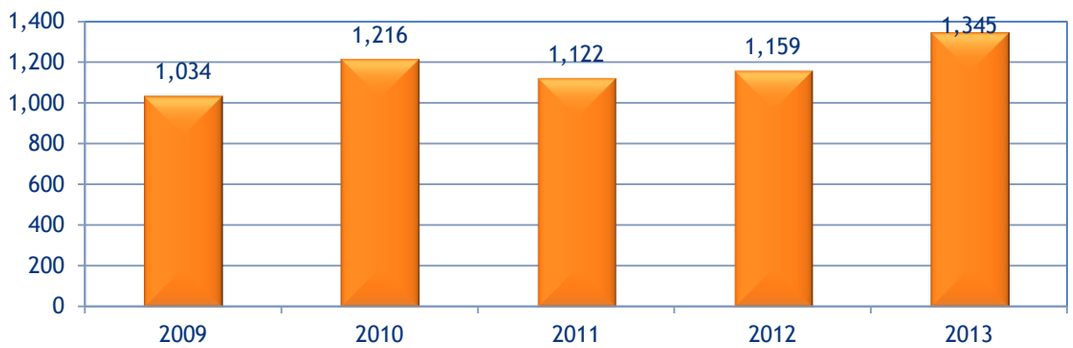
- the number of young agriculture graduates fell at both levels of education but more so for post-secondary education holders
- the share of third level graduates employed in a related field declined sharply.

11.4 Future output of agriculture/vet graduates

11.4.1 PLC Enrolments

Figure 11.4 shows the number of year one enrolments on PLC agriculture/vet courses. In 2013, there were almost 1,350 learners enrolled, 30% more than in 2009. The increases related primarily to additional enrolments on horticulture courses.

Figure 11.4 PLC enrolments (year 1) in agriculture/vet, 2009-2013



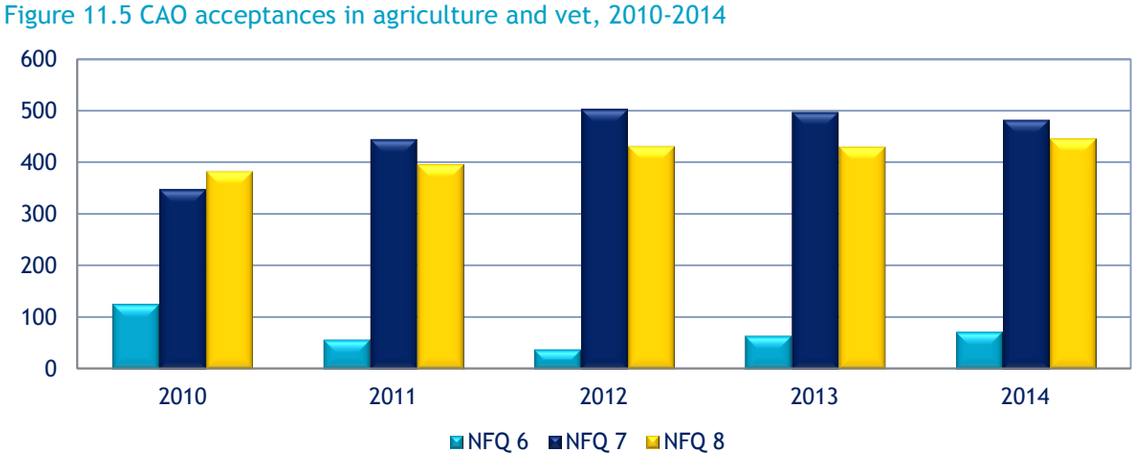
Source: DES

11.4.2 CAO Acceptances

CAO acceptances (levels 6-8) for courses in agriculture accounted for 2% of all acceptances in 2014; the overall number of acceptances increased by 17% (or 144 acceptances) between 2010 and 2014.

- At levels 6 and 7 most courses were in the areas of agricultural science, veterinary nursing and horticulture; the declines at level 6 since 2010 have been offset by gains at level 7
- At level 8, acceptances were primarily in the areas of animal science and veterinary medicine.

Figure 11.5 CAO acceptances in agriculture and vet, 2010-2014

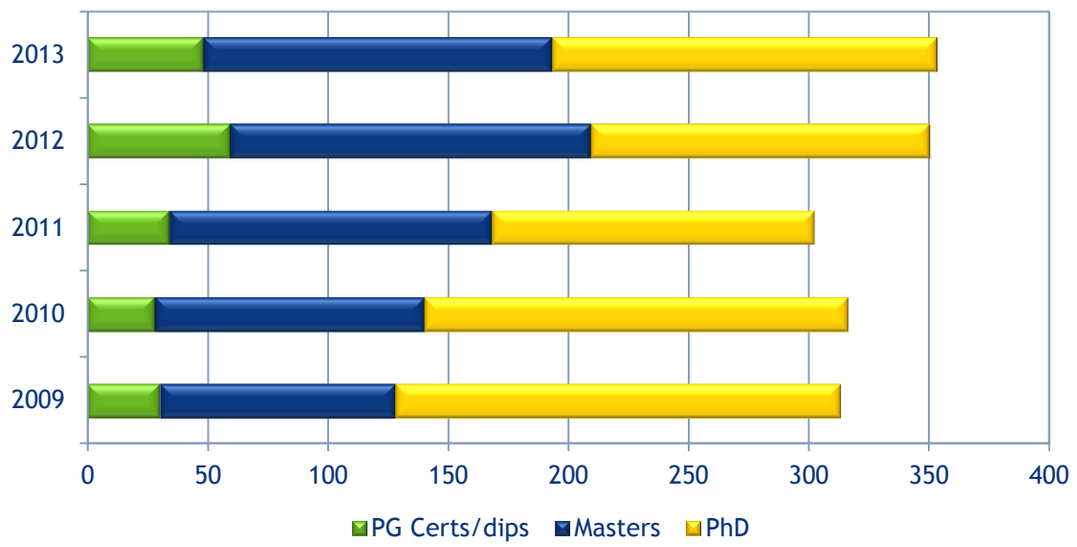


Source: CAO

11.4.3 Postgraduate Enrolments

- As detailed in Figure 11.6, the total number of postgraduate enrolments in agriculture increased by 40 between 2009 and 2013
- This is the only field where the highest numbers were for PhD programmes, although the numbers involved are small (amounting to 160 learners in 2013); nonetheless, the distribution of enrolments has shifted away from PhD programmes since 2010 and more towards postgraduate certs/diplomas and masters programmes.

Figure 11.6 Postgraduate enrolments in agriculture and vet, 2009-2013



Source: HEA

11.5 Labour market outlook for agriculture occupations

The National Skills Bulletin 2015 did not identify any agriculture occupations which had skills shortages.

11.6 Agriculture/vet skills supply - other facts and figures

Gender	32%	Share of all QQI (FET) major awards in SSBL subjects **made to females** in 2014; this compares to a 62% share for females across all fields (Source: QQI)
	39%	Share of higher education graduates from agriculture/vet programmes in 2013 who were **female**; this compares to an average of 53% for higher education graduates overall (Source: HEA)
Lifelong Learning[35]	<3,000	Number of 25-64 year-olds with agriculture/vet qualifications who had participated in **lifelong learning** activities in quarter 4 2014 (Source: SLMRU analysis of QNHS data)
Further Education & Training	8,000	The number of **QQI FET minor and special purpose awards** made in agriculture/vet in 2014; of these, 3,400 were at NFQ 5; over 5,000 were for horticulture awards (Source: QQI)
	1,000	The number of QQI FET major awards made in agriculture/vet to **learners at ETBs** (made up of former FÁS and VEC provider centres); there were a further 1,300 made to learners at Teagasc centres (Source: QQI)
Higher Education	13%	The **non-progression rate amongst higher education**[36] new entrants in 2010/11 in the broader category comprised of science/computing, agriculture and vet; this compares to 16% across all fields of learning; the non-progression rate was lower for level 8 courses (10%) (Source: HEA)
	1	The percentage point decline in the non-progression rate for those studying science/computing agriculture and vet when compared to 2007/08 (Source: HEA)
	N/A	The number of graduates who were domiciled in Ireland but obtained awards in agriculture and vet from **UK higher education** institutions is not available

11.7 Outlook

- There were 48,000 agriculture graduates (aged 20-64 years), over half of whom were at post-secondary level.
- Those with post-secondary education were most likely to work in agriculture-related occupations, whereas those who had studied to third level had a wider spread of occupations.
- Employment rates were relatively high for both post-secondary and third level graduates, even for the younger cohorts, although the numbers involved were small.
- There has been little change in inflows to the education system in recent years; therefore, significant change in graduate output is not expected.
- While the labour market outcomes for agriculture graduates appear positive, these outcomes are associated with a relatively small number of graduates.

[35] Lifelong learning refers to adults aged 25-64 years who undertook formal and/or non-formal learning in the four weeks prior to the QNHS survey.
[36] Refers to full-time undergraduate new entrants NFQ levels 6-8.

Appendix A Education field occupations

Table A.1 Occupations included in education fields

Field of Education & Training	Occupations
Education	Careers advisers & vocational guidance specialists
	Education advisers & school inspectors
	Educational support assistants
	Further education teaching professionals
	Higher education teaching professionals
	Primary & nursery education teaching professionals
	Secondary education teaching professionals
	Senior professionals of educational establishments
	Special needs education teaching professionals
	Teaching & Educational Professionals
	Teaching & other educational professionals n.e.c.
	Teaching assistants
	Vocational & industrial trainers and instructors
Arts/humanities	Actors, entertainers & presenters
	Artistic, Literary & Media Occupations
	Artists
	Arts officers, producers & directors
	Authors, writers & translators
	Clergy
	Dancers & choreographers
	Design Occupations
	Florists
	Graphic designers
	Musicians
	Photographers, audio-visual & broadcasting equipment operators
	Pre-press technicians
	Print finishing & binding workers
	Printers
	Printing Trades
	Product, clothing & related designers
Social science, business & law	Actuaries, economists & statisticians
	Administrative Occupations: Finance
	Administrative Occupations: Government & Related Organisations

Field of Education & Training	Occupations
	Administrative Occupations: Office Managers & Supervisors
	Administrative Occupations: Records
	Advertising accounts managers & creative directors
	Advertising & public relations directors
	Archivists & curators
	Bank & post office clerks
	Barristers & judges
	Book-keepers, payroll managers & wages clerks
	Brokers
	Business & financial project management professionals
	Business & related associate professionals n.e.c.
	Business & related research professionals
	Business sales executives
	Business, Finance & Related Associate Professionals
	Business, Research & Administrative Professionals
	Business, research & administrative professionals n.e.c.
	Buyers & procurement officers
	Call & contact centre occupations
	Chartered & certified accountants
	Chief Executives & Senior Officials
	Collector salespersons & credit agents
	Communication operators
	Company secretaries
	Conference & exhibition managers & organisers
	Credit controllers
	Customer Service Managers & Supervisors
	Customer Service Occupations
	Customer service occupations n.e.c.
	Debt, rent & other cash collectors
	Elected officers & representatives
	Elementary Administration Occupations
	Elementary Sales Occupations
	Estate agents & auctioneers

Field of Education & Training	Occupations
	Estimators, valuers & assessors
	Finance & investment analysts & advisers
	Finance officers
	Financial accounts managers
	Financial administrative occupations n.e.c.
	Financial & accounting technicians
	Financial Institution Managers & Directors
	Financial managers & directors
	Functional Managers & Directors
	Functional managers & directors n.e.c.
	Garage managers & proprietors
	Human resource managers & directors
	Human resources administrative occupations
	Human resources & industrial relations officers
	Importers & exporters
	Insurance underwriters
	Journalists, newspaper & periodical editors
	Legal Associate Professionals
	Legal Professionals
	Legal professionals n.e.c.
	Legal secretaries
	Librarians
	Librarians & Related Professionals
	Library clerks & assistants
	Local government administrative occupations
	Management consultants & business analysts
	Managers & Directors in Retail & Wholesale
	Managers & directors in storage & warehousing
	Managers & directors in transport & distribution
	Managers & Directors in Transport & Logistics
	Market & street traders & assistants
	Market research interviewers
	Marketing & sales directors
	Marketing associate professionals
	Media Professionals
	Medical secretaries
	Merchandisers & window dressers
	National government administrative occupations

Field of Education & Training	Occupations
	Office managers
	Office supervisors
	Officers of non-governmental organisations
	Other Administrative Occupations
	Other administrative occupations n.e.c.
	Pensions & insurance clerks & assistants
	Personal assistants & other secretaries
	Pharmacy and other dispensing assistants
	Probation officers
	Public relations professionals
	Public Services and Other Associate Professionals
	Public services associate professionals
	Purchasing managers and directors
	Quality and Regulatory Professionals
	Quality assurance and regulatory professionals
	Receptionists
	Records clerks and assistants
	Retail cashiers and check-out operators
	Roundspersons and van salespersons
	Sales accounts and business development managers
	Sales administrators
	Sales and retail assistants
	Sales Assistants and Retail Cashiers
	Sales Related Occupations
	Sales related occupations n.e.c.
	Sales Supervisors
	Sales, Marketing and Related Associate Professionals
	School secretaries
	Secretarial and Related Occupations
	Shopkeepers and proprietors – wholesale and retail
	Social and humanities scientists
	Social workers
	Solicitors
	Stock control clerks and assistants
	Taxation experts
	Telephone salespersons
	Telephonists
	Transport and distribution clerks and assistants

Field of Education & Training	Occupations
	Typists and related keyboard occupations
	Vehicle and parts salespersons and advisers
	Welfare Professionals
Science, maths and computing	Biological scientists and biochemists
	Chemical scientists
	Conservation and Environment Professionals
	Conservation and Environmental Associate Professionals
	Conservation professionals
	Environment professionals
	Information technology and telecommunications directors
	Information Technology and Telecommunications Professionals
	Information technology and telecommunications professionals n.e.c.
	Information Technology Technicians
	IT business analysts, architects and systems designers
	IT operations technicians
	IT project and programme managers
	IT specialist managers
	IT user support technicians
	Laboratory technicians
	Natural and Social Science Professionals
	Natural & social science professionals n.e.c.
	Physical scientists
	Programmers & software development professionals
	Research & development managers
	Research & Development Managers
	Web design & development professionals
Engineering, Manufacturing & Construction	Air-conditioning & refrigeration engineers
	Aircraft maintenance & related trades
	Architects
	Architects, Town Planners & Surveyors
	Architectural & town planning technicians
	Assemblers (electrical & electronic products)
	Assemblers (vehicles & metal goods)
	Assemblers & Routine Operatives
	Assemblers & routine operatives n.e.c.
	Bakers & flour confectioners
	Boat & ship builders & repairers
	Bricklayers & masons

Field of Education & Training	Occupations
	Building & civil engineering technicians
	Building Finishing Trades
	Butchers
	Carpenters & joiners
	Chartered architectural technologists
	Chartered surveyors
	Chemical & related process operatives
	Civil engineers
	Coal mine operatives
	Construction & Building Trades
	Construction & building trades n.e.c.
	Construction & Building Trades Supervisors
	Construction Operatives
	Construction operatives n.e.c.
	Construction project managers & related professionals
	Crane drivers
	Design & development engineers
	Draughtspersons
	Draughtspersons & Related Architectural Technicians
	Electrical & Electronic Trades
	Electrical & electronic trades n.e.c.
	Electrical & electronics technicians
	Electrical engineers
	Electricians & electrical fitters
	Electronics engineers
	Electroplaters
	Elementary Construction Occupations
	Elementary Process Plant Occupations
	Elementary process plant occupations n.e.c.
	Elementary sales occupations n.e.c.
	Energy plant operatives
	Engineering Professionals
	Engineering professionals n.e.c.
	Engineering technicians
	Fishmongers & poultry dressers
	Floorers & wall tilers
	Food, drink & tobacco process operatives
	Footwear & leather working trades
	Furniture makers & other craft woodworkers

Field of Education & Training	Occupations
	Glass & ceramics makers, decorators & finishers
	Glass & ceramics process operatives
	Glaziers, window fabricators & fitters
	Industrial cleaning process occupations
	IT engineers
	Mechanical engineers
	Metal Forming, Welding & Related Trades
	Metal machining setters & setter-operators
	Metal Machining, Fitting & Instrument Making Trades
	Metal making & treating process operatives
	Metal plate workers, & riveters
	Metal working machine operatives
	Metal working production & maintenance fitters
	Mobile Machine Drivers & Operatives
	Moulders, core makers & die casters
	Other Skilled Trades
	Other skilled trades n.e.c.
	Packers, bottlers, canners & fillers
	Painters & decorators
	Paper & wood machine operatives
	Pipe fitters
	Planning, process & production technicians
	Plant & Machine Operatives
	Plant & machine operatives n.e.c.
	Plasterers
	Plastics process operatives
	Plumbers & heating & ventilating engineers
	Precision instrument makers & repairers
	Printing machine assistants
	Process Operatives
	Process operatives n.e.c.
	Production & process engineers
	Production Managers & Directors
	Production managers & directors in construction
	Production managers & directors in manufacturing
	Production managers & directors in mining & energy
	Quality assurance technicians
	Quality control & planning engineers

Field of Education & Training	Occupations
	Quantity surveyors
	Quarry workers & related operatives
	Rail & rolling stock builders & repairers
	Rail construction & maintenance operatives
	Road construction operatives
	Roofers, roof tilers & slaters
	Routine inspectors & testers
	Rubber process operatives
	Scaffolders, stagers & riggers
	Science, Engineering & Production Technicians
	Science, engineering & production technicians n.e.c.
	Sewing machinists
	Sheet metal workers
	Skilled Metal, Electrical & Electronic Trades Supervisors
	Smiths & forge workers
	Steel erectors
	Tailors & dressmakers
	Telecommunications engineers
	Textile process operatives
	Textiles & Garments Trades
	Textiles, garments & related trades n.e.c.
	Tool makers, tool fitters & markers-out
	Town planning officers
	TV, video & audio engineers
	Tyre, exhaust & windscreen fitters
	Upholsterers
	Vehicle body builders & repairers
	Vehicle paint technicians
	Vehicle technicians, mechanics & electricians
	Vehicle Trades
	Water & sewerage plant operatives
	Weavers & knitters
	Weighers, graders & sorters
	Welding trades
Agriculture & Veterinary	Agricultural & fishing trades n.e.c.
	Agricultural & Related Trades
	Animal Care & Control Services
	Animal care services occupations n.e.c.
	Elementary Agricultural Occupations

Field of Education & Training	Occupations
	Farm workers
	Farmers
	Fishing & other elementary agriculture occupations n.e.c.
	Forestry workers
	Gardeners & landscape gardeners
	Groundsmen & greenkeepers
	Horticultural trades
	Managers and proprietors in agriculture and horticulture
	Managers and Proprietors in Agriculture Related Services
	Managers and proprietors in forestry, fishing and related services
	Pest control officers
	Veterinarians
	Veterinary nurses
Health and Welfare	Ambulance staff (excluding paramedics)
	Care escorts
	Care workers and home carers
	Caring Personal Services
	Child & early years officers
	Childcare & Related Personal Services
	Childminders & related occupations
	Counsellors
	Dental nurses
	Dental practitioners
	Dispensing opticians
	Health & Social Services Managers & Directors
	Health Associate Professionals
	Health associate professionals n.e.c.
	Health care practice managers
	Health Professionals
	Health professionals n.e.c.
	Health services & public health managers & directors
	Hospital porters
	Houseparents & residential wardens
	Housing officers
	Managers & Proprietors in Health & Care Services
	Medical & dental technicians
	Medical practitioners
	Medical radiographers

Field of Education & Training	Occupations
	Midwives
	Nursery nurses & assistants
	Nurses
	Nursing & Midwifery Professionals
	Nursing auxiliaries & assistants
	Occupational therapists
	Ophthalmic opticians
	Paramedics
	Pharmaceutical technicians
	Pharmacists
	Physiotherapists
	Playworkers
	Podiatrists
	Psychologists
	Residential, day & domiciliary care managers & proprietors
	Senior care workers
	Social services managers & directors
	Speech & language therapists
	Therapy Professionals
	Therapy professionals n.e.c.
	Welfare & Housing Associate Professionals
	Welfare & housing associate professionals n.e.c.
	Welfare professionals n.e.c.
	Youth & community workers
Services	Agricultural machinery drivers
	Air traffic controllers
	Air transport operatives
	Air travel assistants
	Aircraft pilots & flight engineers
	Bar staff
	Beauticians & related occupations
	Bus & coach drivers
	Caretakers
	Catering & bar managers
	Chefs
	Cleaners & domestics
	Cleaning & Housekeeping Managers & Supervisors
	Cooks
	Driving instructors

Field of Education & Training	Occupations
	Elementary administration occupations n.e.c.
	Elementary Cleaning Occupations
	Elementary cleaning occupations n.e.c.
	Elementary Security Occupations
	Elementary security occupations n.e.c.
	Elementary Storage Occupations
	Environmental health professionals
	Fire service officers (watch manager & below)
	Fitness instructors
	Food Preparation & Hospitality Trades
	Fork-lift truck drivers
	Hairdressers & barbers
	Hairdressers & Related Services
	Hairdressing & beauty salon managers & proprietors
	Health & safety officers
	Hotel & accommodation managers & proprietors
	Housekeepers & related occupations
	Housekeeping & Related Services
	Inspectors of standards & regulations
	Kitchen and catering assistants
	Large goods vehicle drivers
	Launderers, dry cleaners & pressers
	Leisure & sports managers
	Leisure & theme park attendants
	Leisure & travel service occupations n.e.c.
	Leisure & Travel Services
	Managers & Proprietors in Hospitality & Leisure Services
	Managers & Proprietors in Other Services
	Managers & proprietors in other services n.e.c.
	Marine and waterways transport operatives
	Mobile machine drivers&operatives n.e.c.
	NCOs&other ranks
	Officers in armed forces
	Other Drivers&Transport Operatives
	Other drivers and transport operatives n.e.c.
	Other Elementary Services Occupations
	Other elementary services occupations n.e.c.
	Parking and civil enforcement occupations

Field of Education & Training	Occupations
	Police community support officers
	Police officers (sergeant & below)
	Postal workers, mail sorters, messengers & couriers
	Prison service officers (below principal officer)
	Property, housing & estate managers
	Protective service associate professionals n.e.c.
	Protective Service Occupations
	Publicans & managers of licensed premises
	Rail transport operatives
	Rail travel assistants
	Refuse & salvage occupations
	Restaurant & catering establishment managers and proprietors
	Road Transport Drivers
	School midday and crossing patrol occupations
	Security guards & related occupations
	Senior officers in fire, ambulance, prison & related services
	Senior Officers in Protective Services
	Senior police officers
	Ship & hovercraft officers
	Sports & Fitness Occupations
	Sports & leisure assistants
	Sports coaches, instructors & officials
	Sports players
	Street cleaners
	Taxi & cab drivers & chauffeurs
	Train & tram drivers
	Transport Associate Professionals
	Travel agency managers & proprietors
	Travel agents
	Undertakers, mortuary & crematorium assistants
	Van drivers
	Vehicle valeters & cleaners
	Waiters & waitresses
	Waste disposal & environmental services managers
	Window cleaners

Appendix B Other higher & professional education providers

Appendix B1 Training providers whose main activities are focused on the provision of education and training

Griffith College
Dublin Business School
Hibernia College
IBAT College Dublin
Carlow College
Children's Therapy Centre Ltd
Clanwilliam Institute
College of Computer Training
Development Studies Centre, Kimmage
Grafton College of Management Sciences
IBAT College Dublin
ICD Business School
IICP Education and Training
Independent Colleges
Institute of Physical Therapy and Applied Science
International School of Business
Irish Business and Employers' Confederation (IBEC)
Irish College of Humanities and Applied Sciences
Irish Payroll Association
Irish Institute of Purchasing and Materials Management
Leinster Academy, Leinster Rugby IRFU
Newpark Music Centre
National College of Ireland
Portobello Institute
Public Affairs Ireland
Setanta College
SQT Training
St Nicholas Montessori College Ireland
The American College, Dublin
The Open Training College

Appendix B2. Professional Bodies

Association of Chartered Certified Accountants
Association of International Accountants
Chartered Institute of Management Accountants
Chartered Institute of Public Finance and Accountancy
Institute of Chartered Accountants in England & Wales
Institute of Chartered Accountants in Ireland
Institute of Chartered Accountants of Scotland
Institute of Certified Public Accountants in Ireland
Institute of Incorporated Public Accountants
Irish Tax Institute
The Society of Actuaries in Ireland

Members of the Expert Group on Future Skills Needs

Name	Organisation
Una Halligan	Chairperson
Marie Bourke	Head of Secretariat and Department Manager, Department of Jobs, Enterprise and Innovation
Inez Bailey	Director, National Adult Literacy Agency
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Liz Carroll	Training and Development Manager, ISME
Ned Costello	Chief Executive, Irish Universities Association
Margaret Cox	Managing Director, I.C.E. Group
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Bryan Fields	Director, Strategy, Research and Evaluation, SOLAS
Joe Hogan	Founder, Chief Technology Officer & VP Openet Labs & IP Management
Declan Hughes	Assistant Secretary, Department of Jobs, Enterprise and Innovation
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Deirdre McDonnell	Principal Officer, Department of Education and Skills
Frank Mulvihill	Former President of the Institute of Guidance Counsellors
Brendan Murphy	President, Cork Institute of Technology
Alan Nuzum	CEO, Skillnets
Peter Rigney	Industrial Officer, ICTU
Mary-Liz Trant	Higher Education Authority

Recent Publications by the Expert Group on Future Skills Needs 2012-2015

Report	Date of Publication
Vacancy Overview 2014	May 2015
Lifelong Learning among Adults in Ireland, Quarter 4 2014	May 2015
A Study of the Current and Future Skills Requirements of the Marine/Maritime Economy to 2020	April 2015
The Expert Group on Future Skills Needs Statement of Activity 2014	April 2015
Addressing the Demand for Skills in the Freight Transport, Distribution and Logistics Sector in Ireland 2015 – 2020	February 2015
Guidance for Higher Education Providers on Current and Future Skills Needs of Enterprise: Springboard 2015	January 2015
Regional Labour Markets Bulletin 2014	September 2014
Monitoring Ireland's Skills Supply: Trends in Education and Training Outputs 2014	August 2014
National Skills Bulletin 2014	July 2014
Vacancy Overview 2013	May 2014
Assessing the Demand for Big Data and Analytics Skills, 2013 - 2020	May 2014
The Expert Group on Future Skills Needs Statement of Activity 2013	March 2014
Regional Labour Markets Bulletin 2013	March 2014
Guidance for Higher Education Providers on Current and Future Skills Needs of Enterprise: Springboard 2014	February 2014
Addressing Future Demand for High-Level ICT Skills	November 2013
Monitoring Ireland's Skills Supply: Trends in Education and Training Outputs 2013	July 2013
National Skills Bulletin 2013	July 2013
Future Skills Requirements of the Manufacturing Sector to 2020	April 2013
The Expert Group on Future Skills Needs Statement of Activity 2012	April 2013
Guidance for Higher Education Providers on Current and Future Skills Needs of Enterprise: Springboard 2013	February 2013
Vacancy Overview 2012	February 2013
Regional Labour Markets Bulletin 2012	January 2013
Monitoring Ireland's Skills Supply: Trends in Education and Training Outputs 2012	July 2012
National Skills Bulletin 2012	July 2012

Key Skills for Enterprise to Trade Internationally	June 2012
EGFSN Statement of Activity 2011	April 2012
Vacancy Overview 2011	February 2012
Guidance for Higher Education Providers on Current and Future Skills Needs of Enterprise (Forfás report based on EGFSN identified future skills needs)	February 2012
Addressing High-Level ICT Skills Recruitment Needs: Research Findings	January 2012

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