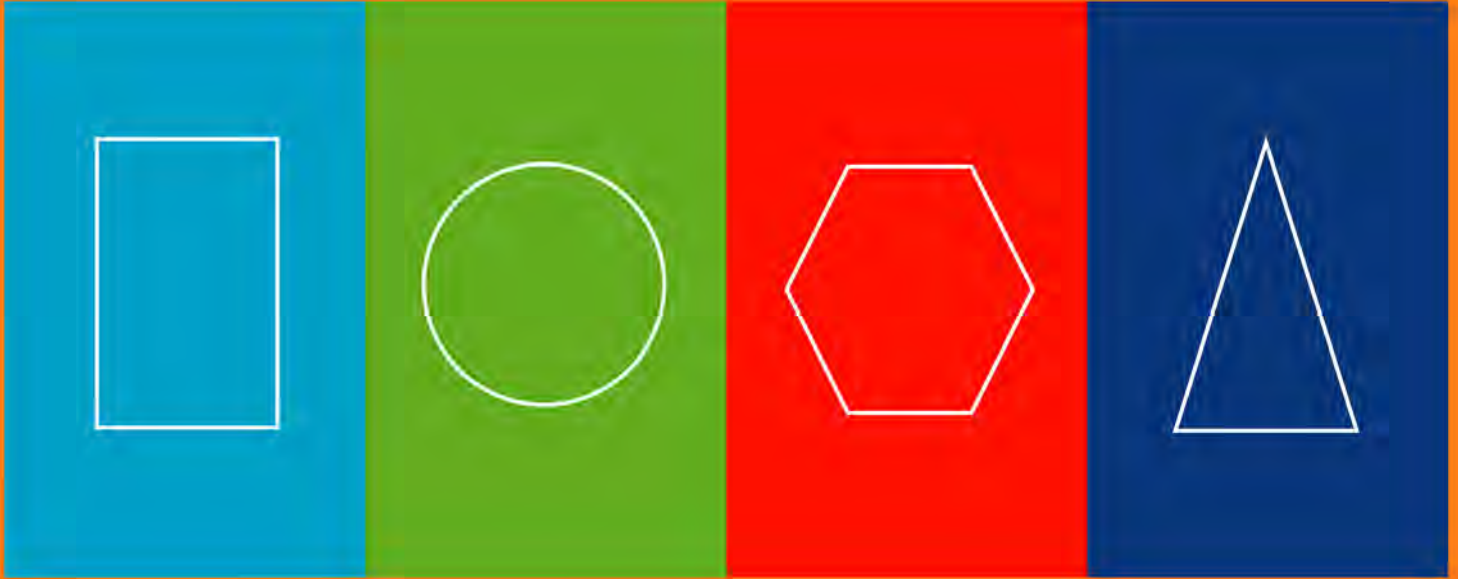


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Monitoring Ireland's Skills Supply

Trends in Education and Training Outputs

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Authors: Nora Condon
Joan McNaboe

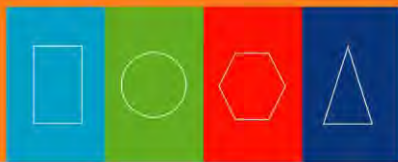


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Foreword

'*Monitoring Ireland's Skills Supply: Trends in Education and Training Outputs 2009*' is the fourth in a series of annual reports produced by the Skills and Labour Market Research Unit of FÁS on behalf of the Expert Group on Future Skills Needs (EGFSN). This report provides a unique overview of the skills emerging from the education system in terms of numbers, NFQ levels and fields of learning: it draws together all available information pertaining to the inflows and outflows of the four main sectors of the Irish education system (primary, post-primary, further education and training, and higher education) across the ten levels of the National Framework of Qualifications (NFQ).



Trends in education and training outputs reveal important data on student choices and serve as an indicator of possible future trends. In monitoring the skills supply that emerges from the education and training system in Ireland on an annual basis, the report serves as a valuable tool in the EGFSN's role in advising Government on the current and future skills needs of the economy.

Una Halligan,
Chairperson, Expert Group on Future Skills Needs



Executive Summary

'Monitoring Ireland's Skills Supply: Trends in Education and Training Outputs 2009' is the fourth in a series of annual reports produced by the Skills and Labour Market Research Unit of FÁS on behalf of the Expert Group on Future Skills Needs.

The objective of this series of reports is to provide an indication of the supply of skills to the Irish labour market from the formal education and training system. The report examines outflows from the formal education system across levels 1-10 of the National Framework of Qualifications (NFQ). At each level, the supply of skills is examined in terms of:

- student inflows: this is used as an indicator of the potential future supply
- graduate output: this refers to the number of awards made to individuals completing courses at second level, the further education and training or higher education sectors of the education system; graduate output trends are used as an indicator of the potential current supply
- gender: this is used as an indicator of gender balance
- field of learning: this is used as an indicator of the supply of skills by broad type
- international comparison: this is used as an indicator of how Ireland performs internationally in terms of graduate output

The report follows a pattern similar to that of previous issues of 'Monitoring Ireland's Skills Supply: Trends in Education and Training Outputs'. Following a brief outline of the Irish education system and the National Framework of Qualifications (NFQ) in Chapter 1, Chapter 2 presents key demographic data relevant to the anticipated inflows to the Irish education system. Chapter 2 also includes the Central Statistics Office (CSO) population projections under the M0F2 scenario¹. This differs from the projections we presented in the previous edition of this report (2008) which looked at population projections based on the M2F2 and envisaged a higher rate of inward migration. A profile of the education attainment of the adult population (aged 25-64 years) who have, in the main, left full-time education is also provided indicating the supply of skills currently available in Ireland.

Chapters 3-8 examine the supply of skills emerging from the education system for each NFQ level: Chapters 3 and 4 look at the attainments of Irish students at Junior Certificate level (NFQ 3) and Leaving Certificate level (NFQ 4-5). Further Education and Training awards (NFQ 1-6) are outlined in Chapter 5. For higher education, CAO acceptance data and graduate output are examined for NFQ level 7/6 and NFQ level 8 in Chapters 6 and 7 respectively; postgraduate enrolment and graduation data (NFQ 9-10) is examined in Chapter 8. For each of the higher education chapters (Chapters 6-8), a summary of the first destination of graduates is also provided. Chapter 9 provides an overview of the skills emerging from the private education sector. Finally, the number of Irish-resident students pursuing education in other OECD countries is presented in Chapter 10.

¹The M0F2 scenario is the slowest population growth scenario produced by the CSO in April 2008; it assumes a natural increase in population only and zero net migration throughout the period.



The main focus of the report is on the most recent data available and where possible we look at a five year trend: for Junior and Leaving Certificate level education and all CAO acceptance data, this pertains to the 2004-2008 period; university and IoT graduate data (all levels) and postgraduate enrolment data span the five year period 2003-2007; comparable data for further education and training outputs is available for 2007 and 2008 only. International and private education data is examined for various years (depending on source and availability). The latest available data for the first destination of higher education graduates relates to the 2006 cohort.

For higher education, part-time data has been detailed for the first time, providing an indication of the extent and nature of part-time education in Ireland. It is envisaged that future editions of this report will build on this data to provide a more comprehensive picture of the changes that are occurring in part-time education at higher level.

Outputs from the Irish Education System

Table 1 summarises the education and training output by level. Table 2 further examines this data by field of learning. The information in these tables refers to the latest available data: 2008 for Junior Certificate, Leaving Certificate (which spans Level 4 and 5 on the NFQ) and FETAC awards; 2007 for higher education (institutes of technology and universities) awards. FETAC data refers to Major awards only - information on all FETAC award types is detailed in Chapter 5. Table 2 does not include Junior and Leaving Certificate data as their broad nature does not allow for categorisation by field of learning.

Table 1 Summary of Education and Training Awards by NFQ Level, 2008²

	Levels 1/2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8	Level 9/10	TOTAL
Junior Certificate		56,020							56,020
Leaving Certificate			55,590						55,590
FETAC (Major awards)	60	1,420	1,780	14,200	6,970				24,430
Institutes of Technology					4,760	7,540	8,550	1,700	22,550
Universities					1,500	1,800	17,520	12,950	33,770
Total	60	57,440	71,570		13,230	9,340	26,070	14,650	192,360

Source: State Examinations Commission, FETAC, HEA

² All data in Tables 1 and 2 has been rounded. Graduation data for universities and Institutes of Technology is based on 2007 data as this is the latest available. Data excludes private education provision. Awards granted to Irish students who undertook studies outside of the Republic of Ireland are not included.



Table 2 Summary of Further and Higher Education and Training Awards by Field of Education, 2008

	Levels 1/2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8	Levels 9/10	Total
General & Combined Programmes	60	970	190	140	110	80	0	30	1,580
Education				10	70	90	1,810	2,410	4,390
Arts & Humanities				1,660	380	1,240	5,400	2,000	10,680
Social Science, Business & Law		450	250	3,580	2,520	2,850	7,740	4,830	22,220
Science				60	210	410	2,280	890	3,850
Computing				310	320	410	980	840	2,860
Engineering & Construction			70	470	6,500	1,930	2,580	830	12,380
Agriculture & Veterinary			60	640	560	300	300	50	1,910
Healthcare			10	6,210	670	940	4,390	2,400	14,620
Services			1,200	1,130	1,900	1,080	600	380	6,290
TOTAL	60	1,420	1,780	14,210	13,240	9,330	26,080	14,650	80,780

*Differences between Tables 1 and 2 are due to rounding

Source: FETAC (major awards), HEA

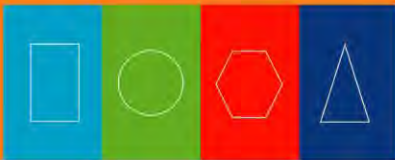
Levels 1 and 2: awards at this level were made for the first time in 2008 by FETAC. There were approximately 60 awards at this level, all in the field of general and combined studies.

Level 3: a total of 57,440 awards were made at level 3. The vast majority were Junior Certificate awards which totalled 56,020, a decrease of 2% on the 2007 figure. FETAC major awards totalled 1,420, a decrease of 4% on 2007, and were made primarily in general and combined programmes.

Level 4 and 5: over 71,500 awards were made at these levels in 2008. Leaving Certificate awards span level 4 and 5 and totalled 55,590, a 3% increase on the 2007 figure. The remaining awards were major awards made by FETAC, mostly at level 5 and in the field of healthcare (e.g childcare, healthcare support) - an increase of approximately 800 awards occurred between 2007 and 2008.

Level 6: there were over 13,200 level 6 awards which were almost evenly distributed between further education and training (i.e. FETAC major awards) and higher education (IoTs and universities). Almost half of all awards were in the field of engineering and construction (e.g. craft award in carpentry and joinery).

Level 7: there were over 9,300 level 7 awards which were all made in higher education, mostly in the IoT sector. Awards at this level were mostly in the field of social science, business and law (e.g. business management and accounting).



Level 8: awards at this level totalled 26,000 in 2007; approximately two thirds were made in the university sector; one third in the institute of technology sector. The number of level 8 awards has been increasing steadily in recent years and was 2% higher in 2007 when compared to 2006. A third of awards were in social science, business and law; a further 21% in humanities and arts while technology-related subjects accounted for a fifth.

Level 9 and 10: there were 14,650 awards made at this level in 2007, almost 90% of which were in the university sector. This represents an 8% increase on 2006. Over a third of awards were for postgraduate certificates/diplomas, 55% for master degrees and the remaining 7% for doctoral degrees. The highest number of awards was in social science, business and law, primarily for master degree programmes. There were approximately 90 additional PhD awards in 2007 compared to 2006 (a 9% rise) and overall PhD output totalled 1,055 in 2007. More than a third of PhD awards in 2007 were in science.

Part-time awards

Included in the awards data in Tables 1 and 2 are those that were made to part-time students (including distance learning students). Table 3 outlines the number of part-time awards by NFQ level in higher education. The share of part-time awards as a percentage of the total awards at any given level is also provided. In 2007, part-time awards in higher education (i.e. levels 6-10) were made up of approximately 4,800 awards at level 7/6; over 2,000 awards at level 8 and approximately 4,600 at level 9/10. All told, one fifth of higher education awards were for part-time courses of study.

Table 3 Part-Time Students in Higher Education, 2007

	Part-time*	% Part-time
Level 6	2,200	34%
Level 7	2,600	28%
Level 8	2,100	8%
Levels 9/10	4,600	31%
TOTAL	11,500	20%

*All numbers have been rounded

Source: HEA

Future Outlook

Primary and Post-Primary Level

The number of children born in Ireland increased significantly between 2006 and 2007 and further rises were observed in 2008 when the total number of births reached 75,000 - almost 40% higher



than in 1998. The rise in the number of births is likely to lead to an increase in the number of junior infant enrolments beginning in 2011.

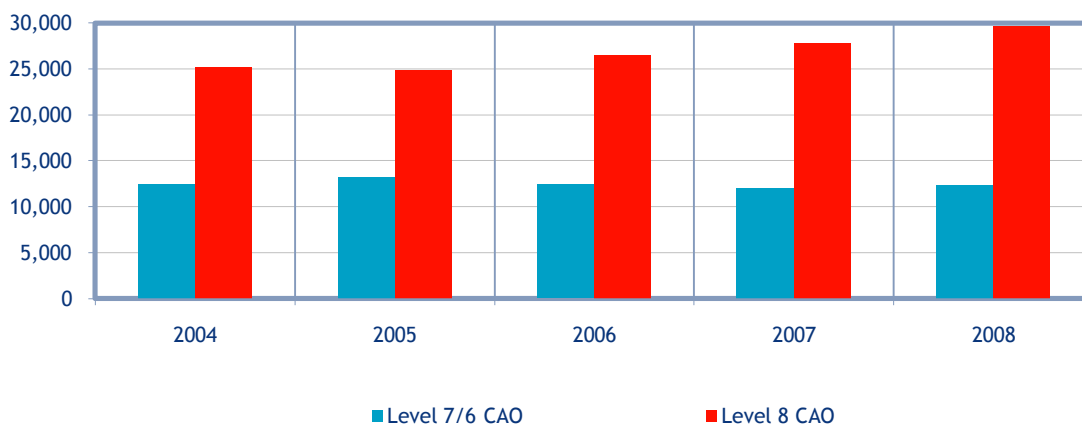
The number of enrolments to the first year of the Junior Cycle at post-primary level increased by 2% between September 2006 and 2007. In the medium term, this rise is likely to continue and so reverse the declining trends observed in recent years in the number of Junior Certificate candidates. It should result in further increases in the number of Leaving Certificate sittings from 2012.

Further and Higher Education and Training

According to the School Leavers' Survey Report 2007 (2008), approximately 85% of those who sat the Leaving Certificate in 2005 went on to some form of post-school education and training: with 25% entering further education and training and over 60% opting to enter higher education.

As shown in Figure 1, the total number of CAO acceptances has increased steadily in recent years due mainly to rises in acceptances for level 8 programmes. Rising participation rates in higher education should ensure that, despite the falls in the size of the school leaving age population in the short term, this trend continues. Level 7/6 acceptances, however, declined slightly between 2005 and 2007 but rose again in 2008. Provisional data for 2009 indicates a further rise in acceptances at levels 7/6 and 8 for 2009.

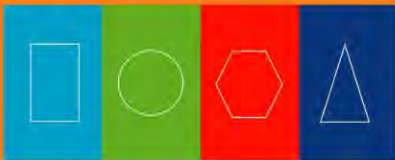
Figure 1 CAO acceptances (levels 7/6 and 8), 2004-2008



Source: CAO

According to population projections by the Central Statistics Office (M0F2 scenario), the school leaving age cohorts are expected to increase from 2013 onwards³. These increases in the medium term combined with increasing trends in the participation rate in higher education should ensure continued increases in total outflows from higher education.

³The M0F2 scenario is the slowest population growth scenario produced by the CSO in April 2008; it assumes a natural increase in population only and zero net migration throughout the period.



Focus on Science and Technology Skills

Due to the significant contribution of the science and technology sector to the Irish economy, trends affecting the supply of skills to this sector are examined here in greater detail. Trends relating to mathematics and science at post-primary level are first examined, followed by an analysis of engineering, construction, computing and science disciplines in higher education by level.

Post-primary level

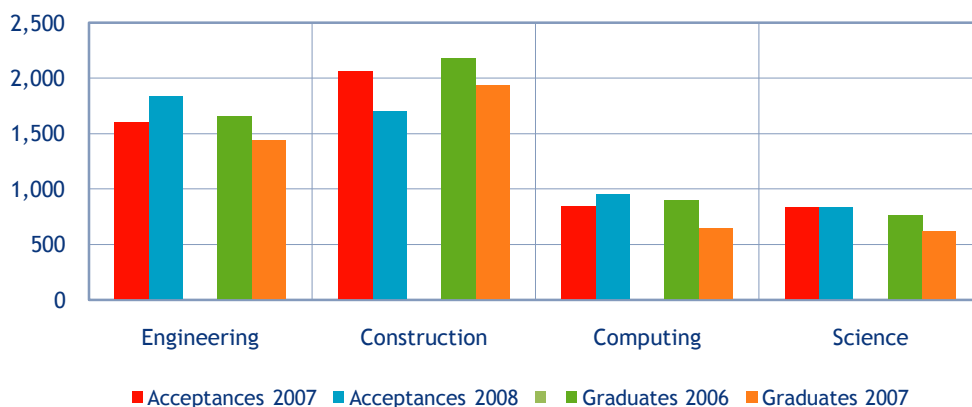
While almost all Junior Certificate candidates sat the examination in mathematics (98% in 2004 and 2008), the higher level participation rate for mathematics candidates increased by two percentage points to 43% (23,634 sits); furthermore, there has been a shift towards higher attainment at higher level with the share of students obtaining a grade D or more rising by three percentage points since 2004 to reach 97% in 2008. This provides a pool of approximately 23,000 candidates who may undertake mathematics at higher level in the Leaving Certificate in two-three years (2010-2011). In 2008, 8,510 sat the higher level mathematics paper in the Leaving Certificate examination, with 96% achieving at least a grade D.

Junior Certificate candidates are increasingly opting to sit the examination in science: the uptake rate increased from 84% to 87% (or from 47,726 to 48,950 sits) over the period 2004-2008. In addition, the higher level participation rate for this subject increased from 66% to 69% over the same period and in 2008 more than 33,000 students achieved a grade D or more at higher level. In the Leaving Certificate examination (higher and ordinary level), the number of people sitting biology totalled 26,500 in 2008 whereas the numbers for chemistry and physics were considerably lower at approximately 7,000 each.

Higher Education

Level 7/6

Figure 2 Level 7/6 Technology CAO Acceptances and Graduate Output



Source: CAO, HEA, IoTs



Engineering: students are increasingly accepting places on level 7/6 engineering courses in higher education; this is likely to slow or even halt the decline in graduate output observed between 2006 and 2007.

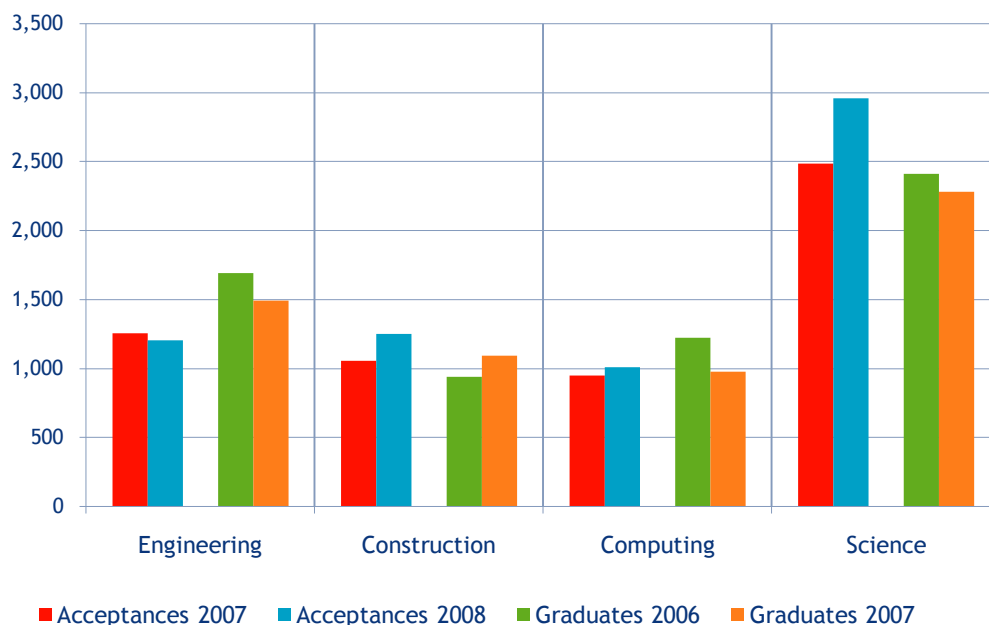
Construction: CAO acceptances for construction courses declined sharply between 2007 and 2008 and thus the decline in graduate output is likely to continue in the short-medium term.

Computing: the number of acceptances for computing courses increased by almost 13% over the period 2007-2008; this should lead to a moderate increase in the number of computing graduates in the short-term; the increase however will not be sufficient to counteract the sharp declines observed in recent years.

Science: the number of CAO acceptances for science courses remained unchanged over the period 2007-2008; despite a small increase in acceptances the preceding year, the decline in graduate output is unlikely to be fully reversed in the medium term.

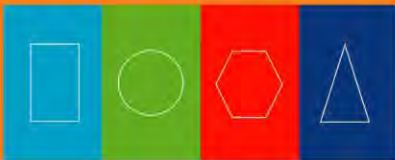
Level 8

Figure 3 Level 8 Technology CAO Acceptances and Graduate Output



Source: CAO, HEA. IoTs

Engineering: as the number of level 8 CAO acceptances remained relatively unchanged between 2007 and 2008, graduate output is unlikely to increase in the medium term.



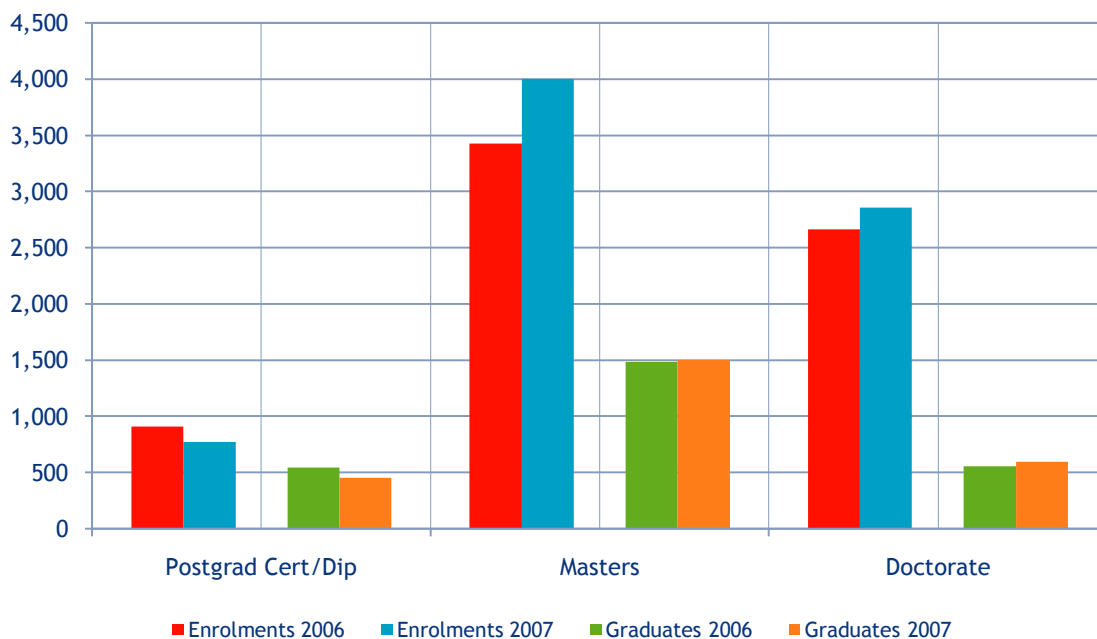
Construction: CAO acceptances on construction courses increased by 18% over the period 2007-2008 and this is likely to lead to continued increases in graduate output, at least in the short-term. However, provisional CAO acceptance data for 2009 shows a 13% decline in the number of acceptances for architectural courses indicating that, due to the sharp contraction in the construction sector, interest in construction related courses has declined.

Computing: although CAO acceptances in computing increased by 6% between 2007 and 2008 (+59 acceptances), it is unlikely to be sufficient to reverse the downward trend in graduate output observed in recent years.

Science: CAO acceptances for science courses rose sharply between 2007 and 2008; this should impact on graduate output in the medium-term and may even reverse the 5% decline which occurred between 2006 and 2007.

Level 9/10

Figure 4 Level 9/10 Technology Enrolments and Graduate Output



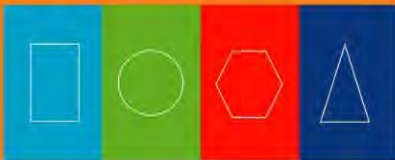
Source: HEA. IoTs

Postgraduate certificates/diplomas: technology courses at this level are primarily in the fields of computing and science; both enrolments and graduations in technology subjects have declined over the period 2006-2007.



Masters: over half of all postgraduate students in technology opt to take masters programmes across all technology-related fields; enrolments increased by 17% over the period 2006 and 2007 which will most likely result in an increase in the number of post-graduates in the short-medium term.

Doctorates: most technology students on doctoral programmes are in the field of science; enrolments continued to increase between 2006 and 2007 which is likely to result in a further rise in PhD graduate output.



Chapter 1 Introduction

1.1 Description

This chapter outlines the formal education system in Ireland. There are four interlinked sections in the formal education system (illustrated in Figure 1.1): primary, secondary, further education and training (FET) and higher education.

Primary school in Ireland is compulsory from the age of six years but many children begin before that: in January 2006, over 98% of children enrolled in their first year of primary school (junior infants) were aged five years or less. Pupils normally spend eight years in primary school after which they proceed to second level education, typically at the age of 13 years.

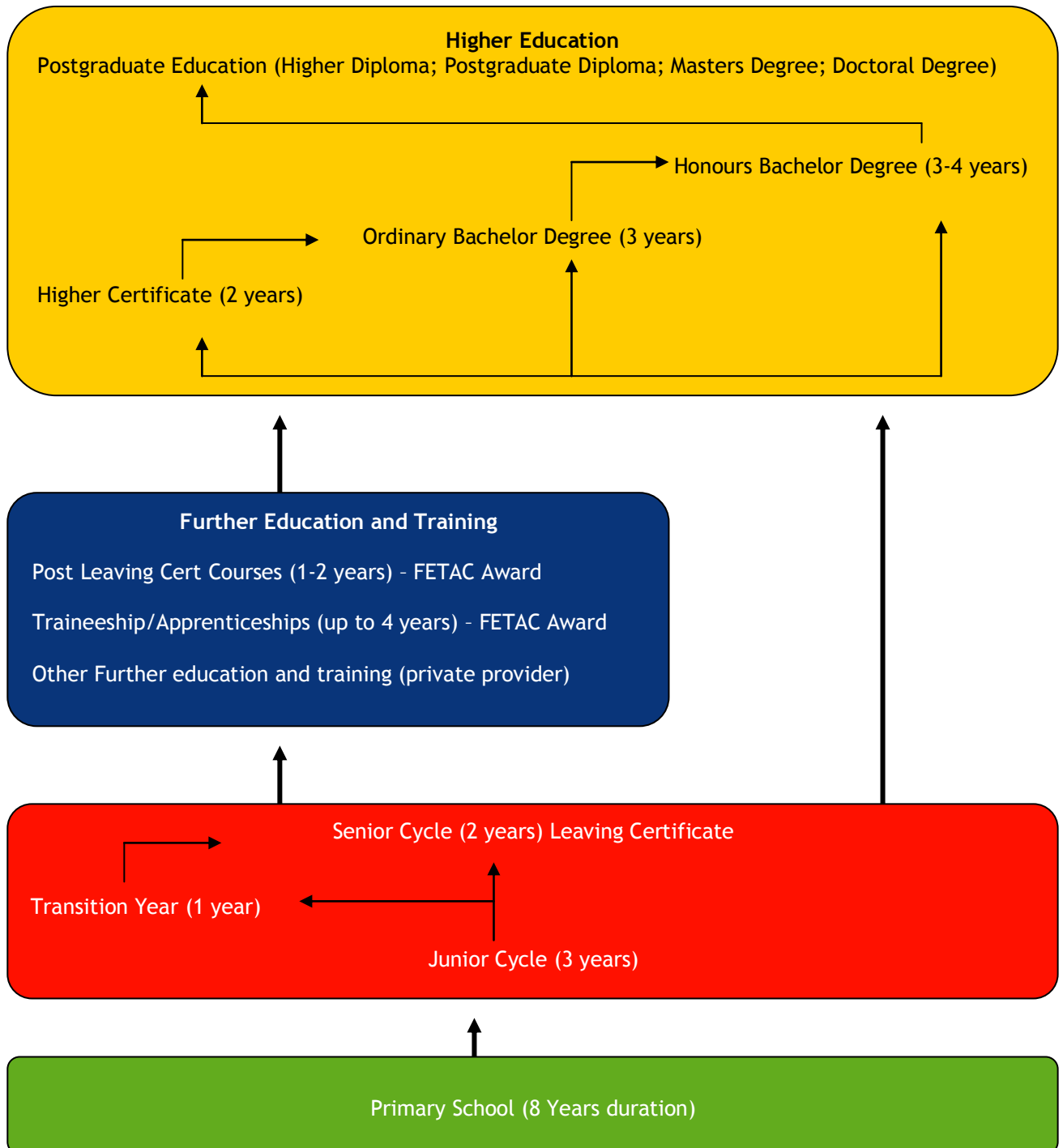
Second level education usually lasts five to six years and is divided into the junior cycle (three years duration) and the senior cycle (two years). Some pupils may also undertake the Transition Year Programme - a one year programme which aims to act as a bridge between the junior and senior cycles. Secondary school students sit two State examinations, the Junior Certificate and the Leaving Certificate, which take place at the end of the junior cycle and senior cycle respectively. Although compulsory education ends at 16 years, the majority of second level students complete the Leaving Certificate, usually at about the age of 18 years.

On completing second level education, school leavers who opt to continue studying have a number of options. They may enter the further education and training sector and follow technical or vocational training leading to a specific career (this includes apprenticeships and post leaving certificate courses). Further education and training awards may also lead to progression to higher education. Courses in basic literacy, numeracy and adult education are also provided for within the further education and training sector.

Alternatively, school leavers may enter higher education and pursue courses at either an institute of technology or university (including colleges of education). Higher education can last from two years (leading to a higher certificate award) or three to four years in order to obtain an honours bachelor degree. Postgraduate education then follows and may range from one year for postgraduate diplomas, higher diplomas and taught masters degrees to three or more years for a doctoral qualification.



Figure 1.1 Formal Irish Education System





1.2 Awarding Bodies

The standards for school awards are set through a combination of the work of the National Council for Curriculum and Assessment and the State Examinations Commission with the approval/agreement of the Department of Education and Science. The State Examinations Commission is the body responsible for the certification of the Irish state examinations at post-primary level, namely the Junior Certificate and the Leaving Certificate. The State Examinations Commission is a relatively new body, established in 2003 when it assumed responsibility for the operation of the State Certificate Examinations from the Department of Education and Science.

The Further Education and Training Awards Council (FETAC) has been the body responsible for making awards in Further Education and Training since its inception in 2001. Prior to 2001, a range of other bodies performed this function, e.g. FÁS, the National Council for Vocational Awards (NCVA), Fáilte Ireland, Bord Iascaigh Mhara (BIM) and Teagasc.

The Higher Education and Training Awards Council (HETAC) has responsibility for making awards for higher education courses completed in the institutes of technology and higher education institutions outside the university sector (e.g. independent colleges). The Institutes of Technology (IoTs) have delegated authority from HETAC to make their own awards although in some colleges the authority may be limited to certain award types with HETAC making the remainder of the awards.

Universities and the Dublin Institute of Technology act as their own awarding authorities.

1.3 National Framework of Qualifications

The National Framework of Qualifications (NFQ) was introduced in 2003 and implemented thereafter following an extensive consultation process with all of the national key stakeholders. The framework is defined as 'a single, nationally and internationally accepted entity, through which all learning achievements may be measured and related to each other in a coherent way and which defines the relationship between all education and training awards'. The NFQ is based on standards of knowledge, skill and competence. The structure of the framework is based on levels which are outlined in Table 1.1 and further detailed in Appendix A.

Each level has a specified level indicator which is a broad description of the learning outcomes at a given level in terms of eight sub-strands of knowledge, skill and competence (these level indicators are outlined in Appendix B). At each level of the framework there are one or more award types. An award type is described as a class of named awards which share common features and level. Each award type has its own award type descriptor. The National Qualifications Authority of Ireland (NQAI) has the responsibility of setting and developing these level indicators and award type descriptors. At each level in the framework there will be at least one award type. Each award type will have a range of named awards.



It is the responsibility of the awarding bodies (for example, HETAC, FETAC, the universities, institutes of technology, and the State Examinations Commission) to develop the named awards. The former and existing awards now placed on the ten-level framework are outlined in Appendix A.

Table 1.1 National Framework of Qualifications

Level	Awards
Level 10	Doctoral Degree
Level 9	Master's Degree, Post-Graduate Diploma
Level 8	Honours Bachelor Degree, Higher Diploma
Level 7	Ordinary Bachelor Degree
Level 6	Advanced Certificate, Higher Certificate
Level 5	Level 5 Certificate, Leaving Certificate
Level 4	Level 4 Certificate, Leaving Certificate
Level 3	Level 3 Certificate, Junior Certificate
Level 2	Level 2 Certificate
Level 1	Level 1 Certificate

Source: National Qualifications Authority of Ireland

1.4 Education Data Collection

The education data in this report was gathered from a variety of sources:

- Central Statistics Office (CSO) and Eurostat (for International Comparisons) provided demographic data
- The State Examinations Commission (SEC) provided data on Junior Certificate and Leaving Certificate examination candidates and results
- The Department of Education and Science (DES) provided school enrolment data, PLC course enrolment data and higher education enrolment data for the institute of technology sector for the period 2003-2006
- The Central Applications Office (CAO) supplied data regarding applicants to higher education and their course choice acceptances
- The Further Education and Training Awards Council (FETAC) provided the data relating to awards made to candidates undertaking further education and training
- The Higher Education Authority (HEA) supplied data on enrolments and graduation at institutes of technology (IoTs) and universities for 2007 and for universities for 2003-2006
- Individual IoTs and HETAC provided graduation data for the institute of technology sector for the period 2003-2006



- The Higher Education and Training Awards Council (HETAC) and individual professional institutes supplied data on the numbers qualifying from private education pathways
- The UK based Universities and College Admission service (UCAS) and the Higher Education Statistics Association (HESA) provided data pertaining to Irish students in the UK
- The OECD Education online database was the source of international graduation data.

The main focus of the report is on the most recent data available; where possible we look at a five year trend: for Junior and Leaving Certificate level education and all CAO acceptance data, this pertains to the 2004-2008 period; university and IoT graduate data (all levels) and postgraduate enrolment data span the five year period 2003-2007; comparable data for further education and training outputs is available for 2007 and 2008 only. OECD data is examined for the period 2002-2006; Private education data is not comparable and is confined to the latest year available, 2008; International data is examined for various years (depending on source and availability).

1.5 Report Structure

The report is structured as follows. Chapter 2 presents key demographic data relevant to (a) the anticipated inflows to the Irish education system at each level and (b) the adult population (aged 25-64 years) who are employed and who have, in the main, left full-time education. Chapter 3 outlines the educational attainments of students at Junior Certificate level, and those at Leaving Certificate level are presented in Chapter 4. Further Education and Training awards are examined in Chapter 5. Three Chapters, 6, 7 and 8 are devoted to higher education outputs: Chapters 6 and 7 look at CAO acceptances and the number of graduates emerging from courses at NFQ levels 7/6 and 8 respectively while Chapter 8 examines NFQ levels 9/10 enrolments and graduations. Chapter 9 provides an overview of the skills emerging from the private education sector. Finally, the number of Irish-resident students pursuing education in other countries is presented.



Chapter 2 Demographic Profile

Key Points

- In 2008, the number of births in Ireland reached a record high of 75,000
- Primary school enrolments have been increasing since 2001 and these increases will continue in the medium term, given the significant increases in the number of births in recent years
- Second level enrolments have begun to increase and will continue in the medium term due to the rising numbers of births and primary school enrolments
- The decline in the school leaving cohort (which has occurred since the late 1990s) is soon ending and there will be steady increases in the size of this cohort from 2012/13
- Approximately 85% of those who completed the Leaving Certificate entered some form of post-school education and training e.g. PLC courses, State sponsored training or third level (School Leavers' Survey Report 2007)
- The progression rate to higher education for those completing the Leaving Certificate in 2005 (latest available data) was estimated at in excess of 60%, an increase on the 57% progression rate observed one year earlier

In this chapter the demographic information relevant to the education system at key stages is first examined. It is important to consider demographic trends since the size of younger age cohorts (4-5 year olds; 12-13 year olds and 16-19 year olds) is, in part, a determinant of the number of students entering the education system. The sharp economic downturn that has unfolded since 2008 has created significant uncertainty about the size and demographic composition of future inward and outward migration. Changes, if any, in the migratory patterns of the relevant cohorts (school going children and women of child bearing age) during the recession will have implications for enrolments at all levels of the education system in the medium term. The direction and size of the net effect of migratory flows is unclear at this point. As a result, projections presented here assume zero net migration and are selected from a number of scenarios published by the CSO in April 2008.

The second section of this chapter presents a brief analysis of the educational attainment of the adult population and the work force which serves to illustrate the educational attainments of those who have already exited full-time education.

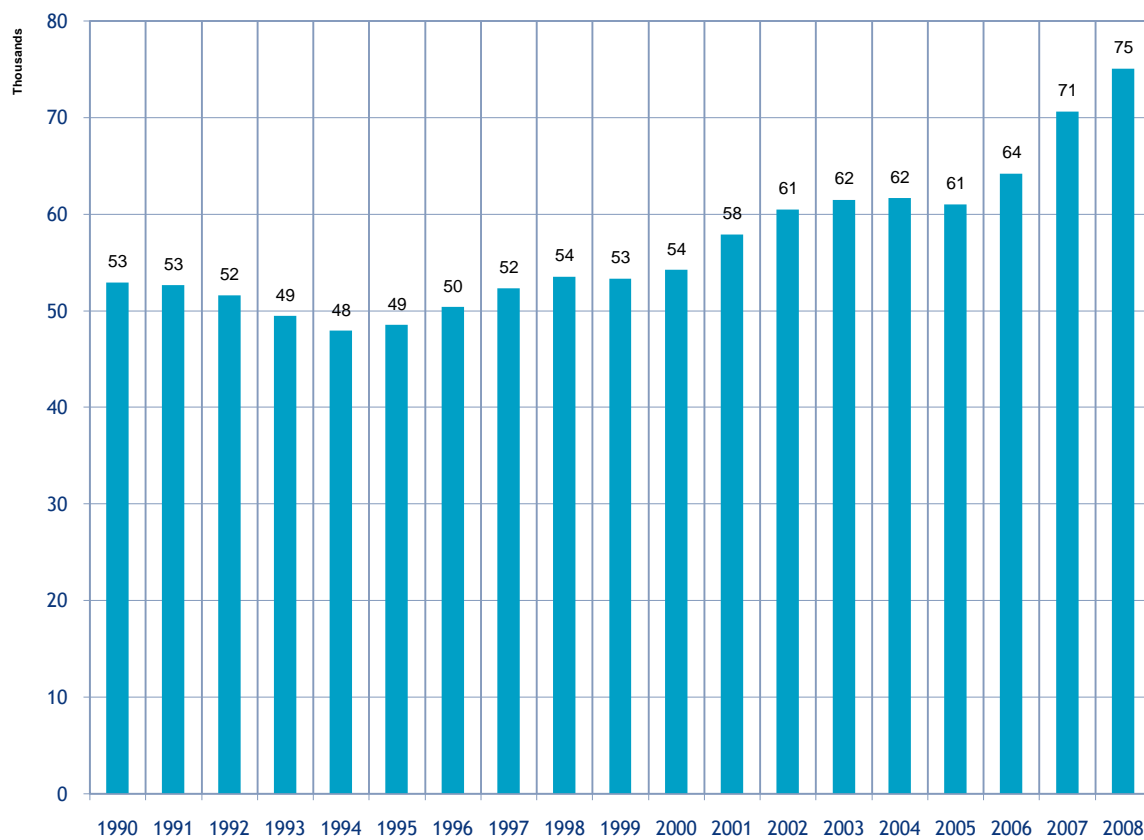
2.1 Births

Figure 2.1 shows the total number of births in Ireland annually over the period 1990-2008. The number of children born each year is an indicator of the pool of children available to enter the education system at various levels in subsequent years. The information on births provided here relates only to children born in Ireland but the school-age population is also affected by the net migration of young people to and from Ireland, e.g. children of migrating Irish citizens and the children of EU and non-EU nationals living in Ireland.



The number of births recorded in Ireland has been, in the main, increasing since the mid-nineties. At approximately 75,000, the number of births in 2008 was the highest on record since 1896 and the very steady increases in recent years have meant that the number of births in 2008 was almost 40% higher than in 1998. The rise was particularly sharp in 2007 (approximately 7,000 additional births on the previous year). Given that on average children enter the primary school education system at the age of 4 or 5 years, this is likely to have implications for junior infant enrolments from 2011 onwards.

Figure 2.1 Number of Births in Ireland 1990-2008



Source: CSO

2.2 Primary and Post-Primary Inflows

The decline in births observed up until 1995 was reflected in a reduced number of children entering junior infants in primary level schools. Since the majority of children start primary school at 4-5 years, the decline in junior infant enrolments continued until 1999 (see Table 2.1). However, primary school enrolments have been increasing since 2001 and these increases will continue in the medium term, given the significant increases in the number of births in recent years.



As detailed in Table 2.1, the number of Junior Cycle entrants was largely in decline until 2006, despite a small increase in 2003. The number of junior cycle entrants began to increase in 2007 and, given the increases in the number of births and primary school enrolments, it is expected that the increases in those commencing second level education will continue in the medium term.

Table 2.1 New Entrant Enrolments in Primary and Post-Primary Schools, 1996-2008

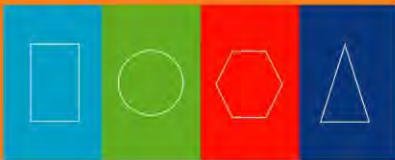
Year	Junior Infants	% Change	Junior Cycle Entrants	% Change
Sep-96	55,315	-	64,663	-
Sep-97	52,944	-4%	62,658	-3%
Sep-98	51,858	-2%	61,682	-2%
Sep-99	51,946	0%	61,230	-1%
Sep-00	52,643	1%	59,650	-3%
Sep-01	55,236	5%	56,674	-5%
Sep-02	56,520	2%	56,825	0%
Sep-03	57,054	1%	57,700	2%
Sep-04	56,591	-1%	57,227	-1%
Sep-05	58,458	3%	55,599	-3%
Sep-06	61,411	5%	55,237	-1%
Sep-07	63,252	3%	56,228	2%
Sep-08	65,360	3%	57,240	2%

Source: DES

2.2.1 Population Forecasts (primary and post-primary entrants)

This section examines the population forecasts for age cohorts corresponding to the typical age of entry to primary school (i.e. junior infants) and second level schools (i.e. first year junior cycle pupils). Department of Education and Science statistics show that in 2007 98% of all junior infant enrolments were aged either 4 or 5 years and 96% of all first year junior cycle pupils were aged either 12 or 13 years.

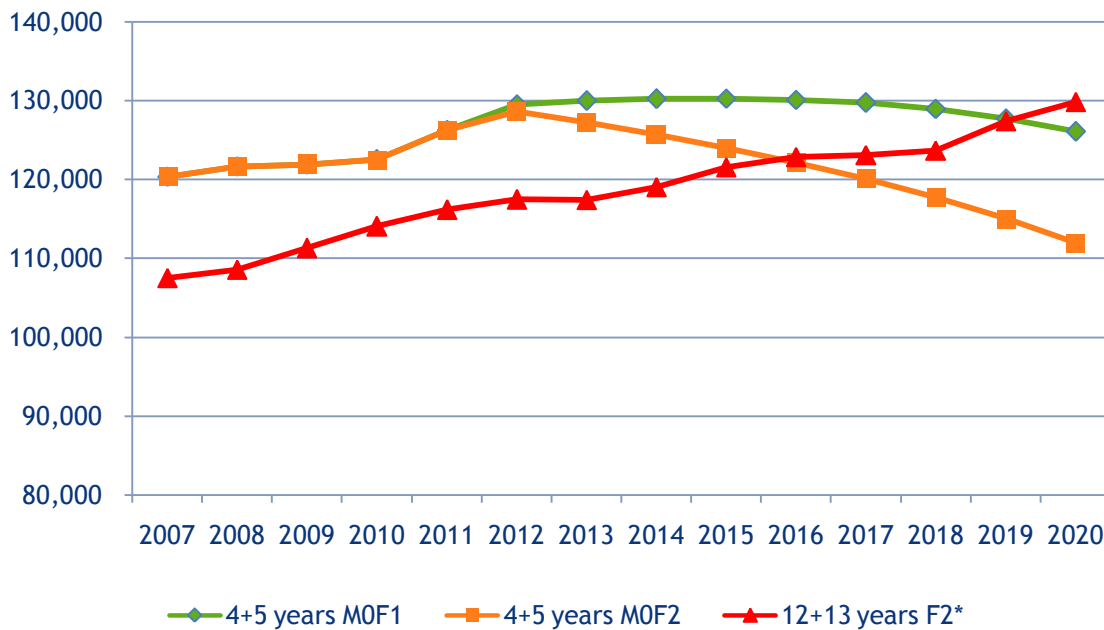
Figure 2.3 shows the Central Statistics Office (CSO) population projections under the M0F1 and M0F2 scenarios. These scenarios assume zero net migration (M0) and two fertility rates: a high variant (F1) and a low variant (F2). In F1 the fertility rate is projected to remain at its 2006 level of 1.9 while in F2 the fertility rate is set to decrease to 1.65 by 2016 and to remain constant thereafter. These differ from the projections presented in the previous edition of this report (2008) which looked at population projections based on the M2F2 scenario and envisaged a higher rate of inward migration.



The population forecasts estimate that the pool of possible junior infants will continue to increase until 2012. Although a decline is projected from 2013 onwards in the M0F2 scenario (or from 2017 in M0F1), these projections were based on data relating to the number of births up until 2006 and as such do not take account of the surge in the number of births which has occurred since then. These recent increases in the number of births will potentially result in significant growth in primary school enrolments in the immediate future and later at second level and beyond.

The number of 12 and 13 year olds in the population is forecast to increase steadily, reaching 130,000 by 2020.

Figure 2.3 Population Forecasts (M0F1 and M0F2) for Entrants to Primary & Second Level Education, 2007-2020



* For 12 and 13 year olds there is no difference between the two fertility rates (F1 and F2) except in 2020 where F1 has 900 more

Source: CSO

2.3 School Leavers

School leavers have a number of options on exiting second level education: they may enter the workforce, undertake further education and training (e.g. post Leaving Certificate courses, state sponsored training programmes) or pursue studies in higher education. According to the School Leavers' Survey Reports in 2007, approximately 60% of those who completed the Leaving Certificate in 2005 entered higher education (this is an increase on the 57% progression rate observed one year



earlier⁴). An additional 25% entered some form of further education and training including Post Leaving Certificate courses and state sponsored training programmes (e.g. FÁS, Fáilte Ireland)⁵.

2.3.1 CAO Acceptors

The school-leaving age in Ireland is between 16 and 19 years. Table 2.2 shows the share of Central Applications Office (CAO) acceptors who were aged 16-19 years over the period 2004-2008. With a minimum of 80% each year at NFQ levels 7/6 and 8, the greater shares of acceptors of higher level education places are within the typical school-leaving age cohort. Nonetheless, the shares of acceptors who were aged 16-19 years declined over the period 2004-2008, going from 87% to 80% at level 7/6 and from 88% to 85% over the same period thereby reflecting the expansion in the provision of higher education opportunities arising for adults over that period.

Table 2.2 Share of CAO Acceptors Aged 16-19, 2004-2008

NFQ Level	2004	2005	2006	2007	2008
Level 8	88%	88%	86%	86%	85%
Level 7/6	87%	85%	84%	81%	80%

Source: CAO Directors' Reports 2004-2008

2.3.2 Population Forecasts (further and higher education & training entrants)

Under the MOF2 scenario, although the population aged 16-19 years is expected to decline in the short term, the CSO projects steady increases in the size of this cohort from 2013 onwards. This reflects the roll out of the increased number of births in the mid-nineties and in junior infant and junior cycle enrolments in the early and late 2000s respectively.

⁴ McCoy, S., Kelly, E. and Watson, D. (2007) School Leavers' Survey Report 2006. ESRI/DES
⁵ Byrne, D., McCoy, S. and Watson, D. (2008) School Leavers' Survey Report 2007. ESRI/DES

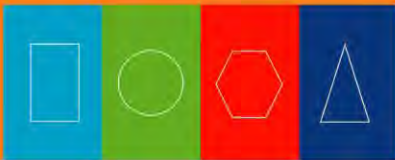
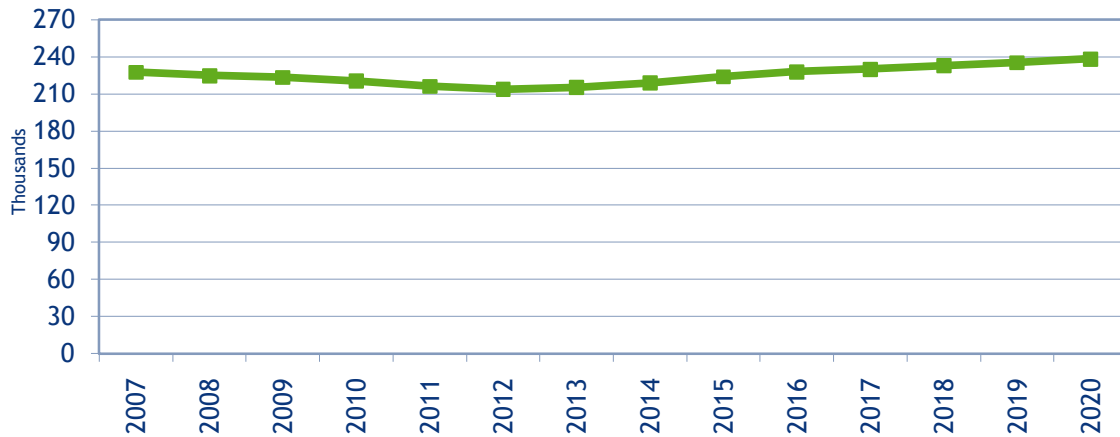


Figure 2.3 Population Forecasts (M0F2) for the School-Leaving Age Cohort (16-19 yrs), 2007-2020



* For 16 and 19 year olds, there is no difference between the two fertility rates (F1 and F2) for the period covered in the graph above (2007-2020)

Source: CSO

Participation in education is also likely to increase as a result of the economic downturn. Due to a sharp reduction in employment opportunities, including fewer openings for apprentices, younger people are less likely to leave full-time education and undertake instead a post leaving certificate course or enter higher education (school leavers) or, in the case of recent graduates, pursue postgraduate studies. Some of those who lost their jobs in the recession may also decide to return to education, particularly with Government incentives such as the offer of 1,500 part-time undergraduate and 1,000 part-time postgraduate places for persons who are unemployed.

2.4 Education Attainment of the Adult Population

This section examines the educational attainment of the working age population (25-64 years), based on the CSO's Quarterly National Household Survey (QNHS). This indicator is a measure of the supply of skills currently available in Ireland.

In quarter 4, 2008, over 800,000 people had attained a third level qualification, accounting for 35% of the adult population who stated their highest level of education (Table 2.3).



Table 2.3 Education Attainment of 25-64 Year-Olds, by Highest Level of Education Attained, Quarter 4 2008

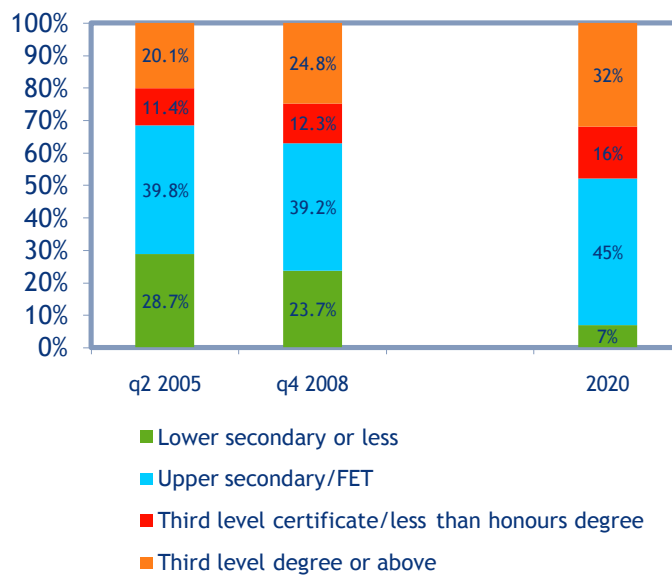
Education Level	Population	Population %
Lower secondary or less	696,500	30%
Upper secondary or FET*	836,000	36%
Third level non-degree	279,800	12%
Third level degree or above	535,800	23%
Total	2,348,100	100%

*Includes apprenticeships

Source: SLMRU analysis of CSO data (QNHS)

Figure 2.4 shows the progress made in the improvement of the education attainment of the labour force against the target set in the National Skills Strategy for 2020⁶. The shift in the education attainment is in the direction of the target: the share of labour force with the lowest education attainment is shrinking; the share with the highest level increasing.

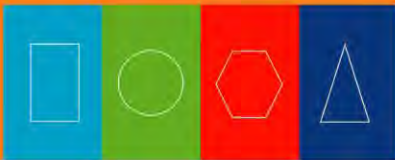
Figure 2.4 Education Attainment of the Labour Force and the NSS Vision for 2020



Source: SLMRU (FÁS) based on analysis of CSO data

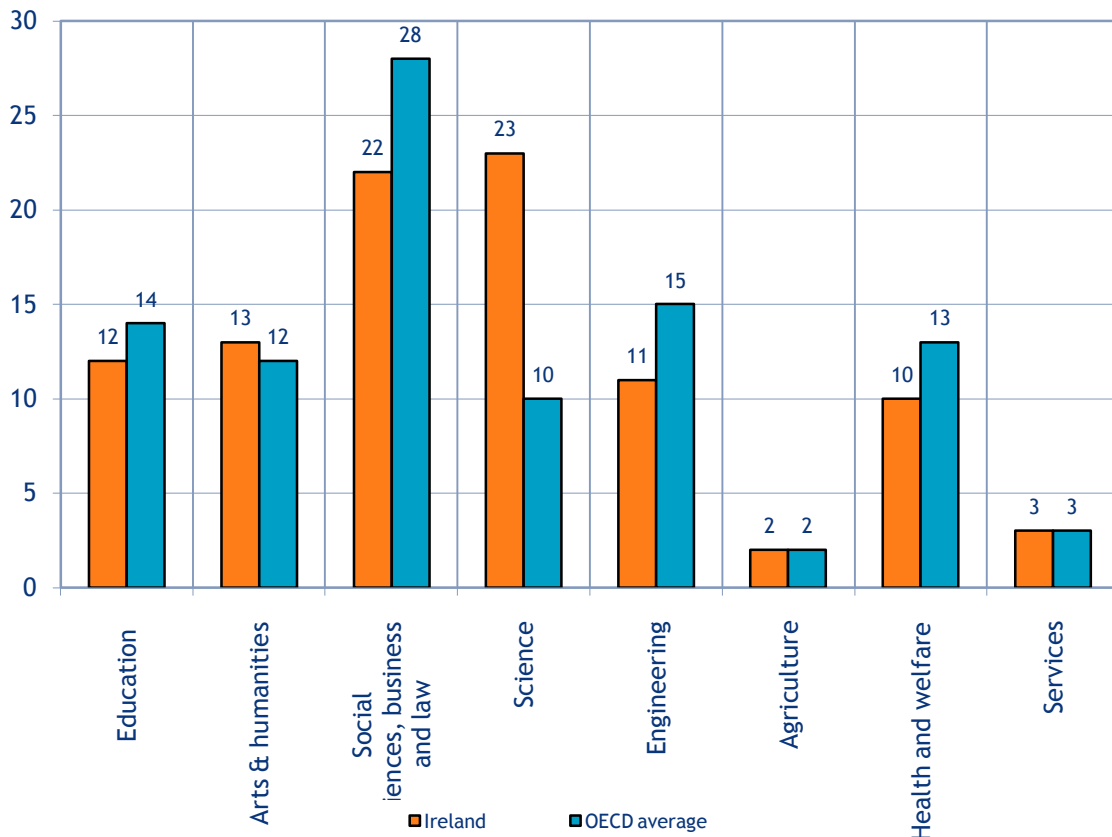
Figure 2.5 shows the distribution of Irish graduates (degree and above) by field and compares it with that of the OECD average. Almost one quarter of Ireland's third level graduates had achieved a qualification in science (including life sciences, computing and statistics), which is more than double the OECD average; at 11%, the share of engineering graduates on the other hand is below the

⁶ EGFSN (2007) Tomorrow's Skills: Towards a National Skills Strategy.



OECD average of 15%. Ireland also has a higher proportion of graduates in arts and humanities and is on a par with the OECD average for agriculture.

Figure 2.5 Distribution (%) by field of education for the 25-to-64-year-old population with third level degree and above (Ireland and OECD average)



Data refers to 2004

Source: EAG 2008 (OECD)

Data collected by the CSO in the QNHS on the highest level of education attained by field of education allows for further analysis of the data relating to third level graduates in employment. Table 2.4 details the distribution of third level graduates in employment by education discipline and age group. The education field pertains to the highest qualification attained and may differ to an individual's primary qualification (e.g. graduates from non-business backgrounds may obtain a masters in business studies). Almost one third of employed third level graduates attained their highest qualification in the field of social science, business and law.

When the field of education of third level graduates aged 25-44 years is compared with that of those aged 45-64 the data shows a shift towards an increased share of graduates in the fields of social science, business and law, science and services (e.g. tourism). The older graduates have a higher share of education and health and welfare qualifications.



Table 2.4 Education Field of those in employment with 3rd Level Qualifications (aged 25-64), Q4 2008

Education Field	Aged 25-44	Aged 25-44 (%)	Aged 45-64	Aged 45-64 (%)	Total	%
Education	33,400	7%	22,300	12%	55,700	8%
Humanities and arts	40,700	8%	17,800	10%	58,500	9%
Social science, business & law	164,400	33%	49,700	27%	214,100	31%
Science, maths and computing	51,000	10%	13,200	7%	64,100	9%
Engineering, manufacturing & construction	77,400	15%	29,100	16%	106,500	16%
Agriculture & veterinary	13,400	3%	7,100	4%	20,500	3%
Health & welfare	56,900	11%	29,200	16%	86,100	13%
Services	34,100	7%	7,100	4%	41,200	6%
Other/Not stated	29,500	6%	10,400	6%	39,900	6%
Total	500,800	100%	185,800	100%	686,700	100%

Source: SLMRU analysis of CSO data (QNHS)

By comparing the education discipline of employed graduates with the broad field in which they currently work it is possible to examine the extent to which people work in areas relating to their third level qualification (Table 2.5). Appendix C details the occupations included within each occupational field. The analysis was conducted by the SLMRU based on detailed ISCED field of training data⁷. Nonetheless, the analysis is approximate in nature.

Those with qualifications in education and health and welfare were most likely to work within related fields. On the other hand, those with humanities and arts qualifications were most likely to work outside that area: just 15% of humanities and arts graduates work in a related discipline. Over 60% of those whose highest level of education is in science, mathematics or computing are not working in a science related area, although 11% of science graduates work in education (primarily as second and third level teachers). Almost 70% of social science, business and law graduates work in this field, but it should be noted that this is a broad category and includes occupations such as civil servants and general managers.

⁷ International Standard Classification of Education (ISCED). Fields of Training Manual (Eurostat)

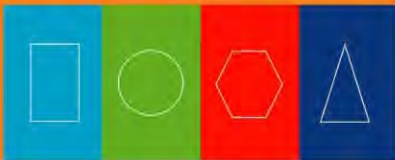


Table 2.5 Occupation Field of Those with Third Level Qualifications by Field of Learning, Q4 2008

Occupational Fields	Fields of Learning							
	Education	Humanities & Arts	Social sciences, Business & Law	Science, Mathematics & Computing	Engineering, Manufacturing & Construction	Agriculture & Veterinary	Health & Welfare	Services
Education	77%	26%	6%	11%	5%	5%	5%	8%
Humanities and Arts	0%	15%	1%	1%	1%	1%	0%	1%
Social sciences, Business & Law	8%	36%	69%	28%	13%	23%	7%	20%
Science, Mathematics & Computing	2%	3%	3%	38%	9%	7%	3%	6%
Engineering, Manufacturing & Construction	2%	8%	6%	11%	61%	9%	1%	7%
Agriculture & Veterinary	0%	1%	1%	1%	2%	40%	0%	1%
Health & Welfare	5%	3%	6%	4%	2%	4%	80%	7%
Services	4%	8%	8%	6%	7%	9%	3%	50%
Other Fields	0%	1%	0%	1%	1%	2%	0%	1%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Source: SLMRU analysis of CSO data (QNHS)



Chapter 3 Junior Certificate

Key Points

- Junior Certificate completion: 2% of school leavers in 2005 had not attained at least a Junior Certificate qualification (ESRI School Leavers' Survey 2007)
- More than 56,000 candidates sat the Junior Certificate examination in 2008 - a 2.2% decrease on the 2007 figure
- The share of Junior Certificate students sitting science increased from 84% to 87% between 2004 and 2008
- Junior Certificate candidates are increasingly opting to sit higher level papers
- The share of sits for higher level mathematics is the third lowest of any Junior Certificate subject
- The share of students achieving at least a grade D in higher level mathematics and science increased between 2004 and 2008, although the reverse was the case for ordinary level science
- Females are more likely than males to sit higher level subjects; in terms of grades achievement, females outperform males in all top ten subjects except geography (higher and ordinary level)

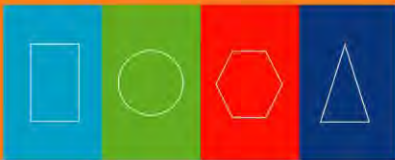
3.1 Introduction

The focus of this chapter is on the Junior Certificate which has been placed at level 3 on the National Framework for Qualifications. Learning outcomes associated with level 3 qualifications are detailed in Appendix C. We begin with a brief description of the Junior Certificate programme. This is followed by an analysis of Junior Certificate candidates in terms of numbers, subject choice, and achievements in three key subject areas (English, mathematics and science). The final section of this chapter summarises Ireland's international ranking in the PISA 2006 assessments.

3.2 Junior Certificate - Candidates and Examination

Students usually sit the Junior Certificate examination on completion of the Junior Cycle which forms the first three years of second level education. Candidates are typically aged 15 years. The ESRI School Leavers Survey Report 2007 estimated that in the academic year 2004/05, just 2% of the total number of those exiting the official school system had not attained at least a Junior Certificate qualification (Byrne et al. 2008: 8). Males were more likely than females to leave school before completing the Junior Certificate: 3% of males left school without any qualifications, compared to 2% of females.

A candidate following an approved course of study outside the State or who is attending an approved course of study organised under the Vocational Training Opportunities Scheme, Adult

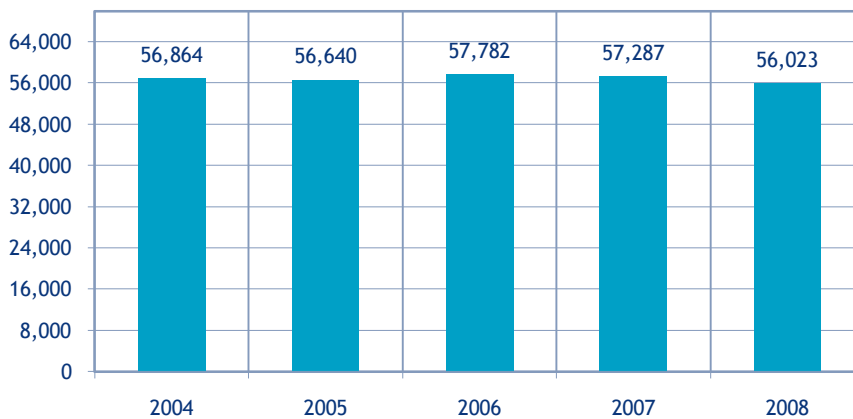


Literacy and Community Education Schemes and the Department of Social and Family Affairs second-level scheme for the unemployed may also sit the exams. In 2008, 1,289 (2.3%) of all Junior Certificate candidates were re-entrants to education - a share similar to that of 2007.

The Junior Certificate examination is available in more than 25 different subjects and candidates normally take between eight and ten subjects for the examination. Most subjects are available at higher and ordinary level; in addition, English, mathematics and Irish are available at higher, ordinary and foundation level. Civic, social and political education (CSPE) is available at common level only.

Figure 3.1 shows the number of students who sat the Junior Certificate examination each year for the period 2004-2008. In 2008, more than 56,000 candidates sat the Junior Certificate examination. This is the lowest number recorded over the five year period. Nonetheless, the declines are modest, representing a 2.2% decrease on the 2007 figure and just 1.5% since 2004. In the short-term, numbers are unlikely to increase substantially as the number of enrolments to the first year of the junior cycle declined in recent years; however, the 2% increase in the number of those entering post-primary education in September 2007 is likely to be reflected in a rise in the number of Junior Certificate sittings in June 2010.

Figure 3.1 Number of Junior Certificate Candidates, 2004-2008



Source: State Examinations Commission



3.3 Junior Certificate - Subject Choice and Levels

This section outlines the subject choices made by Junior Certificate candidates in the 2004 and 2008 examinations. First, we compare the total number and share of candidates sitting various Junior Certificate examination subjects; then the share of higher level sits is examined. This is followed by an analysis of the achievements of students in the key areas of mathematics, science and English. The final section provides a gender breakdown in terms of higher and ordinary level sits and achievements.

3.3.1 Top-Ten Subject Choice - Total Sits

The top ten Junior Certificate examination subjects for 2004 and 2008 are presented in Table 3.1. Almost all candidates sat the Junior Certificate examination in English, mathematics and civic, social and political education (CSPE) due in part to the fact that they are compulsory subjects for most students.

Three subjects - geography, science and religious education - showed increases in the share of students compared to 2004: the most substantial increase was for religious education (up from 26% to 44%)⁸; followed by science, which increased its share from 84% to 87%. The growth in the share of students sitting science meant that it became the sixth most popular Junior Certificate subject in 2008, compared to seventh in 2004.

In contrast, uptake rates declined for three subjects - Irish, French and business studies - each with a decrease in share of three or more percentage points over the five year period. Thus, while Irish was the fifth most popular Junior Certificate subject in 2004, it was ranked seventh in 2008. Despite the decline, French and business studies retained their respective rankings of eighth and ninth place.

⁸ Religious Education is a comparatively new Junior Certificate subject, first examined in 2003 and later rolled out throughout the country. While Religious Education was the tenth most popular subject in 2008, in 2004, it ranked 13th, behind art, craft and design (10th place), home economics (11th) and materials technology (12th).

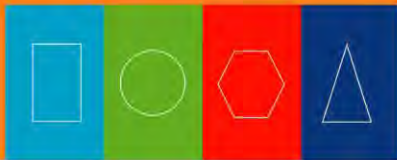


Table 3.1 Top Ten Junior Certificate Numbers & Uptake Rates, 2004 and 2008

	2004	2008
	Total Sits (% of Total)	Total Sits (% of Total)
English	56,217 (99%)	55,294 (99%)
Mathematics	55,937 (98%)	55,158 (98%)
CSPE	55,097 (97%)	54,492 (97%)
Geography	51,252 (90%)	50,967 (91%)
History	50,644 (89%)	50,046 (89%)
Science (1989 + Revised)*	47,726 (84%)	48,950 (87%)
Irish	51,005 (90%)	47,959 (86%)
French	36,299 (64%)	34,147 (61%)
Business Studies	34,689 (61%)	32,707 (58%)
Religious Education	14,921 (26%)	24,502 (44%)

*The numbers for science used throughout this chapter are comprised of the combined totals for the Revised Science syllabus and the older 1989 syllabus which continues to be offered to a small number of candidates.

Source: State Examinations Commission

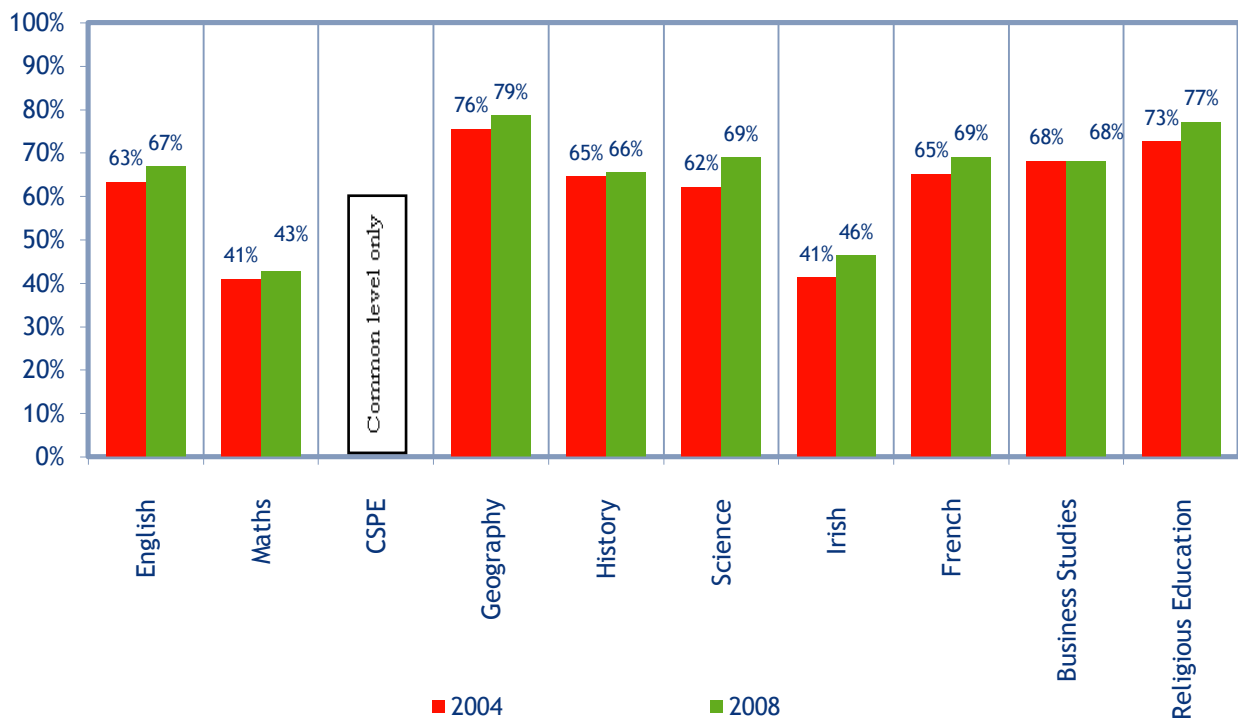
3.3.2 Top-Ten Subject Choice Higher Level Sits

Figure 3.2 shows the share of students who sat the higher level paper in the top ten Junior Certificate subjects in 2004 and 2008. For most subjects, between two thirds and three quarters of candidates took the higher level paper in 2008. The exceptions were for CSPE (which is a common level examination only) and, with less than a 50% share each, mathematics and Irish. At 43%, the share of sits for higher level mathematics is the third lowest of any Junior Certificate subject (ahead only of environmental and social studies and typewriting).

Junior Certificate candidates are increasingly opting to sit higher level papers. In 2008, the share of higher level sits for most of the top ten subjects increased when compared to 2004: only business studies remained unchanged at 68%. The most significant growth was for science, which increased by seven percentage points, translating into an additional 4,100 higher level sits in this subject.



Figure 3.2 Share of Higher Level Sits by Junior Certificate Subject (Top Ten), 2004 & 2008



Source: State Examinations Commission

3.3.3 English, Mathematical and Scientific Literacy

English, mathematics and science are worthy of particular attention since basic literacy skills in these three subjects forms the foundation for basic education and life long learning and are viewed as essential for an individual to work and participate in the economy. Table 3.2 examines the number and share of students who achieved a grade D or higher in the Junior Certificate examination in 2004 and 2008.

At ordinary level, the share of students achieving at least a grade D in 2004 and 2008 has remained largely similar for mathematics (93%) but has decreased by one percentage point for English (down from 99% to 98%) and by two percentage points for science (down from 98% to 96%).

At higher level, on the other hand, while the share of students with a grade D or more in English has remained the same, there was a three percentage point increase for higher level mathematics and a five percentage point increase for higher level science. Thus, despite a decline in overall numbers sitting mathematics (due mostly to a decline in the cohort overall), this higher pass rate means that in 2008 there were 1,150 more higher level mathematics students with grade D or more compared to 2004. The number of students with at least a pass grade in higher level science has grown strongly: there are 14% more higher level sits in 2008 compared to 2004, but the number of students with a pass grade was one fifth greater in 2008.



Table 3.2 Junior Cert Student Achievement in English, Maths and Science, 2004 and 2008

	2004		2008	
	≥ D	%	≥ D	%
Ordinary Level				
English	17,877	99%	15,994	98%
Maths	24,445	93%	24,568	93%
Science	17,806	98%	14,655	96%
Higher Level				
English	35,096	99%	36,447	99%
Maths	21,535	94%	22,986	97%
Science	27,754	94%	33,353	99%

Source: State Examinations Commission

3.3.4 Gender Distribution by Subject Choice 2008

Table 3.3 shows the gender breakdown of higher and ordinary level sits for the most popular Junior Certificate subjects in 2008. At higher level, females outnumber males in all subjects, except science where the number of female and male sits are similar. The gender imbalance is most pronounced for languages (especially Irish and French), geography and religious education.

The trend is reversed for ordinary level subjects, with males more likely than females to sit subjects at this level (except for business studies).

Table 3.3 Gender Breakdown of Higher and Ordinary Level Subjects 2008

	Higher Level				Ordinary Level			
	Male	%	Female	%	Male	%	Female	%
English	17,097	46%	19,842	54%	9,630	59%	6,678	41%
Maths	11,443	48%	12,191	52%	13,589	52%	12,795	48%
Geography	10,189	43%	13,396	57%	5,861	54%	4,998	46%
History	16,184	49%	16,622	51%	8,812	51%	8,428	49%
Science	16,782	50%	16,972	50%	8,729	57%	6,468	43%
Irish	9,270	42%	12,940	58%	12,472	55%	10,345	45%
French	10,189	43%	13,396	57%	5,758	55%	4,804	45%
Business Studies	10,523	47%	11,794	53%	5,126	49%	5,264	51%
Religious Education	8,450	45%	10,455	55%	3,084	55%	2,519	45%
CSPE	Common level only							

Source: State Examinations Commission



3.3.3 Gender Distribution of Junior Certificate Results

Table 3.4 outlines the differences between males and females in terms of achievement at higher and ordinary level. In terms of the share of students who obtained a grade C or above in the top ten subjects (at both higher and ordinary level), females outperform males in all subjects except geography.

At both higher and ordinary level, the gap between male and female achievement is most marked in art, craft and design and languages where the share of females obtaining a grade C or higher exceeds that of males by nine percentage points or more.

Table 3.4 Gender Differences in Achievement at Higher Level, Junior Certificate 2008

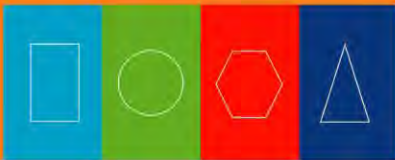
Higher Level	Males \geq C	(%)	Females \geq C	(%)	Difference (% points)
English	12,467	73%	16,530	83%	10
Mathematics	8,971	78%	9,899	81%	3
Geography	15,482	79%	15,949	78%	-1
History	10,818	67%	11,777	71%	4
Science	12,706	76%	14,062	83%	7
Irish	6,680	72%	10,697	83%	11
French	6,451	63%	9,753	73%	9
Business studies	8,363	79%	9,979	85%	5
Religious education	6,886	81%	9,394	90%	8
Art, craft & design	4,042	79%	8,636	90%	11

Source: State Examinations Commission

Table 3.5 Gender Differences in Achievement at Ordinary Level, Junior Certificate 2008

Higher Level	Males \geq C	(%)	Females \geq C	(%)	Difference (% points)
English	7,129	74%	5,743	86%	12
Mathematics	10,157	75%	10,096	79%	4
Geography	4,635	79%	3,791	76%	-3
History	5,938	67%	5,889	70%	3
Science	7,127	82%	5,547	86%	4
Irish	9,058	73%	8,798	85%	12
French	3,290	57%	3,226	67%	10
Business studies	3,872	76%	4,405	84%	8
Religious education	2,444	79%	2,214	88%	9
Art, craft & design	2,227	67%	2,558	79%	11

Source: State Examinations Commission



3.3 International Comparison

The Programme for International Student Assessment (PISA) is an international assessment project implemented across member states of the Organisation for Economic Co-operation and Development (OECD) and partner countries. It aims to provide internationally comparable indicators of the educational attainment of 15-year old students in the key domains of reading, mathematical and scientific literacy. The programme was first run in 2000 and was run again in 2003 and 2006. Although the latest PISA cycle was scheduled to take place in 2009, results are currently only available for PISA 2006. PISA 2006 showed that Ireland's 15 year-olds ranked

- 5th out of 30 for reading literacy (well above the OECD average)
- 14th for scientific literacy (above average)
- 16th for mathematical literacy (at the OECD average).

Further information on the performance of Ireland's 15-year olds internationally is outlined in the 2008 edition of *Monitoring Ireland's Skills Supply: trends in education/training outputs*.



Chapter 4 Leaving Certificate

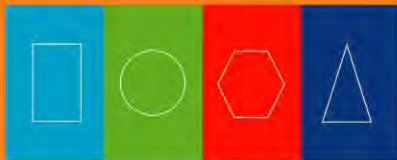
Key Points

- The numbers sitting the Leaving Certificate examination increased for the first time since 2003 and reached almost 55,600 in 2008
- Leaving Certificate completion: 14% of school leavers in 2005 had not attained at least a Leaving Certificate qualification - down from 18% in 2004 (School Leaver's Survey Reports)
- Females were more likely than males to obtain a Leaving Certificate: 90% of female school leavers obtained a Leaving Certificate; 82% for males
- There was a substantial increase in the take-up rate for biology which went from 44% in 2004 to 51% in 2008
- Less than one fifth of Leaving Certificate mathematics candidates sat the higher level paper - the lowest rate of higher level participation of all Leaving Certificate subjects
- Approximately 5,100 candidates did not achieve a D grade or more in mathematics at any level (higher, lower, foundation) amounting to an overall pass rate of 90%
- Higher level participation rates declined for physics, chemistry and mathematics between 2004 and 2008; compared to 2007, higher level participation in 2008 remained unchanged for mathematics and chemistry, but declined for physics
- In 2008, the share of females gaining grade D or higher is slightly greater than for males for mathematics, physics and chemistry: the gender gap at ordinary level is more pronounced than at higher level

4.1 Introduction

The focus of this chapter is on the Leaving Certificate examination which is held at the end of the senior cycle in post-primary schools. It spans levels 4 and 5 on the National Framework of Qualifications for Ireland. The learning outcomes associated with these levels are outlined in Appendix B.

The first section of this chapter concentrates on the Leaving Certificate programme and the candidates that typically sit the examination. An analysis of Leaving Certificate trends is also provided with a focus on (a) science and related subjects, (b) business and related subjects, (c) languages and (d) the gender distribution of sittings and achievements. This is followed by an analysis of the key skills areas (English, mathematics and science related subjects) in terms of grades' achievements. Finally, the points system (the principal means of application and entry to higher level education in the Republic of Ireland) is outlined followed by a short description of recent trends in the points achievements of Leaving Certificate candidates.



4.2 The Leaving Certificate - Examination and Candidates

Leaving Certificate candidates are typically post-primary school students, aged between 16 and 18 years old, who have completed five or six years of post-primary education. Every year, the total Leaving Certificate examination candidates include a number of repeat students who are sitting the examination for the second time. In 2008, repeat students accounted for 3.2% (1,778 sittings) of all Leaving Certificate sittings, a proportion similar to that of 2007 (3.5%).

Candidates studying outside the formal school system may also take the Leaving Certificate examination. A total of 795 Leaving Certificate were re-entrants to education entering for the 2008 examinations through various education schemes including the Vocational Training Opportunities Scheme (VTOS) and the Back to Education Initiative (BTEI) - a 5% increase on the preceding year.

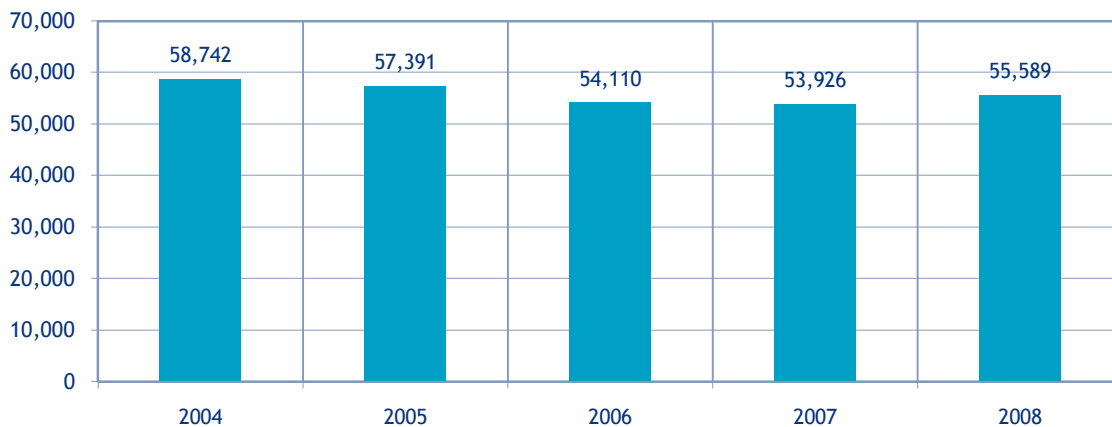
Not all students who enter second level education will complete the Leaving Certificate. The ESRI School Leavers Survey Report 2007 estimated that in the academic year 2004/05, approximately 14% of the total number of those exiting the official school system had not attained a Leaving Certificate qualification. This compares favourably with the figure for the preceding year (2003/04) when 18% of school leavers had not attained at least a Leaving Certificate (School Leavers Survey Report 2006). The report also found that females were more likely than males to obtain a Leaving Certificate qualification: of those leaving school in 2004/05, 90% of females obtained a Leaving Certificate compared to 82% of males.

Figure 4.1 presents the total number of Leaving Certificate (all programmes) candidates that took the examination over the period 2004-2008. Almost 55,600 students sat the Leaving Certificate examination in 2008, an increase of 3% (or 1,674 candidates) on the preceding year. This was the first increase in the number of Leaving Certificate sittings since 2003.

Despite the increase in candidate numbers between 2007 and 2008, the 2008 total remains 5% lower than the number of sittings observed in 2004. This is due to the declining birth rate observed since the late 1980s, as well as to a related decline in the number of repeat candidates: repeat candidate numbers have fallen by more than one third since 2004 when they totalled 2,818 (as compared to the 2008 figure of 1,778). Initial results for 2009 show that the number of Leaving Certificate sittings increased further (by approximately 3%) between 2008 and 2009 to reach 57,455.



Figure 4.1 Number of Leaving Certificate Candidates, 2004-2008



Source: State Examinations Commission

4.3 Leaving Certificate Programme Types

There are three types of programmes which lead to the Leaving Certificate award: Leaving Certificate Established, Leaving Certificate Vocational Programme and Leaving Certificate Applied.

- The Leaving Certificate Established (LCE) programme is designed to provide students with a broad and balanced education while allowing for some specialisation. The certificate is used for purposes to further education, employment, training and higher education.
- The Leaving Certificate Vocational Programme (LCVP) is a two-year, academic and experience based programme. It is not a separate stand alone programme but is designed to provide a strong vocational dimension to the Leaving Certificate Established programme.
- The Leaving Certificate Applied (LCA) programme was introduced in 1995 and is designed for students who do not wish to proceed directly to higher education or whose needs and aptitudes are not fully served by the other two Leaving Certificate programmes. The LCA is a distinct, self-contained programme and, as with the other Leaving Certificate programmes, is two years in duration. It aims to prepare students for the transition from school to adult and working life.

Figure 4.2 outlines the distribution of Leaving Certificate sittings by programme type for the five year period, 2004-2008. In 2008, the Leaving Certificate Established is the most popular examination and is taken by approximately 68% of all candidates. This is followed by the LCVP and the LCA which account for 26% and 6% of total sittings respectively. This distribution is in line with that of previous years.



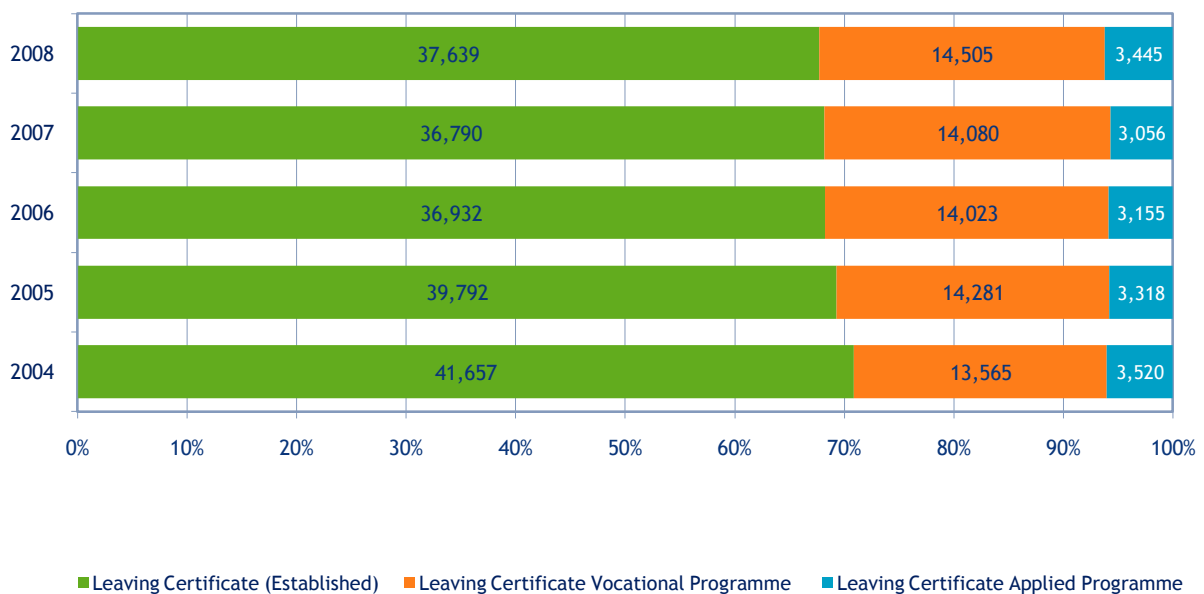
Over the five year period 2004-2008, the share of students sitting the LCE programme has declined slightly going from approximately 71% in 2004 to almost 68% in 2008; there was a concomitant rise in the share of LCVP students which increased from 23% of sits in 2004 to 26% in 2008. The share of LCA students has remained more or less stable at 6% over the five year period.

Overall, the number of candidates sitting the LCE programme declined over the period 2004-2008, due to the declines in the relevant demographic cohort and in the number of repeat students as well as a shift towards increased participation on the LCVP. While more than 41,500 students sat the LCE examination in 2004, the number fell by 9% to approximately 37,600 in 2008.

The number of candidates sitting the LCVP increased between 2004 and 2008. Despite a decline in the total number of Leaving Certificate sits, the number of LCVP sits increased by 7% (1,000 additional sits) over the five year period, reaching 14,505 in 2008.

The number of LCA programme sits declined by 13% between 2004 and 2007, although a recovery occurred between 2007 and 2008 to almost the level of 2004.

Figure 4.2 Leaving Certificate Candidates by Programme Type, 2004-2008



Source: State Examinations Commission

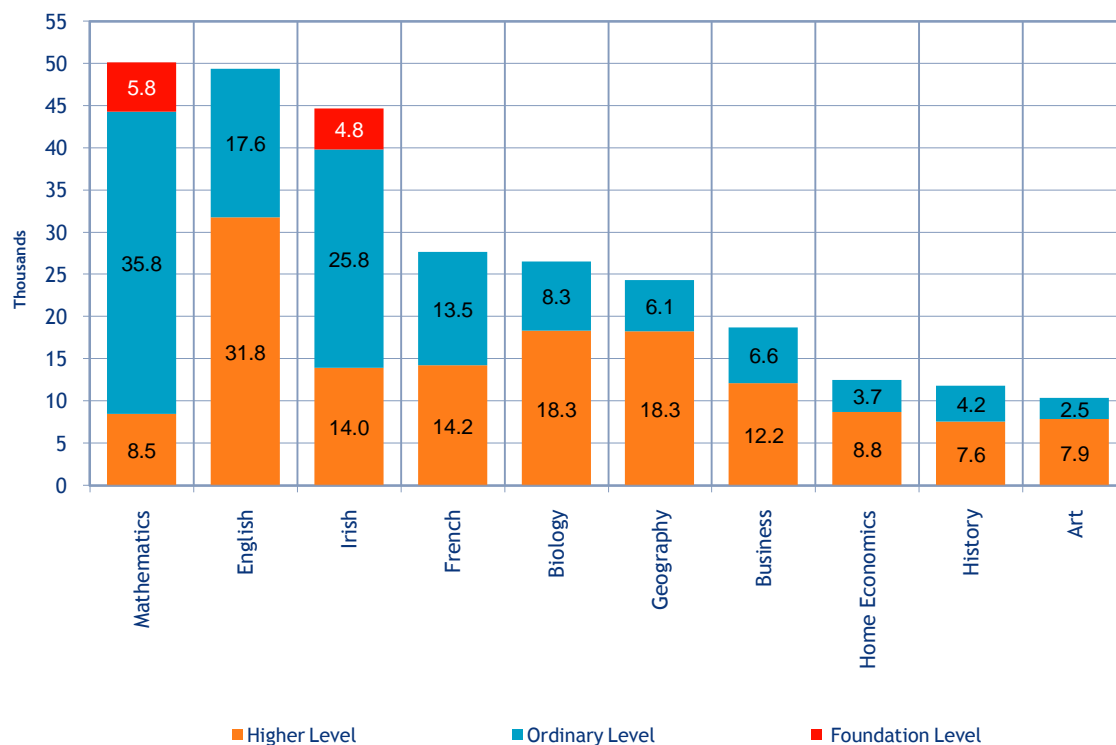


4.4. Leaving Certificate Results (LCE and LCVP)

As the LCVP is not a separate stand alone programme, LCE and LCVP candidates sit the same examination subjects. Figure 4.3 shows the top-ten subject choice for Leaving Certificate (LCE and LCVP) candidates in 2008. Also shown is the share of students who took each subject at higher, ordinary and, in the case of mathematics and Irish, foundation level.

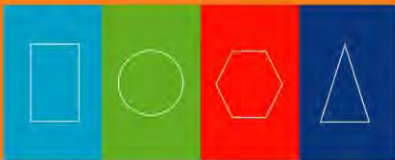
With approximately 50,000 sits each, mathematics and English are the most popular Leaving Certificate subjects due largely to the fact that they are compulsory subjects for most students and are a pre-requisite for progression to many higher education courses. Irish, with well over three quarters of all examination candidates, is the third most popular subject. Approximately one half of all candidates take examinations in biology, French or geography while less than a fifth of candidates sat home economics, history or art. As in previous years, biology is the only core science subject to figure in students' top-ten subject choice.

Figure 4.3 Top Ten Subject Choice for Leaving Certificate Candidates by Level, 2008



Source: State Examinations Commission

With the exception of mathematics and Irish, the share of students sitting the higher level paper is greater than that for ordinary level. Approximately 12% of mathematics candidates and 11% of Irish candidates sat the foundation level paper in 2008.



4.4.1 Science and Technology Subjects, 2004-2008

The total number of students for selected science related subjects in 2004, 2007 and 2008 is shown in Table 4.1. The share of Leaving Certificate candidates opting to sit each subject (i.e. take-up rate) is also provided, followed by the higher level participation rate for each subject.

Over the five year period, there was a substantial increase in the take-up rate for biology which went from 44% in 2004 to 51% in 2008; small increases were also observed for chemistry and construction studies although the overall decrease in Leaving Certificate candidates since 2004 means that in absolute terms the numbers sitting these two subjects actually declined over the five year period. Despite dropping to 10% in 2007, the take-up rate for technical drawing has remained largely stable since 2004 while 14% of Leaving Certificate candidates opted to sit physics in 2008. Other science related subjects, such as applied mathematics and engineering had take-up rates of below 10% - similar to previous years.

With the exception of mathematics, the majority of candidates in science related subjects sat the higher level paper. In 2008, more than two thirds of sits in biology and physics and over four fifths of chemistry sits were at higher level. In contrast, with less than one fifth at higher level, mathematics has the lowest rate of higher level participation not just for science subjects but for Leaving Certificate subjects overall.

Over the period 2004-2008, the only core science subject (i.e. mathematics, biology, chemistry and physics) which increased its share of students sitting the higher level paper was biology - although the increase was modest (two percentage points). Higher level participation rates actually declined by three percentage points for physics (down from 72% to 69%) and chemistry (down from 86% to 83%) and mathematics declined from 18% to 17%. Initial results for the 2009 Leaving Certificate examination show no improvement in higher level participation for these three subjects: physics fell to 68%, chemistry to 82% and mathematics to 16%. The 16% higher level participation rate means that despite a 3% increase in overall Leaving Certificate sits between 2008 and 2009, higher level sits in mathematics actually declined to 8,420. For other science subjects, construction studies and technical drawing, there was a four percentage point increase between 2004 and 2008.



Table 4.1 Selected Science Related Subjects: Take-Up & Higher Level Participation Rates, 2004, 2007 & 2008

	Maths	Biology	Chemistry	Physics	Construction Studies	Technical Drawing
2004 Sits	53,052	24,023	7,227	8,148	8,834	6,036
Take-up Rate	96%	44%	13%	15%	16%	11%
% Higher level	18%	67%	86%	72%	75%	52%
2007 Sits	49,044	25,792	6,927	7,251	8,342	5,223
Take-up Rate	96%	51%	14%	14%	16%	10%
% Higher level	17%	68%	83%	72%	76%	55%
2008 Sits	50,116	26,577	7,114	7,112	8,714	5,485
Take-up Rate	96%	51%	14%	14%	17%	11%
% Higher level	17%	69%	83%	69%	79%	56%

Source: State Examinations Commission

Of the 53,052 sits in mathematics in 2008, 5,803 (12%) were at foundation level. This is an increase on the 11% share at foundation level in 2004 and 2007.

4.4.2 Business Related Subjects 2004-2008

The total number of students for selected business subjects for 2004, 2007 and 2008 is shown in Table 4.2. The share of total Leaving Certificate candidates opting to sit a given subject (take-up rate) is also provided, followed by the higher level participation rate for each subject.

Approximately one third of all Leaving Certificate candidates in 2008 sat the examination in business, making it by far the most popular subject in this category; approximately one eighth of candidates took accounting and less than 10% sat economics. The share of students sitting business has been declining steadily since 2004 when this subject was taken by 40% of all Leaving Certificate candidates. Despite some small fluctuations in the intervening years, the share of students taking accounting increased by one percentage point in 2008 when compared to 2004. The shares for economics have remained stable since 2004 at 9%.

The higher level participation rate for each of these subjects declined over the period 2004-2008. Nonetheless, the majority of students in 2008 sat business related subjects at higher level, with approximately two thirds to three quarters of all candidates opting to take the higher level.



Table 4.2 Selected Business Related Subjects: Take-Up & Higher Level Participation Rates, 2004, 2007 & -2008

	Business	Accounting	Economics
2004 Sits	22,235	6,846	4,810
Take-up Rate	40%	12%	9%
% Higher level	68%	71%	79%
2007 Sits	18,958	6,814	4,444
Take-up Rate	37%	13%	9%
% Higher level	67%	72%	79%
2008 Sits	18,733	6,837	4,423
Take-up Rate	36%	13%	9%
% Higher level	65%	70%	77%

Source: State Examinations Commission

4.4.3 Selected Language Subjects, 2004-2008

The total number of students for the five most popular language subjects over the period 2004-2008 is shown in Table 4.3. Languages where less than 1% of the total number of Leaving Certificate students sat the examination are not included (e.g. Italian, Russian, Japanese). The share of total Leaving Certificate candidates opting to sit a given subject is given in brackets. Finally, the higher level participation rate is also provided.

English is the most popular language subject and is the second most popular Leaving Certificate subject overall, taken by at least 95% of all candidates every year. Irish is the second most popular language with well over four fifths of candidates taking this examination every year. The high uptake rates for these two languages are related to the fact that they are compulsory subjects for most students. Over half of all students take French while those taking German and Spanish amount to approximately 15% and 5% respectively in any given year.

Spanish was the only language to experience an increase in the share of students sitting the examination: the take-up rate for Spanish doubled over the period 2004-2008, going from 3% to 6%. On the other hand, take-up rates for all other languages in this section declined: Irish fell two percentage points; French, four percentage points; German and English one percentage point each.

Less than two thirds of candidates sit the higher level paper in languages. English had the highest rate of higher level participation at 64%, up two percentage points on 2004. Apart from mathematics, Irish has the lowest share of higher level sits in any Leaving Certificate examination subject, at 31%.



Table 4.3 Selected Language Subjects: Take-Up & Higher Level Participation Rates, 2004, 2007 & 2008

	Irish	English	French	German	Spanish
2004 Sits	48,690	52,780	31,434	8,304	1,755
Take-up Rate	88%	96%	57%	15%	3%
% Higher level	31%	62%	48%	60%	58%
2007 Sits	44,019	48,454	27,812	7,539	2,660
Take-up Rate	87%	95%	55%	15%	5%
% Higher level	31%	64%	50%	60%	58%
2008 Sits	44,660	49,753	27,698	7,466	2,965
Take-up Rate	86%	95%	53%	14%	6%
% Higher level	31%	64%	51%	59%	54%

Source: State Examinations Commission

The share (and number) of students taking foundation level Irish increased between 2007 and 2008: 11% of Irish candidates took foundation level examinations in 2008 compared to 10% in 2007.

4.4.4 Grades Obtained in English and Science Subjects

Table 4.4 compares the number and share of students obtaining a grade D or more in higher level papers in 2004 with those for 2008; Table 4.5 for ordinary level papers.

At higher level, there has been little change in the share of students obtaining a grade D or more over the five year period. Almost all students of higher level English and mathematics obtained at least a D in higher level English and maths (99% and 96% respectively in both years). There has been a slight increase, of two percentage points, in the share of chemistry candidates achieving a grade D but for biology and physics there has been a one percentage point decline each.

The pattern for ordinary level is slightly different. The pass rate for ordinary level biology grew strongly - by seven percentage points, but the pass rates in mathematics and chemistry declined (by one and five percentage points respectively).



Table 4.4 Higher Level Achievements; 2004 and 2008 Grades D or More

Higher Level	2004		2008	
	Grade D or higher	%	Grade D or higher	%
English	32,068	99%	31,402	99%
Maths	9,033	96%	8,128	96%
Physics	5,382	92%	4,501	91%
Chemistry	5,722	92%	5,565	94%
Biology	14,831	93%	16,869	92%

Source: State Examinations Commission

Table 4.5 Ordinary Level Achievements; 2004 and 2008 Grades D or More

Ordinary Level	2004		2008	
	Grade D or higher	%	Grade D or higher	%
English	19,724	97%	16,960	96%
Maths	33,472	89%	31,422	88%
Physics	2,067	89%	1,992	91%
Chemistry	930	91%	1,042	86%
Biology	6,603	82%	7,369	89%

Source: State Examinations Commission

Mathematics is the only science related subject offered at foundation level. Of the 5,803 foundation level sittings in 2008, 5,467 (94%) obtained a grade D or more.

When the achievements of mathematics candidates for each level combined is examined, the total number of D or higher grades is 45,017, giving an overall pass rate for Leaving Certificate mathematics of 90%. This implies that in 2008, approximately 5,100 candidates did not achieve a D grade or more in mathematics at any level. In 2004, the overall pass rate for mathematics was also 90%, with almost 5,100 obtaining less than a grade D. Although the overall pass rates for 2008 and 2007 are similar, a greater share of candidates took the foundation level paper in 2008 (12% in 2008 compared to 11% in 2007). Initial results from the 2009 Leaving Certificate examination indicate that the overall pass rate for mathematics has improved slightly to approximately 91%, with almost 4,500 students obtaining less than a grade D.

Research by the Expert Group on Future Skills Needs, outlined in the Statement on Raising National Mathematical Achievement (November 2008), has led to several policy proposals aimed at increasing the level of mathematical achievement and designed to complement the existing developments



underway within Project Maths⁹. The overall aim of these initiatives is to address the low level of mathematics achievement in Ireland which, as shown in the 2008 examination results above, seems to have 'remained stubbornly high' (Statement on Raising National Mathematical Achievement, page1) over recent years.

The policy proposals cover areas such as the provision of professional development for teachers in the teaching of mathematics, the development of a more interactive, imaginative approach to teaching mathematics, support for parents' role in their children's mathematics education, the development of a more coherent progression of mathematics learning, incentivising students to take mathematics at a higher level, among others.

4.4.5 Gender Distribution of the Top Ten Leaving Certificate Subjects, 2008

Total sits

Table 4.6 presents the gender breakdown of the top ten Leaving Certificate sits in 2008. In general, the gender distribution is similar to preceding years, with females outnumbering males in the majority of subjects. Males dominated only in history and geography. With the exception of chemistry, males outnumbered females in science subjects outside the top-ten: construction studies (93% are male), physics (75% male) and technical drawing (92% male).

Table 4.6 Gender Breakdown of Top-Ten Leaving Cert Sits, 2008

Subject	Total Sits	% Male	% Female
Mathematics	50,116	49%	51%
English	49,382	49%	51%
Irish	44,660	47%	53%
French	27,698	42%	58%
Biology	26,607	34%	66%
Geography	24,360	55%	45%
Business	18,733	47%	53%
Home Economics	12,497	11%	89%
History	11,850	56%	44%
Art	10,383	37%	63%

Source: State Examinations Commission

⁹ Project Maths is supported by the National Council for Curriculum and Assessment in collaboration with the Department of Education and Science and the State Examinations Commission.



Table 4.7 presents a gender breakdown of sits by level. At higher level, females outnumber males in seven of the top-ten Leaving Certificate subjects, with males dominating in mathematics (54% are male), history (54% male) and geography (55%). At ordinary level, males dominate in four subjects (English, Irish, geography and history). The gender gap is particularly pronounced for home economics with females making up more than four fifths of sits at both ordinary and higher level.

Table 4.7 Gender Breakdown of Sits at Higher and Ordinary Level, 2008

Subject	Higher Level	% Male	% Female	Ordinary Level	% Male	% Female
Mathematics	8,510	54%	46%	35,803	48%	52%
English	31,792	44%	56%	17,590	57%	43%
Irish	13,994	34%	66%	25,820	52%	48%
French	14,226	38%	62%	13,472	45%	55%
Biology	18,323	38%	62%	8,284	36%	64%
Geography	18,269	55%	45%	6,091	56%	44%
Business	12,154	47%	53%	6,579	47%	53%
Home Economics	8,753	8%	92%	3,744	18%	82%
History	7,601	54%	46%	4,249	60%	40%
Art	7,859	34%	66%	2,524	45%	55%

Source: State Examinations Commission

4.4.6 Gender Distribution of Leaving Certificate Achievements

Leaving Certificate achievements by males and females are compared in Table 4.8 (higher level) and Table 4.9 (ordinary level). In 2008, the share of females gaining grade D or higher is slightly greater than for males for each of the key subject areas except biology: the gap is just one percentage point for English and mathematics and two percentage points for physics and chemistry.

At ordinary level, females also consistently outperform males in key subject areas, although for maths, physics and chemistry the gap in achievement is larger, with a four percentage point difference for mathematics and physics and a five percentage point gap for chemistry.



Table 4.8 Gender Breakdown: Grade D or more in English, Mathematics and Science, 2008

	Higher Level				Difference (percentage point)
	Males		Females		
	≥D	(%)	≥D	(%)	
English	13,760	98%	17,642	99%	-1
Maths	4,393	95%	3,735	96%	-1
Physics	3,167	91%	1,334	93%	-2
Chemistry	2,325	93%	3,240	95%	-2
Biology	5,550	92%	11,319	92%	0

Source: State Examinations Commission

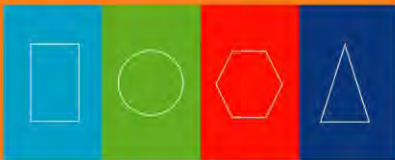
Table 4.9 Gender Breakdown: Grade D or more in English, Mathematics and Science, 2008

	Ordinary Level				Difference (percentage point)
	Males		Females		
	≥D	(%)	≥D	(%)	
English	9,594	96%	7,366	97%	-1
Maths	14,646	86%	16,776	90%	-4
Physics	1,639	91%	353	95%	-4
Chemistry	515	84%	527	89%	-5
Biology	2,658	88%	4,711	89%	-1

Source: State Examinations Commission

4.5 Leaving Certificate Results (LCA)

The LCA programme is comprised of a range of courses, each designed on a modular basis and delivered over four half-year sessions. Participants complete a total of 44 modules with eleven modules per session. The outcome of student assessment in the LCA is stated in the form of credits: a maximum of 200 credits can be gained by each student through a combination of successful completion of modules and the sitting of final examinations. Candidates are required to sit exams in the following subjects



- English and Communication
- Two vocational specialisms (e.g. agriculture/horticulture, engineering, childcare/community care, technology, hair and beauty, etc.)
- Mathematical Applications
- Languages (Irish and a modern European language)
- Social Education.

The Leaving Certificate Applied is awarded at three levels:

Pass	60-69%	(120-139 credits)
Merit	70-84%	(140-169 credits)
Distinction	85-100%	(170-200 credits)

Candidates who obtain less than 60% (120 credits) or who leave school prior to the completion of the programme receive a record of credits.

The LCA award holder is eligible to enter a range of Post-Leaving Certificate (PLC) courses, apprenticeships or courses offered by Fáilte Ireland. The PLC courses can lead to a Further Education and Training Awards (FETAC) level 5 award and in some cases a FETAC level 6 award. Students with the Leaving Certificate Applied cannot gain direct entry through the Central Applications Office (CAO) system to the universities or institutes of technology. However, those who hold a FETAC level 5 or 6 award can be eligible to apply for some third-level courses in higher education institutions (including universities, institutes of technology and private, independent colleges)¹⁰.

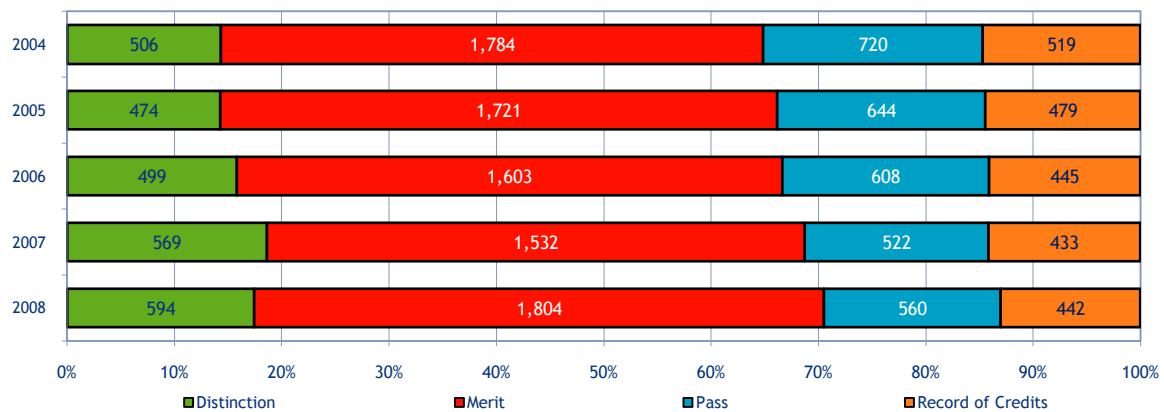
The numbers of students who received a pass, merit, distinction or Record of Credit in the LCA 2004 - 2008 are presented in Figure 4.4. In 2008, over one half of all LCA candidates received a merit; 17% received a distinction; approximately 16% received pass while the proportion of those with a Record of Credit fell slightly from 15% in 2003 to 13% in 2008.

There has been a slight shift towards higher attainment in results over the period 2004-2008: the share of LCA candidates who obtained either a Distinction or a Merit grew from 65% in 2004 to 70% in 2008. By contrast, the combined share of those achieving a Pass or a Record of Credit fell to 29% in 2008 compared to 35% in 2004.

¹⁰ In 2009, 18 higher education institutions operated the Higher Education Links Scheme where specific FETAC Level 5 and Level 6 awards are linked to reserved places on a variety of higher education undergraduate programmes. In addition, the Pilot Scheme, with a total of 23 participating higher education institutions, facilitates progression to higher education by leaving most course places open to FETAC applicants along with Leaving Certificate applicants.



Figure 4.4 Leaving Certificate Applied Results, 2004-2008



Source: State Examinations Commission

4.6 Leaving Certificate Points Achievement

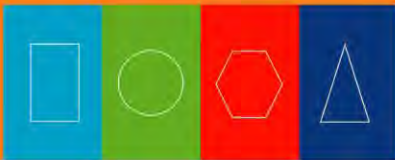
The Central Applications Office (CAO) undertakes the task of processing centrally the applications to undergraduate (levels 6, 7, and 8) courses at many of the higher education institutes in Ireland. Students wishing to follow a course at any of the participating institutions indicate to the CAO their course choices in order of preference. Places are subsequently offered on the basis of points calculated from a candidate's Leaving Certificate results.

The points system gives priority to students with the better performance. The six best results in recognised subjects are added up for points computation. In general, most subjects carry equal points and points are awarded for each grade as per Table 4.10 below. However, bonus points for higher level mathematics are awarded by University of Limerick. Dublin Institute of Technology also awards bonus points for mathematics and a number of science subjects in the case of certain level 8 courses. The Leaving Certificate Vocational programme Link Modules carry points as follows: Distinction = 70, Merit = 50, Pass = 30. The Link Module score can be substituted as one of a student's best six subjects but may not be counted in addition to the best six subjects.

Table 4.10 Leaving Certificate Grade Points

Grade	A1	A2	B1	B2	B3	C1	C2	C3	D1	D2	D3	<E
%	90-100	85-89	80-84	75-79	70-74	65-69	60-64	55-59	50-54	45-49	40-44	0-39
Higher Level	100	90	85	80	75	70	65	60	55	50	45	0
Ordinary Level	60	50	45	40	35	30	25	20	15	10	5	0

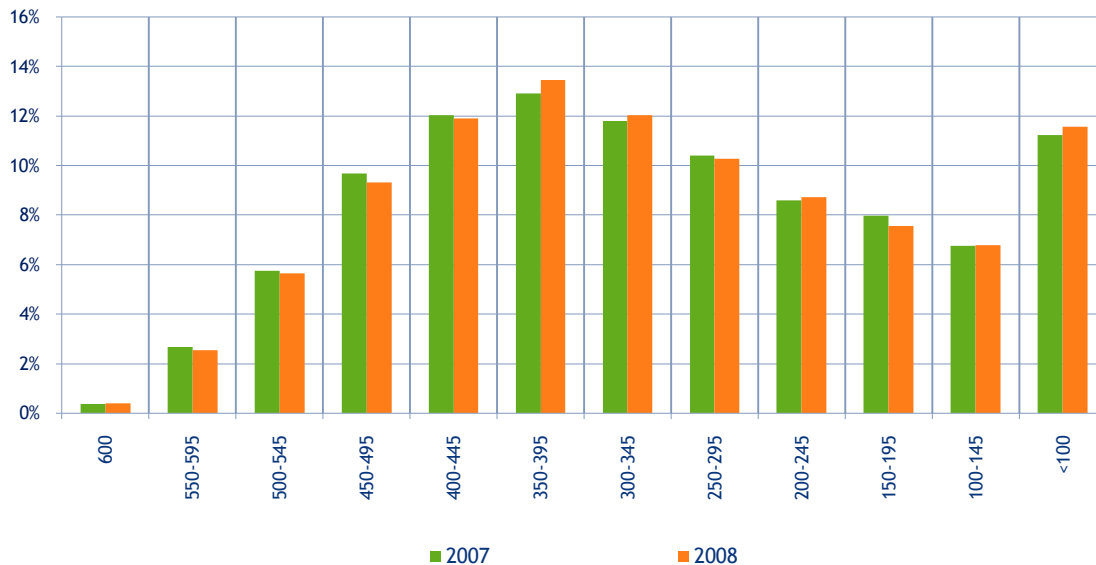
Source: CAO



The points achievements of Leaving Certificate candidates applying to the Central Applications Office (CAO) in 2008 and 2007 are compared in Figure 4.5. The data presented here refers to nominal points achievements only and does not take into consideration any bonus points that may have been awarded, for certain degree programmes, for subjects such as higher level mathematics. In general, the points distribution for CAO applicants in 2008 is not very different from that in 2007. The most noticeable difference is for candidates scoring between 350 and 395 points (approximately six C grades on higher level papers) which saw an increase of half a percentage point - an increase of 436 candidates in absolute terms. However, as the share of candidates obtaining scores in each of the points bands between 400 and 595 has declined slightly over the period 2007-2008, the total share with scores over 350 was 43% in both 2007 and 2008.

More than one half of all candidates scored 300 points or more. Top achievers, scoring 500 points or more (e.g. a minimum of one A1 grade plus five B2 grades), made up almost one tenth of CAO applicants in 2008. The proportion of students with less than 100 points (exaggerated on the scale by the results of external candidates who may only sit one subject) rose marginally.

Figure 4.5 Leaving Certificate Points Achievements, 2007-2008



Source: CAO



Chapter 5 Further Education and Training

Key Points

- More than 131,000 candidates obtained a FETAC award in 2008, a 2% increase on 2007; approximately 20% of candidates received major awards
- There was an increase for all award types, except Special Purpose awards, over the period 2007-2008
- More than half (55%) of all awards were made to females: males however dominate at level 6 (two thirds are male) while female recipients dominate at level 5
- More than a third of recipients are aged between 30 and 49 years
- Services and tourism accounted for more than a quarter of all FETAC awards in 2008
- The number of applicants to the CAO holding FETAC awards increased from 7,145 in 2007 to 7,244 in 2008
- Differences between 2007 and 2008 FETAC awards data include:
 - a shift towards an increased share of male recipients at level 6, which went from 58% of awards to 67% (due partly to increases in green economy/energy related courses, such as BER assessment, which are traditionally male dominated courses)
 - a shift towards a higher level of attainment for minor awards: the number of level 5 and 6 awards increased by 7,200
 - a decline in the number of special purpose awards, mainly at level 5 in the fields of engineering, manufacturing and construction; agriculture and veterinary; and services

5.1 Introduction

This chapter examines the supply of skills emerging from the sector in Ireland. Following a brief outline of the different types of certificate and their corresponding award types, further education and training awards data is examined in terms of number of awards, NFQ level, recipient profiles (gender and age), field of learning and provider types for (a) overall awards and (b), each of the four individual awards types: major, minor, special purpose and supplemental awards.

The Further Education and Training Awards Council (FETAC) is the national awarding body for further education and training (FET) in Ireland. FET awards have been placed across levels 1-6 on the NFQ. Learning outcomes associated with NFQ levels 1-6 are presented in Appendix B. FETAC makes four different award types as described below. On achieving an award, a candidate is issued with a relevant FETAC certificate.

- A **Certificate** is for a major award and is the principal class of award made at each level. It represents a significant volume of learning outcomes. A major award will prepare learners for



employment, participation in society and community and access to higher levels of education and training e.g. Level 5 certificate in childcare.

- A **Component Certificate** is issued on achieving one or more minor awards which are derived from and linked to at least one major award. Achievement of a minor award provides for recognition of learning that has relevance and value in its own right e.g. word processing, health and safety at work. In this chapter, minor awards data has been disaggregated from their respective component certificates in order to fully analyse the learning involved.
- A **Specific Purpose Certificate** (for a special purpose award) is made for specific relatively narrow purposes. It does not have to link to a major award e.g. environmental inspection skills.
- A **Supplemental Certificate** (for a supplemental award) is an award made to recognise learning which involves updating/up-skilling and/or continuing education and training with specific regard to occupations e.g. gas installation.

There are almost 700 providers (incorporating approximately 1,400 separate centres) nationwide that offer programmes leading to FETAC awards. These providers include Bord Iascaigh Mhara (BIM), Fáilte Ireland, FÁS, Teagasc, Vocational Education Committees (VECs), institutes of technology, adult and community education and training centres, a range of private providers, and the workplace. The education and training provided ranges from short courses to longer programmes including apprenticeships.

5.2 Overview of Awards Data

Although FETAC has produced awards data on an annual basis since 2001, due to a comprehensive re-classification of certain awards, the baseline data for comparison purposes is 2007. In the section that follows, an analysis of FETAC data is presented, looking first at overall awards (all types) by variables such as, candidate and award numbers, recipient age, recipient gender, field of learning and provider type. Data for individual award types is then examined in greater depth.

Table 5.1 shows the number of FETAC awards and candidates for 2007 and 2008, broken down by award type. The number of awards and candidates increased for each award type, except Special Purpose awards. Approximately, 131,000 candidates achieved almost 220,000 FETAC awards (all types) in 2008. This represents a 2% increase in the total number of candidates receiving FETAC awards (an additional 2,470 candidates) for 2008 compared with the preceding year but a 2% decline in the number of awards made (approximately 4,000 fewer awards). This indicates that, compared to 2007, fewer candidates, on average, received more than one award in 2008.

In terms of candidates in 2008, almost three quarters achieved minor awards; a fifth achieved major awards; 13% specific purpose awards and the remaining 1% supplemental awards¹¹. In terms of awards made, more than 80% of awards were minor awards; 11% were major awards; 8% specific

¹¹ These shares do not sum up to 100% as candidates may receive more than one type of award (e.g. a candidate may receive a major and a minor award).



purpose awards and a negligible share were supplemental awards. These distributions are broadly similar to that of 2007.

Table 5.1 Awards by Type and Candidate, 2007-2008

Award Type	2007		2008	
	Awards	Candidates	Awards	Candidates
Major	22,759	22,689	24,429	24,429
Minor	176,321	87,662	177,228	93,910
Special Purpose	24,157	20,290	17,176	17,176
Supplemental	456	456	717	717
TOTAL	223,693	128,624*	219,550	131,089*

*Note: the number of candidates does not sum up as some candidates may obtain more than one award type.

Source: FETAC

5.2.1 Awards by Level

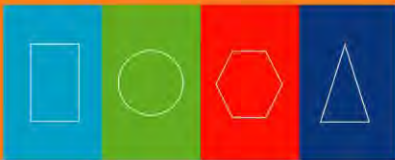
Table 5.2 provides a breakdown of the overall number of awards made by NFQ level for 2007 and 2008. Approximately one half of all awards in 2008 were made at level 5, amounting to over 108,000 awards. Levels 3 and 4 each accounted for a fifth of the total, each amounting to more than 40,000 awards. The remainder was predominantly at level 6 (11%) with a negligible share at levels 1 and 2.

There has been little change in the distribution of awards by level since 2007 with the exception of the inclusion of level 1 and 2 awards for the first time in the 2008 awards data. In absolute terms, however, there has been a notable increase in the number of level 6 awards (+40% between 2007 and 2008) despite the overall decline in the total number of FETAC awards made between 2007 and 2008. The increases are largely a result of significant rises in the number of awards made for courses related to the renewable energy and green economy sectors, e.g building energy rating (BER) assessment (+2,900 awards) and solar domestic hot water systems (+1,400 awards).

Table 5.2 FETAC Awards by NFQ Level, 2007 & 2008

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Total
2007	-	-	45,445	47,982	113,545	16,721	223,693
2008	99	502	43,834	43,247	108,324	23,544	219,550

Source: FETAC

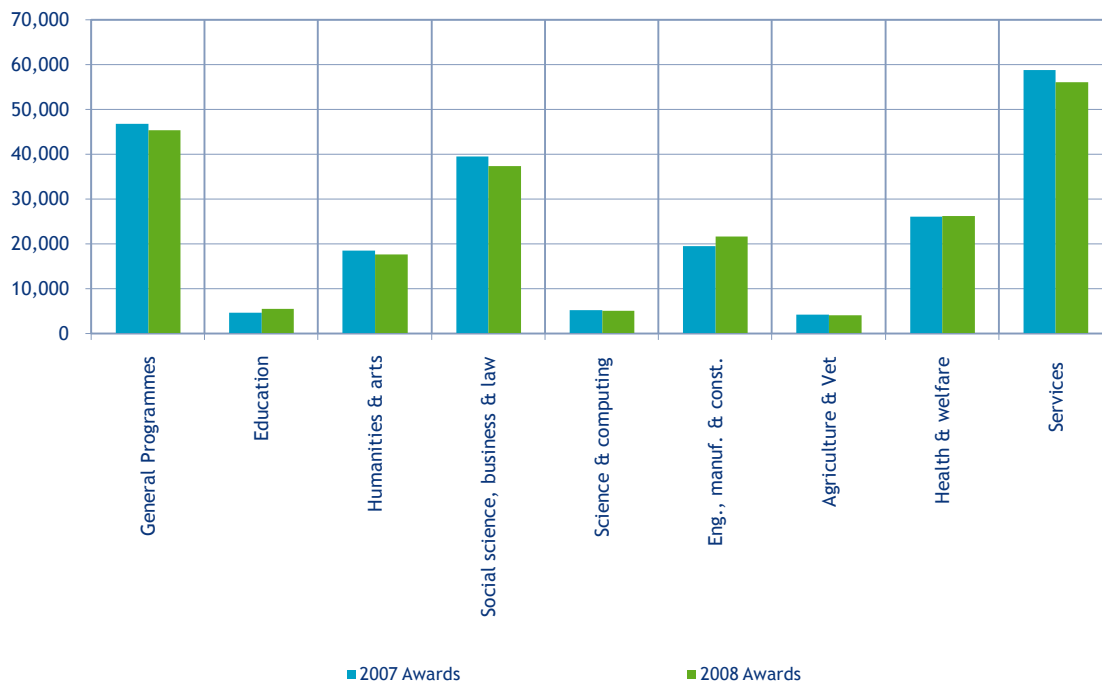


5.2.2 Awards by Field of Learning

Figure 5.1 outlines the fields of learning in which FETAC awards were made in 2007 and 2008. In 2008, awards in services and tourism made up more than a quarter of all FETAC awards, totalling more than 56,000. Awards for general programmes made up the second largest field of education and amounted to just over a fifth of the total with approximately 46,000 awards. Social science, business and law had the third highest share of awards with almost 37,500, or 18%.

The distribution of FETAC awards by field of education is consistent with that of 2007. Nonetheless, declines in absolute numbers were observed across most fields, in line with the overall decline in awards numbers between 2007 and 2008. Exceptions include an additional 2,000 awards in engineering, manufacturing and construction, and 841 more awards in education when compared to 2007.

Figure 5.1 FETAC Awards by Field of Learning, 2007 and 2008



Source: FETAC

5.2.3 Awards Recipients by Gender

Table 5.3 shows the share of awards made to females, by level, in 2007 and 2008. In 2008, level 6 awards were skewed towards male recipients with more than two thirds of the total at this level. By contrast, just under two thirds of level 5 awards went to female recipients.

The most notable difference between the 2007 and 2008 gender distribution of FETAC awards is the shift towards an increased share of male recipients at level 6 which went from 58% of awards to 67%



over the period due to increases in green economy/energy related courses, such as BER assessment, which are traditionally male dominated courses). The female share of awards increased marginally by two percentage points at levels 4 and 5.

Table 5.3 Awards Recipients by Level and Gender, 2007 and 2008

	Level 1		Level 2		Level 3		Level 4		Level 5		Level 6		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2007	-	-	-	-	37%	63%	58%	42%	39%	61%	58%	42%	44%	56%
2008	65%	35%	65%	35%	40%	60%	56%	44%	37%	63%	67%	33%	45%	55%

Source: FETAC

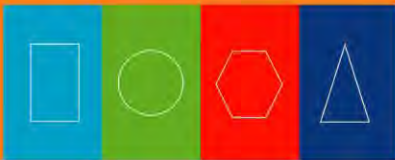
5.2.4 Awards Recipients by Age Group

The distribution of FETAC awards by age group, detailed in Table 5.4, remained largely unchanged between 2007 and 2008. Awards recipients are predominantly in the younger age cohorts with almost half of recipients aged less than 30 each year. More than a third of recipients are aged between 30 and 49 years.

Table 5.4 FETAC Awards by Type and Age, 2008

	≤ 19	20-24	25-29	30-49	50-65+	n/a
2007	18%	17%	13%	36%	12%	5%
2008	18%	17%	13%	37%	12%	3%

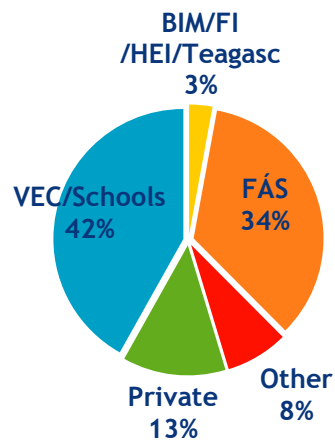
Source: FETAC



5.2.5 Awards by Provider

Figure 5.6 illustrates the overall distribution of awards made in 2008 by the main provider types¹². Overall, VECs/Schools are the largest provider type with over 86,000 awards (40% of the total). This is followed by FÁS which had a 35% share of all awards. The distribution of awards by provider type is very similar to that of 2007.

Figure 5.1 Total FETAC Awards by Selected Provider Type, 2008*



*Some providers have been grouped (BIM, Fáilte Ireland, Teagasc and Higher Education Institutions)

Source: FETAC

5.3 Major Awards

More than 24,400 candidates received major awards in 2008, representing an 8% increase (or an extra 1,740 candidates) when compared to 2007. All 2008 candidates, and most 2007 candidates, received one major award.

Award level: In 2008, more than a half (58%) of all major awards were made at level 5 and more than a quarter (29%) at level 6. The combined share of level 1 and 2 major awards amounted to less than 1%. The overall distribution of major awards by level in 2007 and 2008 did not differ significantly, although in absolute terms there were an additional 1,670 awards in 2008 as compared with 2007, primarily at levels 5 or 6.

¹² The data in this section refers to the body/trainer that provided education and training; it does not reflect the funding provider and therefore may underestimate the provision level of some organisations while overestimating that of others.



Gender: More than half (56%) of all major awards were made to females. However, the gender distribution of major awards by level is slightly different: males dominated at level 6 with over 85% of major awards. Females, by contrast dominated at level 5 with three quarters of all major awards at this level. Awards made at levels 3 and 4 were mostly for female candidates (56-58% each) while two thirds of the major awards made at levels 1 and 2 were made to males.

Age profile: Major awards recipients are skewed towards the younger age cohorts. Over a half (54%) were made to recipients aged less than 25. An additional 12% of awards were made to recipients aged 25-29 years.

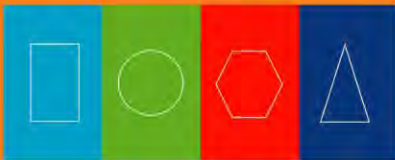
Field of learning: The largest number of major awards was in health and welfare, reaching almost 6,500, most of which were made at level 5. The second highest share was in engineering, manufacturing & construction which had just fewer than 6,000 awards in 2008, mostly at NFQ level 6 (e.g. Craft - Construction Plant Fitting). Social science, business and law accounted for 18% of all major awards.

Table 5.5 Major Awards by Field of Education and NFQ level, 2008

Field of Learning	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Total
General programmes	12	53	969	187	136	-	1,357
Education	-	-	-	-	10	-	10
Humanities and arts	-	-	-	-	1,657	134	1,791
Social science, business & law	-	-	448	249	3,583	294	4,574
Science & computing	-	-	-	-	372	89	461
Engineering, manufacturing & construction	-	-	-	71	471	5,050	5,592
Agriculture & Vet	-	-	-	59	636	420	1,115
Health & welfare	-	-	-	12	6,205	236	6,453
Services	-	-	-	1,199	1,126	751	3,076
Total	12	53	1,417	1,777	14,196	6,974	24,429

Source: FETAC

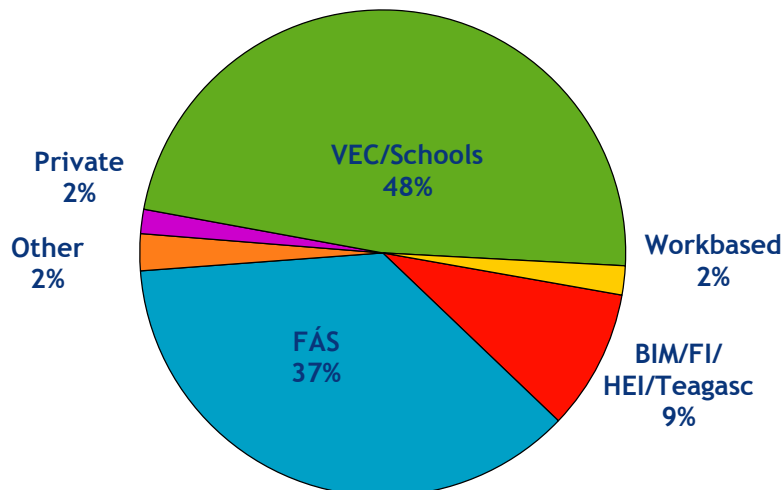
Progression to higher education: Holders of FETAC major awards are eligible to apply, through the Central Applications Office (CAO), for a limited number of places at higher education institutions using their FETAC award, rather than Leaving Certificate results, to compute points. The number of applicants to the CAO with FETAC awards increased from 7,145 in 2007 to 7,244 in 2008; a breakdown is not available for 2008, but in 2007 4,016 of those who accepted a place on a higher education programme were holders of a FETAC award, amounting to approximately 10% of all CAO acceptors that year. It should be noted, however, that FETAC award holders do not necessarily obtain a place on the basis of their FETAC award alone; some FETAC award holders apply on the



basis of Leaving Certificate results or on a combination of Leaving Certificate results and their FETAC award.

Provider type: Almost one half of major awards were made for programmes of study provided VEC/School centres; over a third at FÁS centres; a combined total of 9% of major awards were made for programmes provided at BIM, Fáilte Ireland (FI)/Higher Education Institutions (HEIs) and Teagasc. There were no significant changes over the period 2007-2008 in the distribution of major awards by provider type.

Figure 5.2 Major Awards by Provider Type, 2008



Source: FETAC

5.4 Minor Awards

Over the period 2007-2008, the number of candidates receiving minor awards rose by 7%, going from 87,662 in 2007 to 93,910 in 2008. On average, candidates received two minor awards each.

Award level: The largest share of minor awards was at level 5 (45% or approximately 80,000 awards) with level 3 and 4 each making up a further quarter share (over 40,000 awards each). Level 6 awards accounted for 8% of all minor awards while awards at level 1 and 2 made up less than 1%.



Despite the increase in the number of minor awards recipients (detailed in Table 5.1), there was very little change in the number of minor awards made (+1%). Nonetheless, there has been a shift towards a higher level of attainment, with the number of awards made at levels 5 and 6 increasing (by 7,200) and the number of awards made at levels 3 and 4 declining (6,900 fewer awards in 2008). Although comparatively small in number, minor awards were made at level 1 and 2 for the first time in 2008.

Gender: Approximately 60% of minor awards were made to female recipients; however, while males dominated at level 6, the reverse occurred at level 5 where 72% of awards recipients were female.

Age profile: Minor awards were mainly made to recipients in the younger age cohorts; almost half (44%) of awards were made to recipients aged less than 25 years with a further 13% aged between 25 and 29.

Field of learning: As shown in Table 5.6, over one quarter of minor awards were made for courses in services and tourism (including courses in sport and recreation and private security services), amounting to over 46,500 in 2008. Most minor awards in services and tourism were made at level 4. General programmes (e.g. courses in communications and computer literacy) had the second largest share of minor awards with more than 44,000, over half of which were made at level 3.

Table 5.6 Minor Awards by Field of Learning and Level, 2008

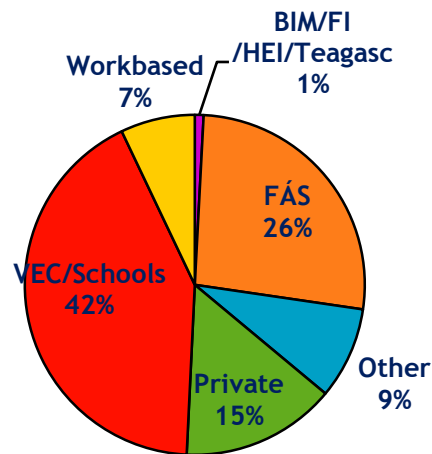
Field of Learning	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Total
General programmes	68	393	24,992	5,342	12,508	712	44,015
Education	-	-	-	6	3,133	2,208	5,347
Humanities and arts	13	7	5,947	2,119	6,575	1,239	15,900
Social science, business & law	6	49	2,807	8,705	18,905	1,300	31,772
Science & computing	-	-	1,382	355	2,125	850	4,712
Engineering, manufacturing & construction	-	-	1,090	386	3,061	2,347	6,884
Agriculture & Vet	-	-	869	203	1,115	120	2,307
Health & welfare	-	-	787	825	17,063	1,102	19,777
Services	-	-	4,543	23,031	15,041	3,899	46,514
Total	87	449	42,417	40,972	79,526	13,777	177,228

Source: FETAC

Provider type: Most minor awards were made to those completing programmes at VEC/School or FÁS centres: VEC/Schools accounted for 42% of minor awards; FÁS for just over one quarter. Over the period 2007-2008, the share of awards made for programmes undertaken at privately provided FET grew from 5% to 15%; there was a decline in the share of work-based provided training, which went from 13% of minor awards to 7% of awards.



Figure 5.3 Minor Awards by Provider Type, 2008



Source: FETAC

5.5 Special Purpose Awards

Almost 17,200 candidates received Special Purpose Awards in 2008, representing a 15% decline on the previous year. The total number of special purpose awards made declined by more than a quarter over the same period, going from 24,200 to 17,200. This was the only award type to experience a decline in candidate or award numbers between 2007 and 2008.

Award level: Special purpose awards were made at levels 4, 5 and 6 only, accounting for 6%, 85% and 12% of the total, respectively. The overall decline in the number of Special Purpose awards which occurred over the period 2007-2008 was due almost entirely to a fall of 7,000 in the number of level 5 special purpose awards,. The number of awards at level 4 and level 6 increased slightly over the same period, but due to their comparatively small share, this was not sufficient to counteract the negative impact of the decreases at level 5.

Gender: The vast majority of special purpose awards recipients were male accounting for 95% of the total in 2008. When individual levels are examined, males dominate at each level but particularly so at level 5 (98% of recipients were male). The gender profile of special purpose awards recipients did not differ significantly between 2007 and 2008 with the exception of level 4 where the male share increased from 76% to 86%.

Age profile: more than one half of special purpose awards recipients were aged between 30 and 49 years; more than a third were aged less than 30. When compared to 2007, the 2008 data shows a



slight shift towards older age groups receiving special purpose award: in 2007, 40% were aged less than 30 while 47% were aged 30-49.

Field of learning: Approximately one half of special purposes awards were made primarily in engineering manufacturing and construction; a further 38% were in services (e.g. Bar specialisation). When compared to 2007, declines were observed mainly across three fields: engineering, manufacturing and construction; services; agriculture and veterinary.

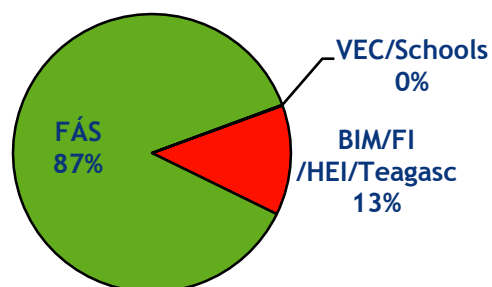
Table 5.7 Special Purpose Awards by Level, 2008

Field of Learning	Level 4	Level 5	Level 6	Total
Education	-	-	239	239
Humanities and arts	-	12	-	12
Social science, business & law	-	12	1,020	1,032
Science & computing	-	-	7	7
Engineering, manufacturing & construction	39	8,075	419	8,533
Agriculture & Vet	26	544	163	733
Health & welfare	-	-	52	52
Services	433	5,959	176	6,568
Total	498	14,602	2,076	17,176

Source: FETAC

Provider Type: Figure 5.4 details special purpose awards by provider type and shows that special purpose awards are made primarily on completion of courses at FÁS centres, with most of the remainder made up of courses undertaken at Bord Iascaigh Mhara, Fáilte Ireland, Higher Education Institutions or Teagasc centres.

Figure 5.4 Special Purpose Awards by Provider Type, 2008



Source: FETAC



5.6 Supplemental Awards

Although supplemental awards form the smallest awards category made by FETAC, there was a significant increase, in terms of awards and candidates, between 2007 and 2008. Candidate and award numbers increased by more than a half and reached 717 in 2008 compared to approximately 450 in 2007.

In 2008, as in 2007, all supplemental awards were made at level 6, primarily for courses in domestic gas installation, safety in gas installation and solar heating systems. All supplemental awards were achieved by those attending FÁS centres.



Chapter 6 Higher Education - Level 7/6

Key Points

- **CAO Acceptances:** approximately 12,400 people accepted places on level 7/6 courses in 2008, a 3% increase compared to 2007 but 5% lower than in 2004
- **Graduate Output:** the number of level 7/6 graduates is declining: the total for 2007 was 15,600 - a fall of 3% since 2006 and 12% since 2003
- **Outlook:** graduate output at this level is expected to continue to decrease in the short term due to declines in CAO acceptances observed between 2005 and 2007; thereafter, however, due to increases in CAO acceptances in 2008 and again in 2009, the declining trend may be halted
- **Science:** the declining trend in the number of graduates observed over the period 2005-2006 has persisted; the number of science graduates was almost one fifth lower in 2007 than in 2006; increases in graduate output are unlikely in the short term as CAO acceptances declined each year over the period 2006-2008
- **Computing:** the number of acceptances for computing courses increased by almost 13% over the period 2007-2008 which should lead to a moderate increase in the number of computing graduates in the short-term; the increase however will not be sufficient to counteract the 29% decline in computing graduates observed over the period 2006-2007
- **Engineering and manufacturing:** the number of CAO acceptances increased by 9% between 2007 and 2008 - the first increase observed since 2005-2006; this is expected to reverse the decline in graduate output observed since 2005
- **International comparison:** Ireland was ranked second only to Japan in terms of the number of level 7/6 graduates in 2006

6.1 Introduction

The focus of this chapter is on higher education programmes that lead to awards placed at level 6 and 7 on the National Framework of Qualifications. Programmes leading to level 6 and 7 awards are provided by both the university and institute of technology sectors of the higher education system. Level 6 awards include higher certificates and level 7 awards, ordinary degrees. Learning outcomes associated with awards at levels 6 and 7 are detailed in Appendix B. As data relating to level 6 and 7 programmes does not always allow a distinction between the two levels, they are combined for the purposes of this report.

First, an overview of acceptance data from the Central Applications Office (CAO) for level 7/6 programmes is presented, followed by output data for both universities and institutes of technology. A summary of the findings of the HEA's First Destination Survey (FDS) is then provided. In the final section, Ireland's graduate output is compared with that of other OECD countries.



6.2 CAO Acceptances

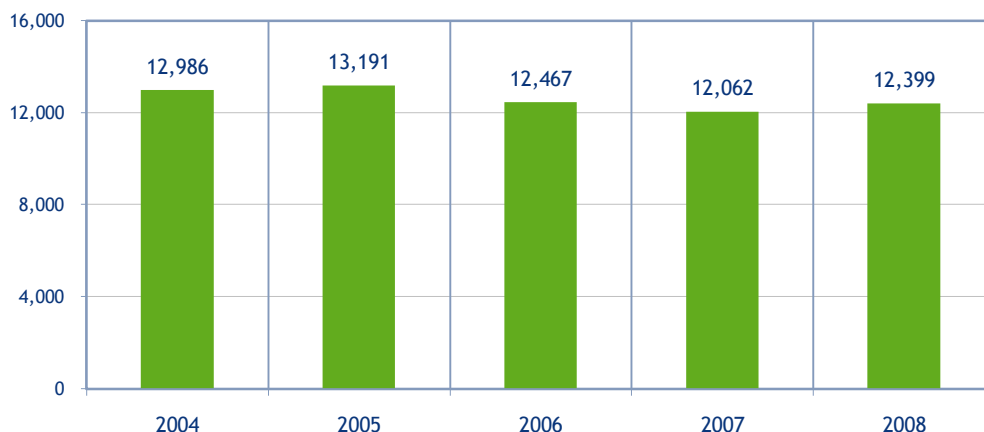
The higher education institutions in the Republic of Ireland have delegated to the Central Applications Office (CAO) the task of processing centrally applications to their first year undergraduate courses. The majority of those entering higher education at levels 7/6 apply for their desired courses through the Central Applications Office (CAO). Some foreign and some mature students can bypass the CAO and apply directly to the education provider.

CAO course acceptances are not the same as student enrolments. Some acceptors do not enrol and some seek deferment. Nonetheless, they are a good indicator of the number of first year entrants to programmes at these levels.

The total number of CAO level 7/6 acceptances from 2004 to 2008 is outlined in Figure 6.1. At 12,400, the number of acceptances at this level in 2008 is slightly greater than in 2007 (+3%), but nonetheless represents a 5% decline when compared to 2004 when acceptances reached almost 13,000. Although there have been some fluctuations, the overall trend in the number of level 7/6 acceptances has been one of decline to the extent that the numbers in 2008 were 25% lower than in 2000 - a decline of over 4,000 acceptances in absolute terms. Declines observed in the number of level 7/6 acceptances in recent years are due to two major factors - the increase in those applying for level 8 courses and the decline in the size of the school-leaving age cohort. Provisional acceptance data for 2009, however, points to a reversal of this trend, with a 13% increase in the number of acceptances for level 7/6 programmes, resulting in more than 1,500 additional acceptances for 2009 compared to 2008.

Level 7/6 acceptances in 2008 were mostly for male students: 61% of acceptors were male; 39% female. Five years previously, in 2004, 56% of acceptors were male.

Figure 6.1 CAO Acceptances for Level 7/6 Programmes, 2004-2008



Source: CAO



Table 6.1 presents the distribution of level 7/6 acceptances by discipline. The distribution in 2008 was similar to that of preceding years: approximately one half of acceptances are in the 'other' category; over 40% are for technology related subjects with the remainder for health, veterinary or agriculture courses.

Overall, the number of acceptances in 2008 for technology related courses was largely on a par with that of 2007 and 2004, amounting to over 5,300 each year. This, however, hides variations in acceptances for disciplines within the broad category: the number of construction acceptances, for example, declined by almost a fifth (18%) between 2007 and 2008 and by 15% since 2004. These declines in construction acceptances, together with increases for engineering and manufacturing courses (+9% since 2004 and +15% since 2007), means that for the first time the number of engineering and manufacturing course acceptances exceeded that for construction: engineering and manufacturing in 2008 totalled 1,838 compared to 1,695 for construction.

Although there was a 13% increase in computing course acceptances between 2007 and 2008, the number for 2008 (952) remains below that observed in 2004 (985) - a decline of 3.4%.

Health, veterinary and agriculture course acceptances have increased by 29% since 2007 and by 12% since 2004. The number of acceptances for programmes in the 'other' category totalled 6,257 in 2008, representing a 3% increase since 2007 but almost a 10% fall since 2004. One of the most significant declines was in arts and humanities which declined by almost 17% between 2007 and 2008 and by more than a quarter since 2004; although acceptances for business and law increased between 2007 and 2008, at 3,292, they remain almost 20% below the 2004 total of 4,083.

At the time of writing, provisional level 7/6 acceptance data shows that there were 80 fewer acceptances for architecture courses (a 24% decline) and 54 fewer acceptances for courses relating to the built environment (-22%). On the other hand, there were increases for, among others, engineering and technology courses (+656 acceptances, or 17%), science/applied science (+391, or 33%) and administration and business (+498, or 12%).

Table 6.1 Level 7/6 CAO Acceptances, 2004, 2007 & 2008

Discipline Level 7/6	Acceptances 2004	Acceptances 2007	Acceptances 2008	% Change 2008-07	% Change 2008-04
Engineering & manufacturing	1,684 (12.9%)	1,602 (13.3%)	1,838 (14.8%)	14.7%	9.1%
Construction	1,995 (15.3%)	2,061 (17.1%)	1,695 (13.7%)	-17.8%	-15.0%
Computing	985 (7.5%)	845 (7.0%)	952 (7.7%)	12.7%	-3.4%
Science (non healthcare)	661 (5.4%)	840 (7.0%)	833 (6.7%)	-0.8%	26.0%
Total Technology	5,325 (41.1%)	5,348 (44.3%)	5,318 (42.8%)	-0.6%	-0.1%
Healthcare	338 (2.0%)	312 (2.6%)	384 (3.1%)	23.1%	13.6%



Agriculture & Vet	398 (2.9%)	327 (2.7%)	440 (3.6%)	34.6%	10.6%
Total Health, Vet & Agriculture	736 (4.9%)	639 (5.3%)	824 (6.7%)	29.0%	12.0%
Arts and Humanities	1,166 (9.8%)	1,002 (8.3%)	835 (6.7%)	-16.7%	-28.4%
Business and Law	4,083 (31.2%)	3,184 (26.4%)	3,292 (26.6%)	3.4%	-19.4%
Education	0 (0%)	38 (0.3%)	114 (0.92%)	200%	-
Social Services	647 (4.7%)	669 (5.5%)	809 (6.5%)	20.9%	25.0%
Services	1,029 (8.4%)	1,182 (9.8%)	1,207 (9.7%)	2.1%	17.3%
Total Other	6,925 (53.3%)	6,075 (50.4%)	6,257 (50.5%)	3.0%	-9.6%
Total All	12,986 (100%)	12,062 (100%)	12,399 (100 %)	2.8%	-4.5%

Source: CAO

6.3 Level 7/6 Graduate Output by Provider Type and Gender

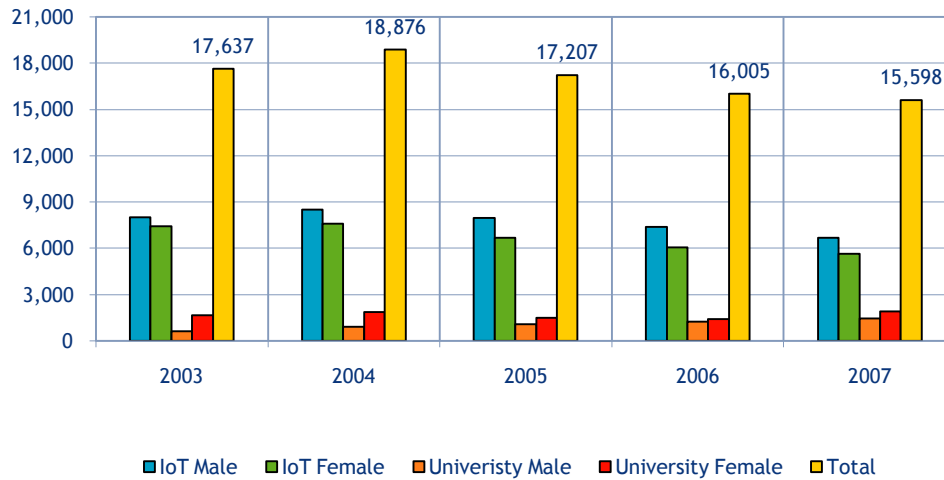
The number of level 7/6 graduates, broken down by provider type and gender, is presented in Figure 6.2. The total number of level 7/6 graduates was 15,600 for 2007 representing a 3% decrease since 2006 and a 12% decrease since 2003. The decline in output at this level is linked mostly to the decline in the number of CAO acceptances observed in preceding years. There are indications, however, that the declining trend has slowed, with the drop in graduates between 2006 and 2007 being less than half of what it was in the past (3% as opposed to 8% on average annually between 2004 and 2006).

The institutes of technology (IoTs) are the major providers of level 7/6 education and in 2007 almost four fifths of all level 7/6 awards were made to graduates from the IoT sector. Nonetheless, the share of level 7/6 awards in the university sector has increased over the past five years, going from 13% in 2003 to 21% in 2007, due largely to increased course provision at level 7 in universities.

The gender balance of level 7/6 graduates has shifted somewhat over the five year period. In 2003, there were slightly more female than male graduates at this level (51% vs 49%) but by 2006 males made up 54% of the total and females just 46%. Although the 2007 data shows a slight decline in the share for males (down one percentage point between 2006 and 2007), they continued to outnumber females. The fall in female share is due to a decline in female graduates from the IoT sector since the female share of graduates in the university sector has actually increased by 15% since 2003. The university sector level 7/6 graduates have a greater share of females (57% are female); males dominate amongst graduates in the IoT sector at this level (54% are male).



Figure 6.2 Level 7/6 Output by Provider type and Gender, 2003-2007



Source: HEA, IoTs (to 2006)

6.4 Level 7/6 Graduate Output by Discipline

Table 6.2 provides a discipline breakdown of level 7/6 awards for 2006 and 2007. The highest number of graduates in 2007 was for social science, business and law which, with over 5,000 graduates, amounted to over a third of all graduates at this level; the combined total of technology graduates had the second largest share of level 7/6 graduates and made up 30% of the total. This marks a change from the 2006 data where the distribution of level 7/6 graduates was reversed, with technology graduates holding the higher share (34%) followed by social science, business and law graduates with 32%.

Over the period 2006-2007, declines were observed for the majority disciplines. Overall, graduations in technology related subjects decreased by 16% resulting in 863 fewer technology graduates for 2007 when compared to 2006. Within this group the number of science graduates fell by almost a fifth going from over 760 in 2006 to less than 620 in 2007; the number of computing graduates fell by more than a quarter over the same period - there were 643 computing graduates in 2007 which is more than 250 fewer than 2006. Declines of in excess of 200 graduates each were also observed for engineering and manufacturing and for construction.

Other subject areas for which there was a decline in graduate numbers between 2006 and 2007 included education (which fell by almost a third), and health and welfare (-3%) and social sciences business & law (-1%).

However, despite the overall downward trend in most subject areas, the number of graduates rose in three areas: services (which includes courses in tourism, for example) increased by a fifth and



totalled over 2,200 in 2007; arts and humanities increased by 14% and agriculture and veterinary rose by 11%.

Approximately 60% (9,340) of all awards at this level were for level 7 programmes.

Table 6.2 Level 7/6 Graduate Output by Discipline, 2006-2007

Discipline	2006	2007	% Change 2006-07
Engineering & manufacturing	1,654	1,440	-13%
Construction	2,178	1,932	-11%
Computing	900	643	-29%
Science	762	616	-19%
Total Technology	5,494	4,631	-16%
Agriculture/Veterinary	401	445	11%
Health & Welfare	1449	1407	-3%
Total Health, Vet & Agriculture	1,850	1,852	0%
Arts & Humanities*	1,485	1,696	14%
Education	226	155	-31%
Social Sciences, Business & Law	5,095	5,036	-1%
Services	1,855	2,228	20%
Total Other	9,236	9,955	8%
Total All	16,005	15,598	-3%

*Also includes studies in general and combined fields

Source: HEA, IoTs (2006)

Over 30% of level 7/6 awards in 2007 were made to those who had followed part-time courses (including distance education). Level 6 programmes had a slightly higher share of part-time graduates (34%) compared to level 7 programmes (28%). Overall, part-time students obtained awards mainly in social science, business and law (24%), services (20%) and humanities and arts (18%). Part-time students received more than one half of the total level 7/6 awards in education, 48% of the awards in humanities and arts and 39% of awards in health and welfare.

6.5 First Destination

Following the completion of level 7/6 courses, graduates have a number of options available including entering the workforce, continuing to further study/training or seeking employment abroad. In order to assess the extent to which graduates avail of these options, the HEA conducts an



annual survey on the first destination of graduates from higher education in the nine months following graduation (What Do Graduates Do? The Class of 2006). The results of this survey allow for the estimation of the following:

- the difference between the potential and actual supply of labour from level 7/6 education
- the progression of graduates through the education system
- the success of securing employment following graduation.

Almost three quarters (73%) of level 7/6 graduates opted to pursue further study at advanced levels in 2006. This reflects the high share of students who progress through the 2+1+1 education route: this route allows students who complete a two year certificate course (level 6) to move on to a one year ordinary bachelor degree (level 7) and then to spend a further year (or 2 years in some cases) to obtain an add-on honours bachelor degree (level 8). The share of graduates in further education and training in 2006 (73%) was broadly similar to that of 2003 (74%).

Almost one quarter of level 7/6 graduates gained employment in 2006; 2% were not available for employment or study with a further 2% seeking employment.

6.6 International Comparison

For the purposes of comparing Ireland's performance at this level internationally, this section examines the OECD survey of education entitled Education at a Glance 2008 which provides the results of an annual survey of education in over 40 participating countries. To date, no cross-classification of NFQ award levels and OECD data (which is classified according to ISCED levels) is available and a direct comparison between graduate output at level 7/6 and international data will only be approximate. However, ISCED Tertiary Type B education is defined as shorter (2-3 years) vocationally orientated third level courses and thus corresponds broadly to certificate and ordinary degree-level education in Ireland.

Figure 6.3 presents the graduation rates from Tertiary Type B programmes for selected OECD countries in 2006. As in recent years, Ireland was ranked second only to Japan in terms of the number of graduates to the population at this level. At 27.1%, the share of the population with Tertiary Type B qualifications in 2006 is approximately three times higher than the OECD and EU 19 averages. It should be borne in mind, however, that not all OECD countries have education programmes leading to qualifications at this level.

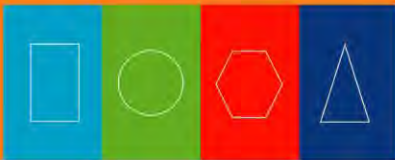
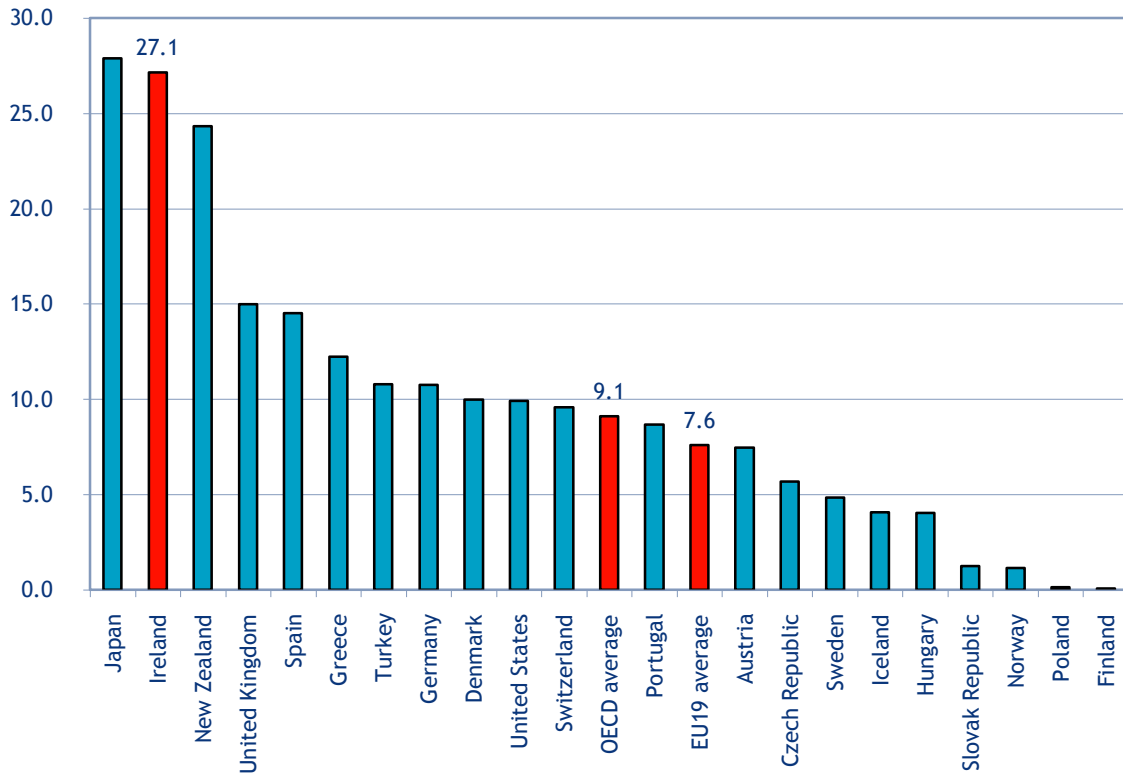


Figure 6.3 Tertiary Type B Graduation Rates for Relevant Age Cohorts in Selected OECD Countries, 2006



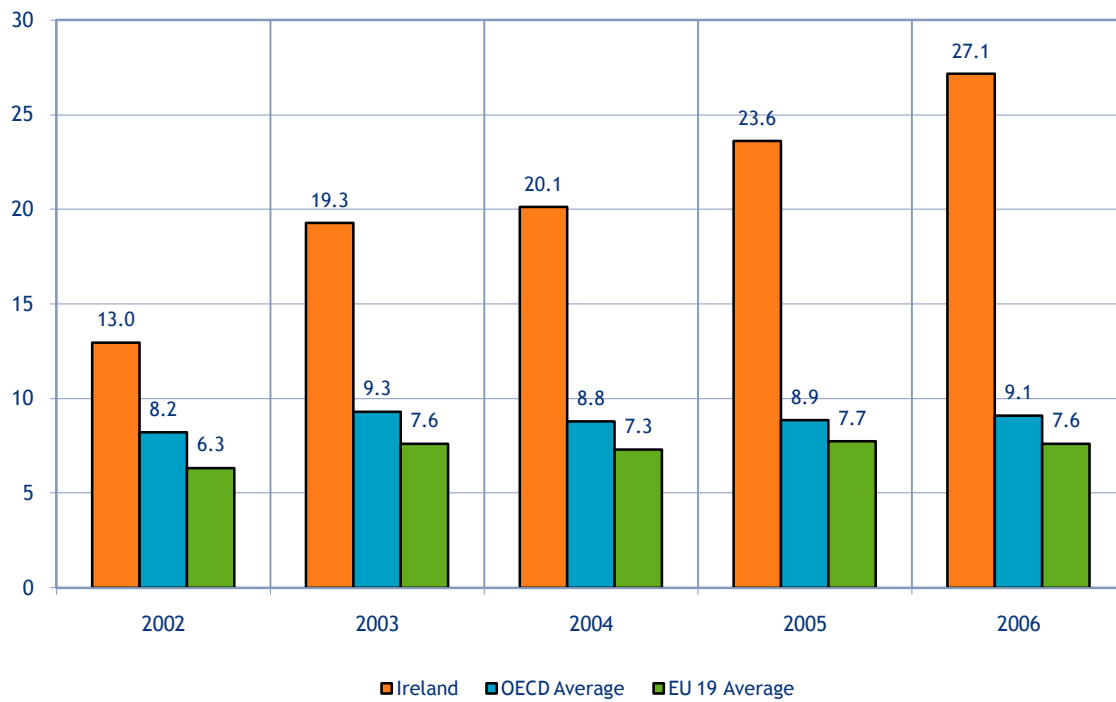
Source: OECD (EAG 2008)

Figure 6.4 compares Ireland's performance in terms of graduation rates at this level with the OECD and EU19 averages for the period 2002-2006. Ireland has consistently performed well above the OECD in terms of the number of graduates at this level. Furthermore, the profile for Ireland over the 2002-2006 period is different from the EU19 and OECD profiles. The graduation rate for Ireland increased steadily over the period, with the 2006 rate of 27.1% more than double the rate for 2002 (13%). The OECD average graduation rate, however, has remained between 8% and 9%, while the EU19 average rate has varied between 6.3% and 7.6% over the same period. In 2002, Ireland ranked fourth. In 2003 and 2004, Ireland ranked third, and in 2005 and 2006 Ireland ranked second.

Nonetheless, the share of school leavers opting to pursue higher education at this level in Ireland is falling and therefore the gap between the OECD/EU 19 averages and Ireland's graduation rate may narrow in future years. (The declines in Ireland's graduation rates at this level are expected to be offset by increases in graduations at Tertiary Type A.)



Figure 6.4 Tertiary Type B Graduation Rates for Relevant Age Cohorts, 2002-2006



Source: OECD (EAG 2008)



Chapter 7 Higher Education - Level 8

Key Points

- **CAO Acceptances:** the number of level 8 acceptances in 2008 was almost 29,700 - an increase of approximately one fifth since 2004 and by 7% since 2007
- **Graduate Output:** the trend towards increasing numbers of graduates at this level has continued: in 2007, there were 26,000 graduates, a rise of 2% since 2006 and 24% since 2003
- **Outlook:** the number of graduates at this level is set to continue to increase given the increasing number of CAO acceptances
- **Science:** the sharp increase in the number of CAO acceptances in science between 2007 and 2008 (+19%) should, in the medium term, reverse the declines in science graduate output observed over the period 2005-2007.
- **Computing:** CAO acceptances for computing courses at this level have been increasing since 2006; this in turn should counteract, at least partly, the declining trend in computing graduate output in the medium term
- **Engineering and manufacturing:** graduate output declined by 12% over the period 2006-2007 and significant increases are not expected in the short to medium term, given that CAO acceptances for this discipline have remained at approximately 1,200 each year over the period 2004-2008
- **International Comparison:** in 2006, 39% of the relevant age cohort obtained a Tertiary Type A qualification - above both the OECD and EU averages (37.3% and 35.2% respectively)

7.1 Introduction

The focus of this chapter is on the supply of skills from programmes leading to awards at level 8 on the National Framework of Qualifications. Awards currently placed at this level are honours bachelor degrees and graduate diplomas (conversion). A description of the learning outcomes associated with awards at this level is outlined in Appendix B.

CAO acceptances for level 8 programmes are first outlined. Second, graduate output at level 8 from institutes of technology and universities is examined. The third section outlines the results of the HEA's FDS for graduates at this level. Finally, examine Ireland's performance internationally in terms of the graduation rate at this level.

7.2 CAO Acceptances

The higher education institutions in the Republic of Ireland have delegated to the Central Applications Office the task of processing centrally applications to their first year undergraduate courses. The majority of first year entrants to level 8 courses have applied for their course of choice and accepted this course, if offered, through the CAO. Because some acceptors do not enrol and

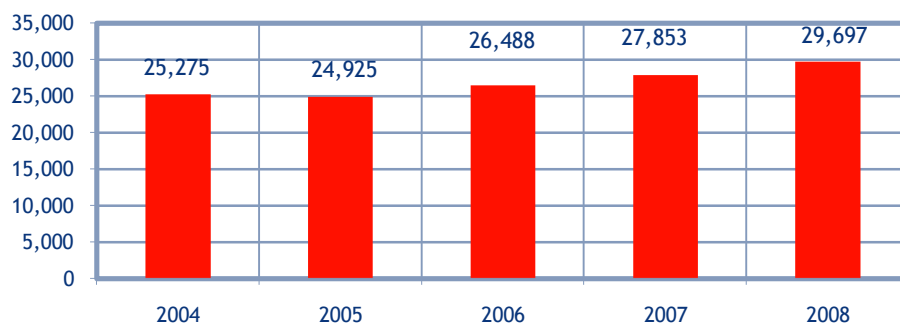


some may seek deferment, CAO acceptances are not the same as student enrolments. They nevertheless give a good indication of annual first year enrolments.

Figure 7.1 presents the number of acceptances for level 8 honours degree programmes each year between 2004 and 2008. In 2008, there were almost 30,000 acceptances for level 8 courses at Irish HEIs. Acceptances at this level have increased by almost a fifth (approximately +4,800) since 2004 and by 6.6% (+1,800) since 2007. At the time of writing, provisional CAO data for 2009 indicates a further 6% increase and, with an additional 1,700 acceptances for 2009 compared to 2008, the total number of level 8 acceptances is expected to be well in excess of 31,000 for 2009.

Level 8 acceptances in 2008 were mostly for female students: 56% of acceptors were female; 44% male. Males, however, have made some gains in their share of level 8 acceptances, as five years previously in 2004, just 42% were male.

Figure 7.1 CAO Acceptances 2004-2008



Source: CAO

As detailed in Table 7.1, the distribution of level 8 CAO acceptances by discipline is largely in line with that of previous years. Of the 30,000 acceptances in 2008, arts and humanities had the largest share and, with almost 9,500 acceptances, made up approximately one third of the total; a fifth (6,412) was for technology related subjects (engineering & manufacturing, construction, computing, and science) and a further fifth was for courses in business and law (6,343). Acceptances for health, vet and agriculture courses accounted for approximately 15% of the total while the remainder was made up of acceptances in education (8%), social services (1.6%) and services (1.5%).

The growth in level 8 acceptances observed in recent years is reflected in increases across most disciplines. Between 2007 and 2008, the number of acceptances in technology related subjects increased by 11.8%, which is almost twice the growth rate for CAO acceptances overall (6.6%). Much of this increase is attributable to an increase in those accepting places on science (non healthcare) courses where the number rose by a fifth (or 474 in absolute terms) to reach almost 3,000 in 2008. A more modest increase of 6.2% was recorded for computing course acceptances. On the other hand, the number of acceptances for courses in engineering and manufacturing declined by 4% between 2007 and 2008 resulting in approximately 50 fewer acceptances. However at 1,202 in



2008, the number of engineering and manufacturing acceptances is nonetheless 2.6% greater than in 2004.

In 2008, the number of acceptances for health, veterinary and agriculture courses remained largely similar to that of 2007 (just 60 additional acceptances) but was one fifth greater than in 2004 (+700 acceptances). In relative terms, the largest increase was for medicine: the number of acceptances has more than doubled since 2004 and has increased by almost a fifth since 2007. (These increases are related to an increased availability of places on medical degree courses for EU students.) Nursing courses, on the other hand, experienced a drop of 6.5% in the number of acceptances between 2007 and 2008 although the number in 2008 remained more than 9% higher than in 2004.

The most significant rise in absolute numbers was for the 'other' category, and in particular for arts and humanities courses: acceptances in arts and humanities rose by 27% (or 2,000) over the five year period 2004-2008. Contrary to overall growth trends, acceptances for services courses (e.g. hotel and catering, security services, etc.) declined by more than a fifth over the period 2004-2008, although there was a modest increase (+29 acceptances) between 2007 and 2008.

The increase in level 8 acceptances for 2009 (provisional data) masks a 17% fall in the number of acceptances for nursing (-329 acceptances), a 13% decline for architecture courses (-32 acceptances) and a 2% decline for education courses (-34 acceptances). On the other hand, there has been a 21% increase for courses in science/applied science resulting in over 800 additional acceptances compared to 2008. There was also a 6% rise for arts/social science courses (+ 571 acceptances) and engineering/technology courses (+158 acceptances) over the same period.

Table 7.1 CAO Level 8 Acceptances by Discipline, 2004, 2007 & 2008

Discipline Level 8	Acceptances 2004	Acceptances 2007	Acceptances 2008	% Change 2008-2007	% Change 2008-2004
Engineering	1,171 (5.4%)	1,251(4.5%)	1,202 (4.1%)	-3.9%	2.6%
Construction	1,031 (3.5%)	1,056 (3.8%)	1,247 (4.2%)	18.1%	21.0%
Computing	889 (3.8%)	946 (3.4%)	1,005 (3.4%)	6.2%	13.0%
Science (non healthcare)	2,594 (10.5%)	2,484 (8.9%)	2,958 (10.0%)	19.1%	14.0%
Total Technology	5,685 (23.3%)	5,737 (20.6%)	6,412 (21.6%)	11.8%	12.8%
Agriculture and Veterinary	274 (1.2%)	327 (1.2%)	380 (1.3%)	16.2%	38.7%
Nursing	1,802 (8.0%)	2,105 (7.6%)	1,969 (6.6%)	-6.5%	9.3%
Medicine	308 (1.4%)	502 (1.8%)	620 (2.1%)	23.5%	101.3%
Dentistry	68 (0.3%)	63 (0.2%)	69 (0.2%)	9.5%	1.5%
Other Healthcare	1,099 (3.8%)	1,223 (4.4%)	1,242 (4.2%)	1.6%	13.0%



Total Health, Vet & Agriculture	3,551 (14.6%)	4,220 (15.2)	4,280 (14.4%)	1.4%	20.5%
Arts and Humanities	7,457 (30.6%)	8,672 (31.1%)	9,477 (31.9%)	9.3%	27.1%
Education	1,957 (7.5%)	2,124 (7.6%)	2,273 (7.6%)	7.0%	16.1%
Business and Law	5,347 (21.2%)	6,220 (22.3%)	6,343 (21.4%)	2.0%	18.6%
Social Services	249 (0.4%)	463 (1.7%)	466 (1.6%)	0.6%	87.1%
Services	564 (2.4%)	417 (1.5%)	446 (1.5%)	7.0%	-20.9%
Total Other	15,574 (62.8%)	17,896 (64.3%)	19,005 (64.0%)	6.2%	22.0%
TOTAL	24,810 (100%)	27,853 (100%)	29,697 (100%)	6.6%	19.7%

Source: CAO

7.3 Level 8 Graduate Output by Sector and Gender

The latest graduation data relates to students who completed level 8 programmes in 2007. The number of graduates, by sector and by gender, for the period 2003-2007 is presented in Figure 7.2. Graduate numbers at this level have been increasing steadily in recent years, reaching over 26,000 in 2007. This represents a 2% increase on the total for 2006 and a 24% increase since 2003. All told, there were an additional 5,000 graduates in 2007 compared to 2003.

Universities are the main providers of level 8 programmes and make up approximately two thirds of the graduate output at this level in any given year; IoTs make up, on average, a third of the total. The share of IoT graduations has nonetheless increased each year since 2003 and their share of level 8 output has risen from 31% to 35% over the five year period.

In terms of gender distribution, females outnumbered males each year: in 2007 there were approximately 15,350 female graduates compared to 10,700 male graduates. This trend is in keeping with preceding years when approximately 41% of all graduates are male; 59% female. The difference in gender distribution is slightly more pronounced in the university sector: in 2007 56% of IoT graduates were female but 61% of university graduates were female. Furthermore, the share of female graduates from IoTs has remained steady at approximately 56% over the period 2003-2007, but there has been a slight shift towards further feminisation in the university sector with the overall share of female university graduates growing from 59% in 2003 to 61% in 2007.

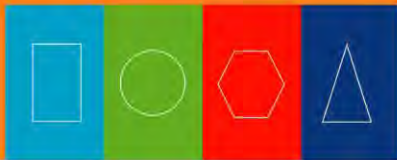
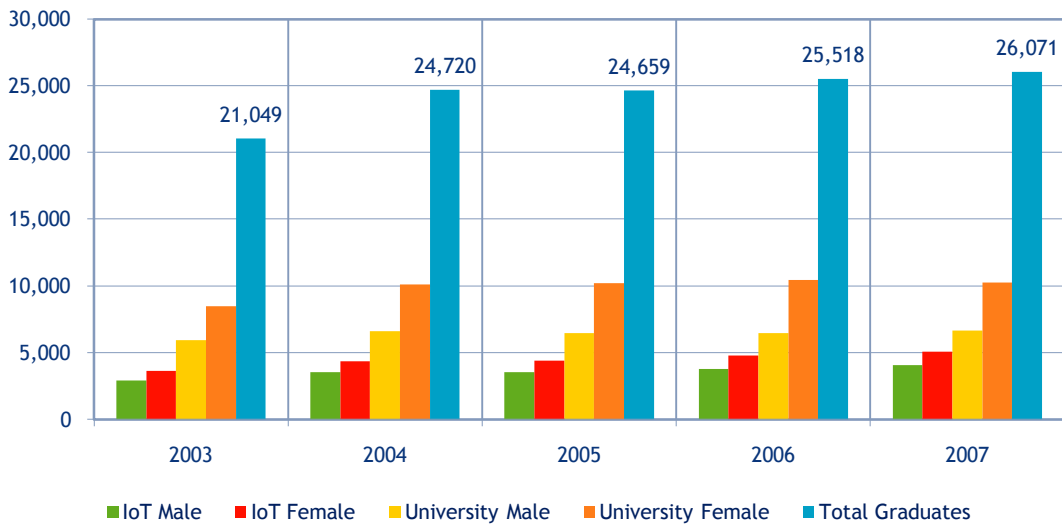


Figure 7.2 Level 8 Graduate Output by Provider Type and Gender, 2003-2007



Source: HEA, IoTs

7.4 Level 8 Graduate Output by Discipline

Table 7.3 outlines the number of graduates at level 8 by discipline for 2006 and 2007. In 2007, almost a third of all graduations were for programmes in social sciences, business and law (over 7,700); this was followed by graduates in the arts, humanities and general/combined fields at 21% and the technology graduates (combined) which accounted for a fifth of the total output; graduates in health and welfare (including nurses) made up 17% of the total at this level.

The most notable changes since 2006 concern a 20% decline in computing, resulting in 243 fewer graduates for 2007 and a 12% fall in the number of graduates in engineering and manufacturing. Construction was the only technology related discipline to increase its share (and number) of graduates: there was a 16% increase in the number of construction graduates which reached almost 1,100 in 2007.

Graduates in agriculture and veterinary increased by more than a quarter, but due to the small number involved, this translates into an absolute increase of approximately 60. The largest relative increases were in education and in agriculture and veterinary which rose by almost a third and over a quarter respectively.



Table 7.3 Level 8 Graduate Output by Discipline, 2006 & 2007

Level 8 graduates	Total 2006	Total 2007	% Change
Engineering & Manufacturing	1,689	1,489	-12%
Construction	939	1,092	16%
Computing	1,219	976	-20%
Science	2,408	2,280	-5%
Total Technology	6,255	5,837	-7%
Agriculture/ Veterinary	238	302	27%
Health & Welfare	4,162	4,385	5%
Total Health, Vet. & Agriculture.	4,400	4,687	7%
Arts & Humanities and general/combined fields	5,374	5,398	0%
Education	1,379	1,811	31%
Social Sciences, Business & Law	7,584	7,740	2%
Services	526	598	14%
Total Other	14,863	15,547	5%
OVERALL TOTAL	25,518	26,071	2%

Source: HEA; IoTs (2006)

Almost 2,000 level 8 awards were made to part-time students, accounting for 8% of all awards made at this level in 2007. Students on part-time courses received awards chiefly in health and welfare (35% of all part-time awards made), social science, business and law (23%) and education (17%). Approximately 18% of all awards in education and 16% of all awards in health and welfare were made to part-time students.

7.5 First Destination

Following completion of level 8 programmes, graduates have a number of options available. The HEA's first destination survey (What Do Graduates Do? The Class of 2006) shows that in 2006, the majority of honours bachelor degree graduates (60%) gained employment. A further third (31%) continued in further study or training. Approximately 2% were seeking employment while 6% were not available for employment or study.



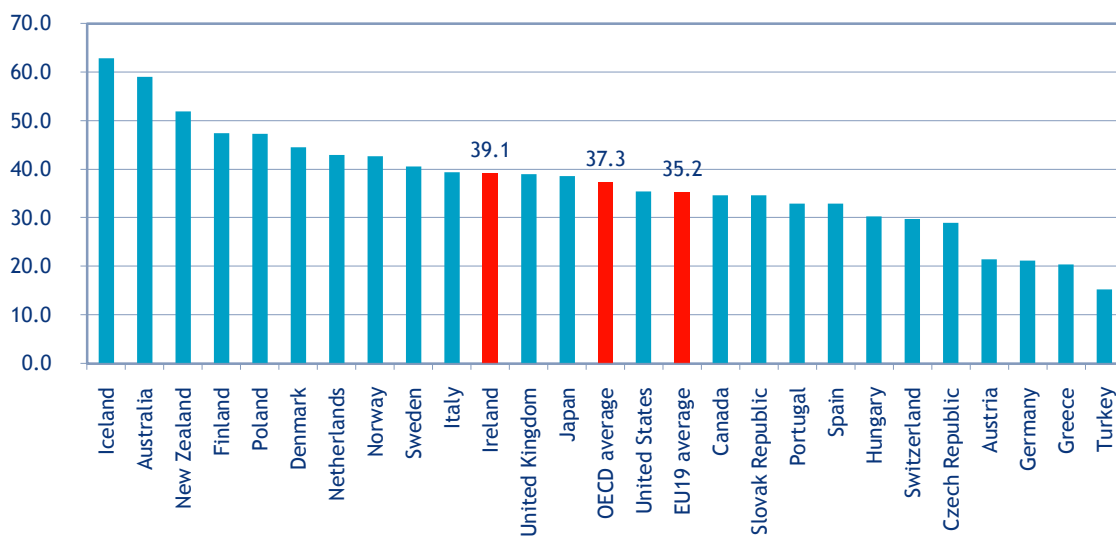
7.6 International Comparison

The purpose of this section is to provide an overview of how Ireland’s performance in terms of graduate output from level 8 courses compares internationally.

ISCED Tertiary Type A education is defined as theoretically based programmes designed to provide qualifications for entry into advanced research programmes and professions with high skill requirements. As such, honours bachelor degrees and master degrees (placed at NFQ levels 8 and 9 respectively, as detailed in Appendix A) in Irish higher education correspond to Tertiary Type A. As it is not possible to disaggregate the OECD data for Tertiary Type A, this section represents the combined graduate output at honours bachelor degree and master degree levels.

Tertiary Type A graduation rates for 2006 are presented in Figure 7.3. At 39.1%, Ireland performs above the OECD and EU 19 averages (37.3% and 35.2% respectively) in terms of the number of graduates at this level in the relevant age cohort. Ireland thus ranks 11th out of 26 countries with comparable data. This ranking is the same as in 2005 although in 2004, Ireland ranked 10th.

Figure 7.3 Tertiary Type A Graduation Rates for Relevant Age Cohorts, 2006

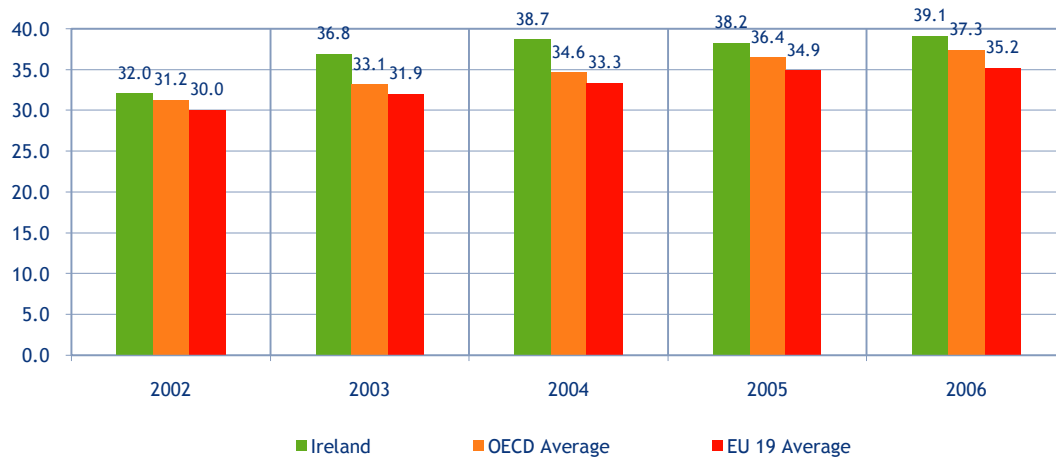


Source: OECD (EAG 2008)

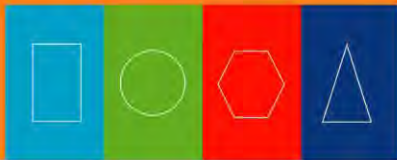
Figure 7.4 shows the graduation rates at this level for Ireland, the OECD average and the EU19 average over the period 2002-2006. Ireland has consistently performed above the OECD and EU19 averages in terms of the share of Tertiary Type A graduates. Thus, while the average graduation rate across OECD and EU19 countries has increased steadily over the period, the rate for Ireland has also increased, going from 32% in 2004 to just over 39% in 2006.



Figure 7.4 Tertiary Type A Graduation Rates for Relevant Age Cohorts in Ireland, EU and OECD, 2002-2006



Source: OECD (EAG 2008)



Chapter 8 Higher Education - Level 9/10

Key Points

- The number of postgraduate enrolments has continued to increase, reaching 29,200 in 2007 - a 40% rise compared to 2003 and a 10% rise compared to 2006
- Postgraduate output grew strongly (+41%) over the period 2003-2007, and reached over 14,650 in 2007
- The number of PhD awards made exceeded 1,000 for the first time in 2007
- **Outlook:** awards at postgraduate level are likely to continue to increase given the steady rises in enrolments observed over the five year period 2003-2007
- **Science & computing:** between 2006 and 2007 graduate output declined by 2%, due mostly to declines at postgraduate cert/diploma levels; however the number of PhD and masters awards in science and computing increased (by 5% for masters and 8% for PhDs); this trend is expected to continue in the short-medium term as enrolments for master programmes increased by 11% and PhD programmes by 2% between 2006 and 2007
- **Engineering, manufacturing and construction:** over the period 2006-2007, graduate output declined at postgraduate cert/diploma level (-30%) and masters level (-6%); however the number of PhD awards increased by 6% and further increases at this level are expected in the medium term due to a 23% rise in the number enrolling on PhD programmes between 2006 and 2007; the decline at masters level may be reversed as enrolments increased by more than a quarter over the same period
- **International Comparison:** at 1.3%, the graduation rate at advanced research degree level (PhD level) is slightly below the OECD average of 1.4%; however, Ireland's rate increased steadily between 2002 and 2006 and now stands closer to the OECD and EU averages than at anytime in the past.

8.1 Introduction

The focus of this chapter is on the supply of skills emerging from programmes placed at levels 9 and 10 on the NFQ. Master degrees and postgraduate diplomas (first stage of a master degree) awards are placed at level 9 on the National Framework of Qualifications. Doctoral degrees are placed at level 10. For presentation purposes higher diplomas from universities and all postgraduate diplomas, whether conversion or leading to a master degree, are also included in this chapter. The learning outcomes associated with a level 9 or a level 10 award are outlined in Appendix B.

The first section of this chapter examines student enrolments on level 9/10 programmes at universities and institutes of technology. This is followed by an analysis of the graduate output



from these programmes. The third section summarises the HEA'S FDS findings for graduates at this level. The final section compares Ireland's graduation rate at this level with that of other OECD countries.

8.2 Enrolment Data

A prior higher education qualification is a pre-requisite for entry to level 9/10 programmes. For the majority of higher education institutions in Ireland, there is no central applications process associated with postgraduate programme entry and prospective students wishing to enter apply directly to the education institution¹³.

Enrolment data at levels 9 and 10 is available from institutes of technology, the Department of Education and Science and the Higher Education Authority.

Postgraduate enrolments over the period 2003-2007, by programme type, are presented in Figure 8.1. In 2007 the number of postgraduates at Irish universities and institutes of technology reached 29,202 - the largest number of postgraduate enrolments to date. Postgraduate enrolments have been increasing steadily in recent years and the 29,202 enrolments observed in 2007 represents a 40% increase on the total for 2003 (21,000) and a 10% increase on the 2006 figure.

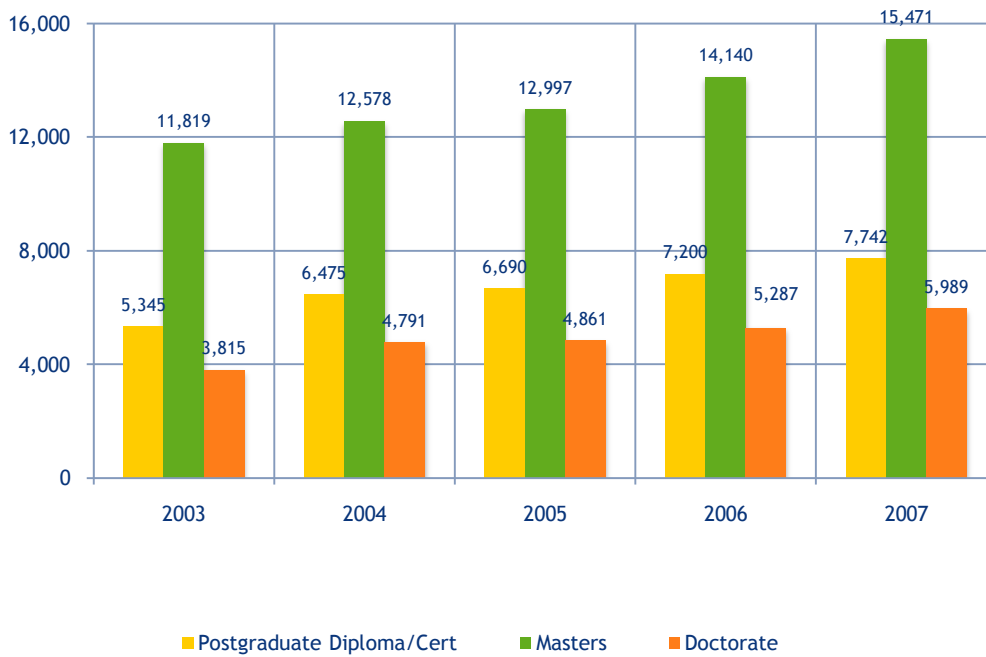
The distribution of postgraduate enrolments by programme type has remained largely unchanged since 2003. Master degrees are by far the most popular postgraduate programme, accounting for more than a half of all postgraduate enrolments in any given year. Approximately one quarter of enrolments were for postgraduate certificates/diplomas while doctoral programmes had the smallest share accounting for, on average, one fifth of the total each year.

Doctoral enrolments have shown the most significant increase over the five year period: enrolments at this level have risen by more than a half since 2003, going from 3,815 to almost 6,000 in 2007. Enrolments for postgraduate certificates and diplomas also grew strongly and have increased by 47% since 2003, reaching 7,742 in 2007. Enrolments for master degrees increased steadily and totalled 15,471 in 2007, a third more than in 2003.

¹³ Increasingly, however, the Postgraduate Applications Centre (PAC) has been processing applications for postgraduate programmes at *some* Irish higher education institutions. The PAC currently accepts applications for over 1,650 courses and in the year Sept 2007-Sept 2008 processed over 13,000 applications.



Figure 8.1 Level 9/10 IoT and University Enrolments, 2003-2007

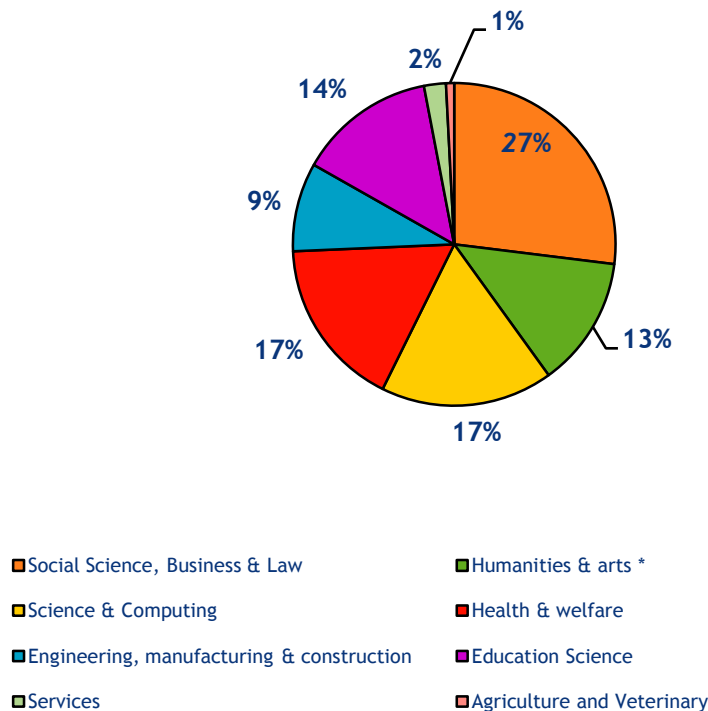


Source: Department of Education and Science, HEA

The overall breakdown of postgraduate enrolments by discipline in 2007 is presented in Figures 8.2. Social science, business and law had the largest share of graduate enrolments with more than one quarter of the total (7,873). This was followed by enrolments in health and welfare and in science which each accounted for less than 17% (approximately 5,000 each).



Figure 8.2 Total level 9/10 Enrolments in Higher Education (IoTs & Universities) by Discipline, 2007



*includes general and combined programmes

Source: HEA

Figure 8.3 provides a breakdown of postgraduate enrolments by programme type and by discipline. In 2007, 53% of all postgraduate enrolments were for masters programmes; more than a quarter were for postgraduate certificates/diplomas with the remaining 12% at PhD level.

Postgraduate cert/diploma enrolments in 2007 were predominantly in the areas of education and health and welfare: more than a third was in education (2,831) and more than a quarter was in health and welfare (2,176 enrolments). At masters level, social science, business and law had the greater share of enrolments, accounting for a third of enrolments at this level. At more than 2,000 enrolments, science and computing had the highest share of PhD enrolments, and when combined with those in engineering, manufacturing and construction (835 enrolments), technology related programmes make up almost one half of all PhD enrolments.

Compared to 2006, there was a 6% increase for science and computing and a 16% increase for engineering, manufacturing and construction enrolments. Overall, technology related enrolments increased from approximately 7,000 in 2006 to over 7,600 in 2007, with increases concentrated at masters and PhD level.

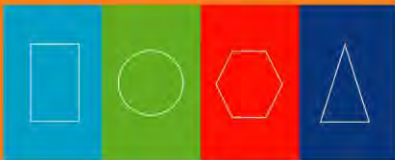
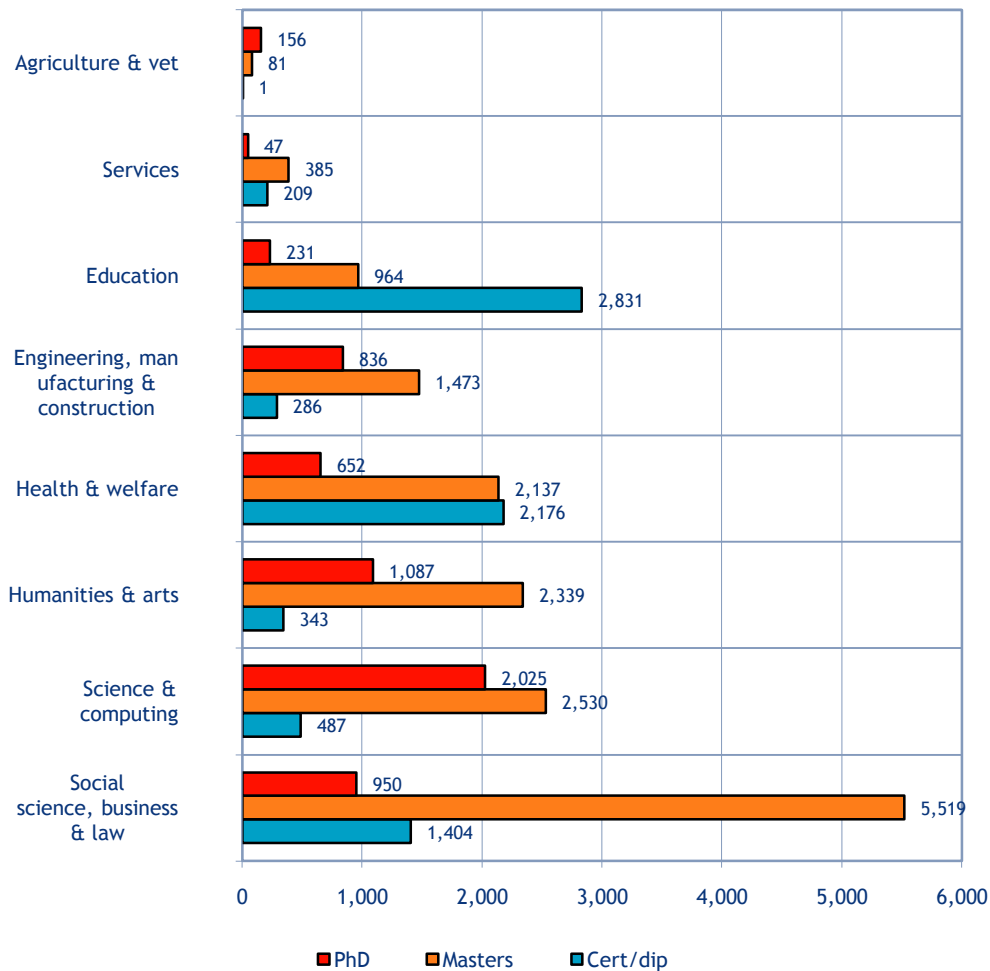


Figure 8.3 Level 9/10 Enrolments in Higher Education (IoTs and Universities) by Discipline, 2007



Source: HEA

More than one half of all students enrolled on postgraduate programmes in 2007 were female (56%), an increase on the 53% share observed in 2006, but on a par with the 2005 share (also 56%). Females dominate in particular at postgraduate cert/diploma level, making up approximately two thirds of enrolments; there are also slightly more females than males at masters level (53% are female). On the other hand, enrolments are almost gender balanced at PhD level where 49% are female.

Over one third (36%) of postgraduate enrolments are for part-time students. The share of part-time students is highest for postgraduate cert/diploma courses (46%) and lowest for PhD programmes (13%). Post-graduate part-time students are primarily enrolled in social science, business and law programmes (27%) or health and welfare programmes (26%).



8.3 Postgraduate Output

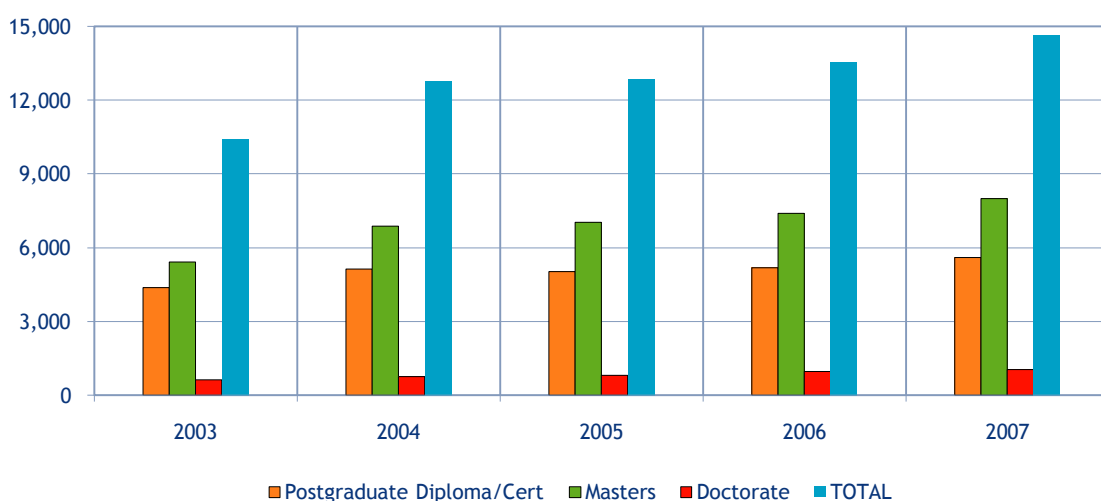
8.3.1 Postgraduate Output by Award Type

Figure 8.3 presents level 9/10 graduations, by award type, over the period 2003-2007. The number of graduations at postgraduate level increased by 41% between 2003 and 2007, growing from 10,400 in 2003 to 14,652 in 2007. Much of the growth occurred between 2003 and 2004 when the overall postgraduate output increased by almost a quarter (or 2,400) and reached 12,781. Since then, graduate output at this level has continued to increase each year, albeit more moderately. The overall number of postgraduate awards in 2007 was 8% higher than in 2006.

In 2007, over a third of postgraduate awards were for postgraduate certs/diplomas, over a half were for master degrees and the remaining 7% for doctoral degrees. This distribution of graduate output by award type differs only very slightly to that of 2003: there has been a rise in the share of master and doctoral awards which increased from 52% and 6% to 55% and 7% respectively over the five year period. The share of postgraduate cert/diploma awards in contrast declined from 42% to 38% over the same period.

Over the period 2003-2008, there was strong growth in the number of graduations for each award type. The number of master degrees increased by almost a half, the number of certs/diplomas by more than a quarter, and the number of doctorates by almost three quarters between 2003 and 2007. There were approximately 90 additional PhD awards in 2007 compared to 2006 (a 9% rise) and overall PhD output totalled 1,055 in 2007; this is the first time that the number of doctorates awarded in Irish higher education has exceeded 1,000.

Figure 8.3 Level 9/10 Graduate Output by Award Type, 2003-2007



Source: HEA; IoTs

8.3.2 Postgraduate Awards by Type & Discipline

Table 8.1 outlines the combined total of postgraduate awards across disciplines by award type in 2006 and 2007. When all award types are considered, social science, business and law account for one third of level 9/10 awards. This is followed by awards in education and health and welfare (16% each). Education accounts for one third (33%) of all postgraduate certs/diplomas; 42% of master awards were in social science, business and law and 34% of all doctoral degrees were for science.

The number of postgraduate awards in **computing** declined by 2% between 2006 and 2007; although the number of postgraduate cert/diploma awards in this discipline fell by almost a quarter, there was a 28% rise in the number of PhDs and a 3% increase in the number of master awards when compared to 2006. In **science**, the overall number of awards remained the same over the two year period 2006-07; while the number of postgraduate certs/diplomas declined by almost a quarter, there was a 9% rise in master awards and a 4% rise in the number of PhDs. With 356 awards, the highest number of PhDs in 2007 was in science, making up just over a third of all doctorates. The number of awards in **engineering and manufacturing** grew by 3% between 2006 and 2007: PhD awards in this discipline expanded by 3% (to 143 awards); postgraduate certs/diplomas grew by 15% and the number of master degree awards remained relatively stable over the period 2006-2007.

Table 8.1 Level 9/10 Graduations by Discipline, 2006-2007

Level 9/10 graduates	2006				2007				% Change
	PG Cert/Dip	Masters	PhDs	Total	PG Cert/Dip	Masters	PhDs	Total	
Engineering & Manufacturing	84	364	139	587	97	362	143	602	3%
Construction	54	195	11	260	51	161	16	228	-12%
Computing	219	575	65	885	167	594	83	844	-5%
Science	188	355	342	885	142	387	356	885	0%
Total Technology	545	1,489	557	2,591	457	1,504	598	2,559	-1%
Agriculture/ Veterinary	1	38	23	62	0	29	23	52	-16%
Health & Welfare	1,326	744	106	2,176	1,575	695	131	2,401	10%
Total Health, Vet. & Agriculture	1,327	782	129	2,238	1,575	724	154	2453	10%
Arts & Humanities*	161	1,331	129	1,621	285	1,608	134	2,027	25%
Social Sciences, Business & Law	1,255	3,162	111	4,528	1,294	3,397	138	4,829	7%
Education	1,796	464	28	2,288	1,858	530	20	2,408	5%
Services	104	184	12	300	123	242	11	376	25%
Total Other	3,316	5,141	280	8,737	3,560	5,777	303	9640	10%
OVERALL TOTAL	5,188	7,412	966	13,566	5,592	8,005	1,055	14,652	8%

*Humanities and arts includes graduates from general and combined programmes

Source: HEA; IoTs; HETAC



In 2007, almost one third of graduate output at this level was for students in part-time study, primarily in disciplines such as social science, business and law and health and welfare. More than one half of part-time PhD were in technology related areas (i.e. science, computing, engineering, manufacturing and construction).

Females accounted for 61% of all postgraduate awards in 2007: at postgraduate cert/diploma and master levels, females received 70% and 56% of awards respectively. At PhD level, however, males have a higher share with 54% of all PhDs.

8.4 First Destination

Graduates at level 9/10 have a number of options available to them such as entry into the workforce and the pursuit of further study. A report published by the HEA in 2008 (What Do Graduates Do? The Class of 2006) confirms that a high proportion of level 9/10 graduates enter employment on completion of their studies.

For postgraduate diplomas (including higher diplomas), 79% of graduates in 2006 entered employment, 15% were in further training and study, with almost equal shares (approximately 3% each) seeking employment and unavailable for work or study.

For master and PhD degrees, the majority of graduates in 2006 entered employment (75%); 15% were in further training or study; 4% were seeking employment and 6% were unavailable for work or study.

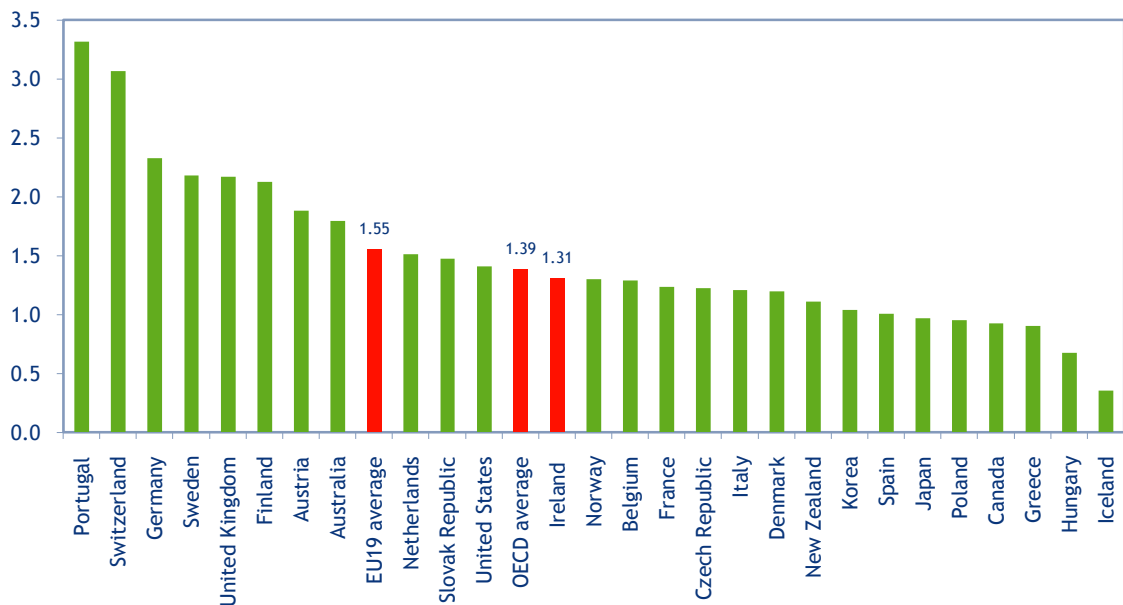


8.5 International Comparison

This section presents an indication of Ireland's performance in terms of advanced research graduates with that of other OECD countries. The data was obtained from the OECD publication, Education at a Glance (EAG) 2008.

Advanced Research Degrees correspond to PhD degrees in Ireland. Figure 8.4 shows the average graduation rate at this level for Ireland, OECD countries and EU 19 countries. Ireland's rate of 1.3% is slightly less than the OECD average (1.4%). Ireland's performance is also substantially lower than several countries, most notably the top performers Portugal and Switzerland which have graduation rates at advanced research degree level of more than 3% each - more than double that of Ireland.

Figure 8.4 Advanced Research Graduation Rates in Selected OECD Countries, 2006

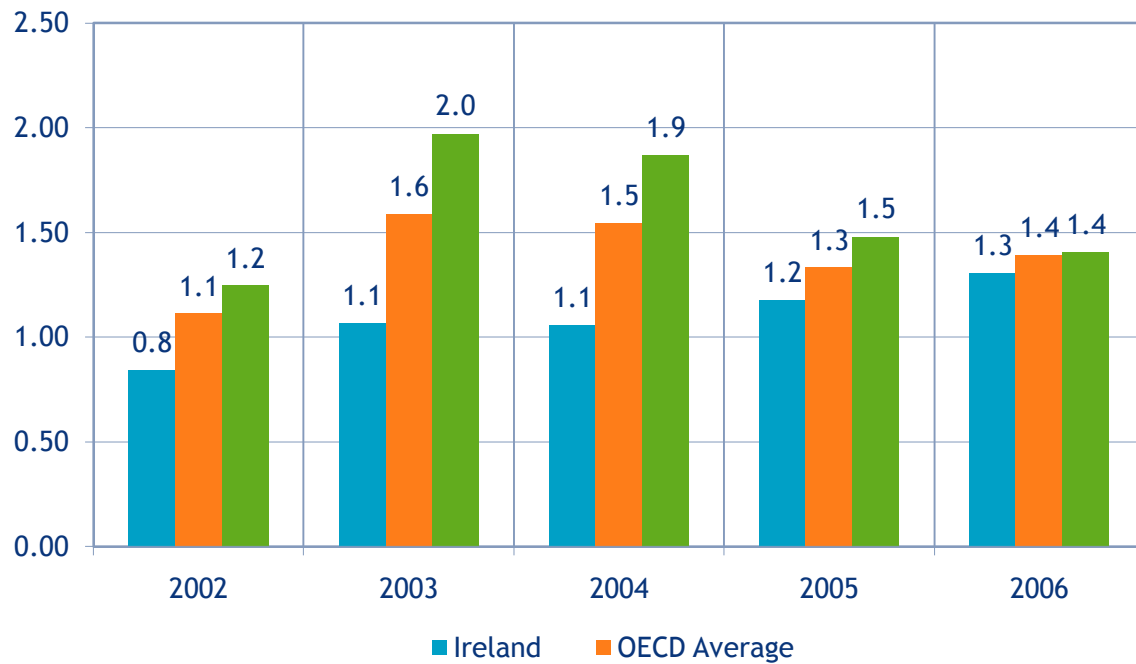


Source: OECD (EAG 2008)

The average graduation rates for Ireland, OECD countries and the EU 19 are presented in Figure 8.5. The rate for Ireland has been increasing since 2002 in contrast to the trend for both the EU and OECD averages which have been declining since 2003. Ireland now stands closer to the OECD and EU averages than it has done at anytime in the past, with a percentage point gap between Ireland and the OECD and EU averages of just 0.1.



Figure 8.5 Advanced Research Graduation Rates in Ireland, EU 19 and OECD, 2002-06



Source: OECD (EAG 2008)



Chapter 9 Private Education Provision

Key Points

- In 2008, there were over 8,700 awards made to individuals in the private education sector
- HETAC awards made to those pursuing higher education outside the university and IoT sector stood at almost 3,000 in 2008, two thirds of which were made at level 8
- Almost one half of all HETAC awards in the private/independent sector were in the field of humanities and arts, with a further 40% in business related studies.
- Approximately 6,000 individuals obtained a qualification awarded by a professional institute in 2008, mostly in business (e.g. banking, accounting)

9.1 Introduction

Education and training in Ireland also includes a small, but significant, private sector, comprised of private, independent colleges and professional institutes. Courses offered in private colleges are accredited by a variety of awarding bodies including the Higher Education and Training Awards Council (HETAC). Professional institutes provide training for occupations such as bankers, accountants, insurance brokers, lawyers, managers, etc. In the main, professional institutes act as their own awarding bodies¹⁴.

There are a number of limitations when gathering awards data for the private sector. First, there is no definitive list of all private education and training provision in Ireland. Second, not all parties involved are in a position to make such data, if held, available to the public. The numbers in this chapter therefore do not reflect the full extent of private education and training in Ireland. Third, it is not possible to make year-on-year comparisons as data received each year is not always from the same providers/awarding bodies.

Given the aforementioned limitations, the data discussed in this chapter represents the minimum number of individuals who obtained a recognised qualification via private education pathways in 2008. First, HETAC awards data for higher education institutions outside of the university and IoT sectors is examined¹⁵. Second, qualifications gained by those pursuing education provided by professional institutes are presented¹⁶.

¹⁴ The data in this section is not directly comparable with that in the 2008 issue of Monitoring Ireland's Skills Supply as we were unable to obtain (a) data from the same sources as last year and (b) data in a similar format (i.e. at course level). Only professional institutes that act as education or training providers are included in this analysis in order to avoid any double counting which may arise in cases where students must source their own education via private or public bodies.

¹⁵ Appendix D details these higher education institutions.

¹⁶ Appendix D details these professional institutes.



9.2 Independent Colleges (HETAC Awards)

In 2008, almost 3,000 awards were made to graduates of higher education institutes outside the university and IoT sectors, as shown in Table 9.1. Two thirds of the awards were made a level 8 with a further 23% were made at levels 7/6. Less than 10% of the total was for postgraduate awards.

Approximately one half of awards made in the private education sector were in the humanities and arts; over 40% were in business.

Table 9.1 HETAC Awards 2008 by NFQ Level and Discipline

Award Level	Humanities & Arts*	Business	Engineering	Science	Total
Level 6	93	109	0	16	218
Level 7	289	169	0	0	458
Level 8	964	825	15	144	1,948
Level 9/10	84	72	0	112	268
Total	1,426	1,175	15	272	2,892

* Includes unspecified discipline

Source: HETAC

Approximately 58% (1,681) of all awards were made to full-time students, with part-time students making up the remainder. Full-time students outnumbered part-time students at all levels but the gap was widest at level 7 where almost two thirds of the awards went to full-time students.

While three quarters of business and science awards were for full-time programmes, part-time awards made up the greater share of awards in humanities and arts (58%) and in engineering (100%).

9.3 Professional Institutes

Although there are some exceptions, awards made by professional institutes are not made according to NFQ levels. However, in consultation with the main providers, it was possible to discern three broad levels for the programmes they offer: sub-degree, degree-level and postgraduate level. Table 9.2 shows the awards by level made by professional institutes in 2008. Almost 6,000 awards were made by professional institutes that year, almost two thirds of which were at sub-degree level; just under a third at postgraduate level and the remainder at degree level.

Awards by professional institutes were made predominantly in the areas of banking, accountancy, insurance, tax and law. Postgraduate awards were made predominantly in the areas of



accountancy; degree awards in banking and taxation; the sub-degree category in banking and insurance.

Table 9.2 Professional Institutions Awards by level, 2008

Level	Total	%
Sub-degree	3,685	63%
Degree	340	6%
Postgraduate*	1,791	31%
Total	5,816	100%

*The latest available data for postgraduate level awards was 2007

Source: Professional institutes; IAASA (Irish Auditing and Accounting Supervisory Authority)



Chapter 10 Irish Students Abroad

Key Points

- Over 18,500 Irish students were enrolled in higher education programmes abroad in 2006, mostly in the UK
- Three quarters of Irish students abroad were enrolled on Tertiary Type A programmes; almost 7% were on advanced research degree programmes
- There was an increase of approximately 700 students travelling abroad for tertiary education in 2006 compared to 2005
- In 2008, 6,120 Irish students accepted places for higher education studies in the UK - a 1% rise on the preceding year: this is the first time in the five year period 2004-2008 that there has not been a drop in the number of Irish domiciled acceptances.
- In 2008, Irish domiciled students' acceptances were almost equally distributed between the three main disciplines: technology (34%), health, vet and agriculture (36%) and the 'other' category (30%).
- Over 5,300 Irish students obtained a third level qualification in the UK in 2008; one quarter of all Irish graduates were for health, veterinary and agriculture programmes

10.1 Introduction

Every year a number of Irish students opt to pursue higher education outside of Ireland. The OECD education statistics include a section on international students, defined either as students who are not permanent or usual residents of their country of study or alternatively as students who obtained their prior education in a different country¹⁷.

The first section of this chapter examines the enrolment data for Irish students, by programme type, in higher education institutions outside Ireland for 2006 (the latest year available). Data for Irish students in the UK is available in greater detail and section 2 examines the number of Irish students who accepted an offer of a place to study at higher education institutions in the UK through the UK based Universities and Colleges Admission Service (UCAS), the organisation responsible for managing applications to higher education courses in the UK, similar to the CAO in Ireland. The final section, using data provided by the Higher Education Statistics Authority HESA in the UK, shows the number of Irish students who graduated from higher education programmes in the UK.

¹⁷ International student data excludes numbers relating to those undertaking shorter, temporary courses as part of international exchange programmes such as ERASMUS.



10.2 Irish Enrolments Abroad

In 2006 over 18,500 Irish students were enrolled in higher education programmes abroad, as detailed in Table 10.1. With approximately 90% of the total, the UK has by far the highest share of Irish students enrolled; this is followed by the United States which has approximately 6% of the total. Approximately three quarters of Irish students abroad are enrolled in the UK on Tertiary Type A programmes. Almost 7% of Irish abroad were in advanced research degree programmes, predominantly in the UK but also in Canada and Australia. Countries in the 'others' category include Belgium, the Netherlands, New Zealand and the Slovak Republic.

The overall distribution of Irish students abroad is similar to preceding years; however, there has been an increase of approximately 700 students (+4%) travelling abroad for tertiary education compared to 2005: the largest share of this increase was for students studying in the UK which has risen from 16,345 in 2005 to 16,790 in 2006. Most of this increase was for Tertiary Type A programmes (+454 students).

Table 10.1 Irish Student Enrolments (2006) Abroad by Programme Level and Country

Country	Tertiary Type A	Tertiary Type B	Advanced Research	Unspecified	Total
United Kingdom	13,512	2,132	1,146		16,790
United States				1,139	1,139
Australia	147	1	24		172
Canada	108	0	18		126
Denmark	115	9	0		124
Spain	68	0	5		73
Sweden	65	0	0		65
Others	60	5	13		78
Total	14,075	2,147	1,206	1,139	18,567

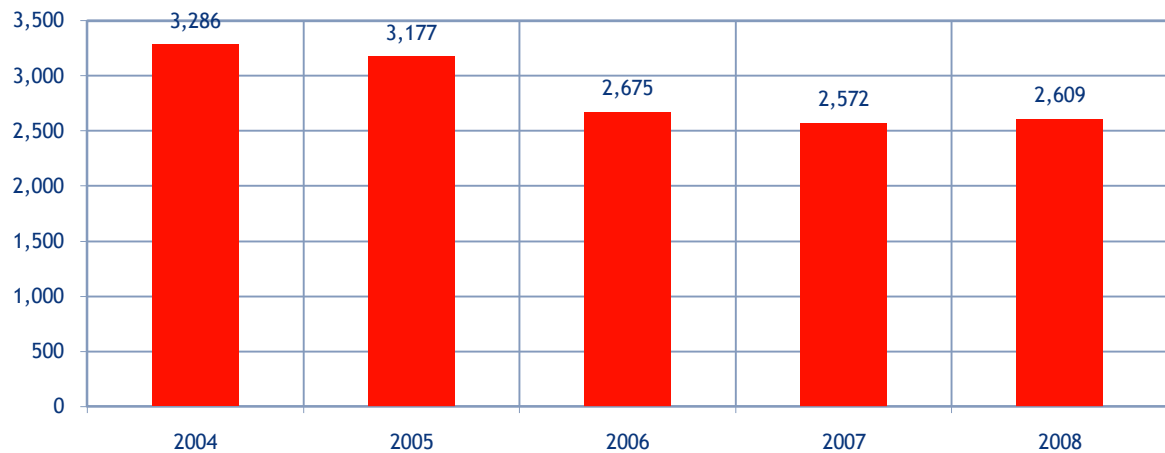
Source: OECD online database

10.3 UCAS Acceptors

In 2008, the number of Irish domiciled students who accepted places for higher education studies in the UK was 2,609, a 1% increase on the preceding year but still well below the 2004 level of 3,286. Although only a small increase on last year, this is the first time in the five year period 2004-2008 that there has not been a drop in the number of Irish domiciled acceptances.



Figure 10.1 Republic of Ireland Domiciled UCAS Acceptors, 2004 - 2008



Source: UCAS

The discipline breakdown of Irish domiciled UCAS acceptors in 2008 is presented in Table 10.2. Also provided is the share of acceptors for each discipline in 2007 and 2008.

In 2008, Irish domiciled students' acceptances were almost equally distributed between the three main disciplines: technology (34%), health, vet and agriculture (36%) and the 'other' category (30%). Subjects allied to medicine, including nursing, pharmacy, nutrition, etc. accounted for one third of all acceptances and medicine and dentistry made up a further 3%. The 'other' category was made up mostly of acceptances in arts and humanities (including creative arts and design) and in social science, business and law.

There has been little change in the overall distribution of acceptances by discipline for Irish domiciled students between 2007 and 2008 with approximately one third of acceptances in each of the three broad areas each year. However, due to declines in the numbers for science and computing and architecture, building and planning, there has been a four percentage point decline in the share technology acceptances (i.e. 71 fewer acceptances). On the other hand, the share of acceptances in the health, vet and agriculture category increased by four percentage points between 2007 and 2008 resulting in more than 100 additional acceptances, mostly for subjects allied to medicine.

Almost one half of Irish domiciled students accepted places in higher education in England; more than a quarter in Scotland, 16% in Northern Ireland and 8% in Wales.



Table 10.2 Republic of Ireland Domiciled UCAS Acceptors, by Discipline 2007 - 2008

Discipline	Total 2008	% 2007	% 2008
Engineering & technology	320	12%	12%
Architecture, building & planning	190	9%	7%
Science & computing	367	16%	14%
Total Technology	877	37%	34%
Medicine and dentistry	76	3%	3%
Subjects allied to medicine	782	27%	30%
Agriculture & vet	80	3%	3%
Total health, vet & agriculture	938	32%	36%
Arts, humanities and combined	367	15%	14%
Education	50	2%	2%
Social Science, business & law	377	13%	14%
Total Other	794	31%	30%
Overall Total	2,609	100%	100%

Source: UCAS (UK)

10.4 Irish Domiciled Graduates in the UK

The number of Irish domiciled students who graduated from courses at UK higher education institutions is presented in Table 10.3 for 2007 and 2008. Over 5,300 Irish students obtained a third level qualification in the UK in 2008. One quarter (almost 1,300) of Irish graduates were in the fields of health, veterinary; a fifth were in social science, business and law and a further 15% were in education. Science and computing graduates made up 14% of the total Irish graduates in the UK in 2008.

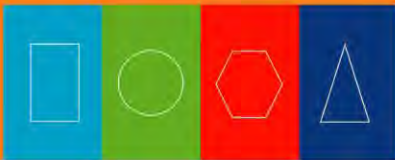
Over the period 2007-2008, the number of Irish domiciled students graduating from higher education in the UK decreased by 3% (or approximately 200 fewer graduates). However, there were increases in the number graduating in the fields of health, veterinary and agriculture (+8%) and social studies business and law (+3%). The most significant relative decline occurred for engineering and technology graduates (-14%).



Table 10.3 Irish Domiciled Graduates in UK Higher Education 2007-2008

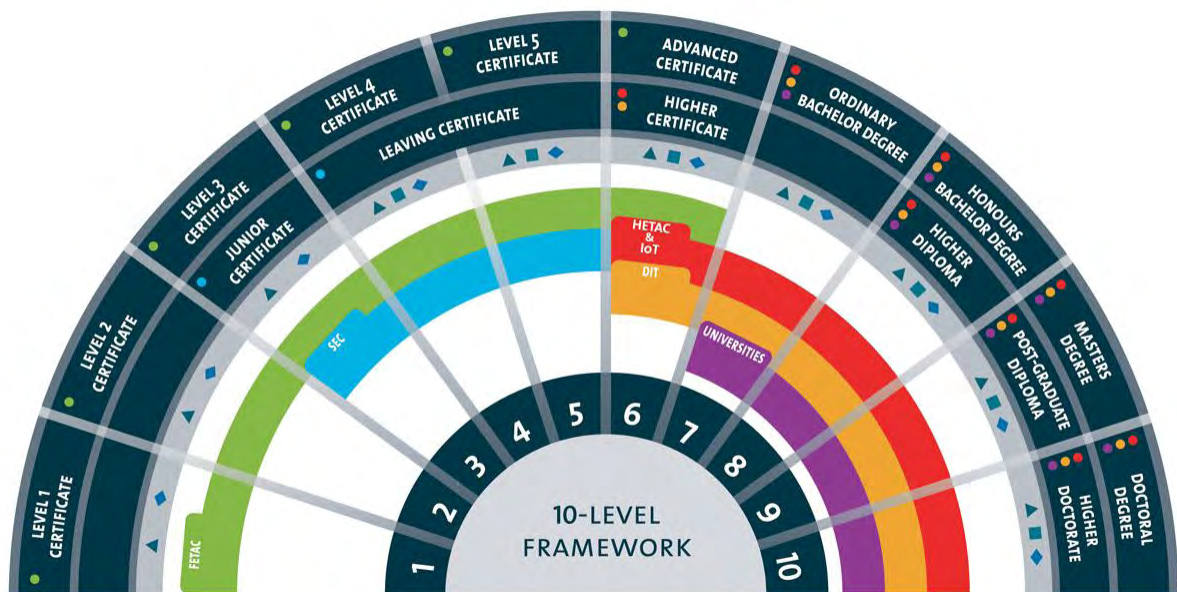
Discipline	2007	2008	% difference
Health, vet and agriculture	1,174	1,265	8%
Science & computing	779	725	-7%
Engineering & technology	521	450	-14%
Architecture, building & planning	433	395	-9%
Social studies, business & law	963	990	3%
Arts, humanities & combined studies	774	685	-11%
Education	859	810	-6%
Total	5,503	5,320	-3%

Source: HESA (UK)



Appendix A NFQ Awards

Figure A.1 National Framework of Qualifications



The ‘fan diagram’ above illustrates each of the ten levels on the National Framework of Qualifications, the awarding bodies that make the awards and the major award-types.

Key to Awarding Bodies

	FETAC - Further Education and Training Awards Council
	SEC - State Examinations Commission (Department of Education & Science)
	HETAC - Higher Education and Training Awards Council
	IoT - Institutes of Technology (make their own awards at specified levels under Delegated Authority from HETAC)
	DIT - Dublin Institute of Technology
	Universities

Key to Awards in the Framework

	Major Awards: are the principal class of awards made at a level
	Minor Awards: are for partial completion of the outcomes for a Major Award
	Supplemental Awards: are for learning that is additional to a Major Award
	Special Purpose Awards: are for relatively narrow or purpose-specific achievement



Appendix B NFQ Learning Outcomes

The National Framework of Qualifications (NFQ) is based on standards of knowledge, skill and competence. The structure of the framework is based on levels which range from level 1 to level 10. Associated with each level is a specified level indicator. Level indicators are broad descriptions of the learning outcomes at a given level in terms of eight sub-strands of knowledge, skill and competence. Outlined below is a synopsis of each level indicator pertaining to NFQ levels 1 - 10, the levels referred to in this report.

Level 1 - The learning outcomes relate to the performance of basic tasks in a controlled environment under supervision and the display of an ability to learn information and basic repetitive skills, as well as to sequence learning tasks. Literacy and numeracy achievements would correspond to those measured at the initial levels of international assessment systems.

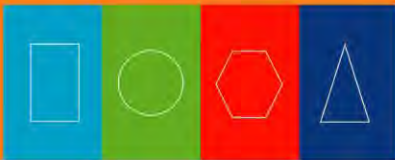
Level 2 - Key outcomes relate are basic literacy and numeracy and the introduction to systematic learning. Learning outcomes relate to the ability to learn new skills and knowledge in a supervised environment and to carry out routine work under direction. Learning outcomes at this level are typically developmental rather than geared towards a specific occupation.

Level 3 - Learning outcomes at this level relate to a low volume of practical capability and of knowledge of theory. The outcomes relate to the performance of relatively simple work and may be fairly quickly acquired. Outcomes at this level may also confer a minimum employability for low-skilled occupations and include functional literacy and numeracy.

Level 4 - Independence is the hallmark of this level. Learning outcomes at this level correspond to a growing sense of responsibility for participating in public life and shaping one's own life. The outcomes at this level would be associated with first-time entry to many occupational sectors.

Level 5 - Learning outcomes at this level include a broad range of skills that require some theoretical understanding. The outcomes may relate to engaging in a specific activity, with the capacity to use the instruments and techniques relating to an occupation. They are associated with work being undertaken independently subject to general direction.

Level 6 - The learning outcomes at this level include a comprehensive range of skills which may be vocationally-specific and/or of a general supervisory nature, and require detailed theoretical understanding. The outcomes also provide for a particular focus on learning skills. The outcomes relate to working in a generally autonomous way to assume design and/or management and/or administrative responsibilities. Occupations at this level would include higher craft, junior technician and supervisor.



Level 7 - Learning outcomes at this level relate to knowledge and critical understanding of the well established principles in a field of study and the application of those principles in different contexts. This level includes knowledge of methods of enquiry and the ability to critically evaluate the appropriateness of different approaches to solving problems. The outcomes include an understanding of the limits of the knowledge acquired and how this influences analyses and interpretations in a work context. Outcomes at this level would be appropriate to the upper end of many technical occupations and would include higher technicians, some restricted professionals and junior management.

Level 8 - Innovation is a key feature of learning outcomes at this level. Learning outcomes relate to being at the forefront of a field of learning in terms of knowledge and understanding. The outcomes include an awareness of the boundaries of the learning in the field and the preparation required to push back those boundaries through further learning. The outcomes relate to adaptability, flexibility, ability to cope with change and ability to exercise initiative and solve problems within their field of study. In a number of applied fields the outcomes are those linked with the independent, knowledge-based professional. In other fields the outcomes are linked with those of a generalist and would normally be appropriate to management positions. Those holding a Level 8 qualification are eligible for transfer to a programme leading to a higher diploma or progression to programmes leading to master degree or postgraduate diploma or in some cases to programmes leading to a doctoral degree.

Level 9 - The learning outcomes at this level relate to the demonstration of knowledge and understanding which is at the forefront of a field of learning. The outcomes relate to the application of knowledge, understanding and problem solving abilities in new or unfamiliar contexts related to a field of study. The outcomes are associated with an ability to integrate knowledge, handle complexity and formulate judgements. Outcomes associated with this level would link with employment as a senior professional or manager with responsibility for the work outputs of teams. Progression and transfer routes for those completing postgraduate diplomas would lead to a masters degree some of which they may be exempt from. Those with masters degrees would progress or transfer to a doctoral degree or to another masters degree or to a postgraduate diploma.

Level 10 - Learning outcomes at this level relate to the discovery and development of new knowledge and skills and delivering findings at the frontiers of knowledge and application. Further outcomes at this level relate to specialist skills and transferable skills required for managing such as the abilities to critique and develop organisational structures and initiate change.



Appendix C Education Field Occupations

Table C.1 Occupations Included in Education Fields

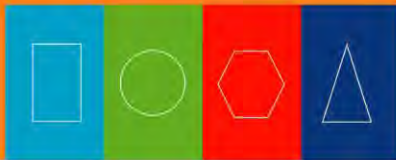
Education Fields	Occupations
Education	Careers advisors
	Driving instructors (excluding HGV)
	Educational assistants
	Higher and further education teachers
	Other managers n.e.c.
	Other teaching professionals nec.
	Primary and nursery education teachers
	Secondary and vocational education teachers
	Special education teachers
	University and RTC teachers
	Vocational, industrial trainers
Humanities and Arts	Actors, entertainers, stage producers and directors
	Artists, commercial/industrial and designers
	Bookbinders and print finishers
	Clergy
	Clothing designers
	Goldsmiths, silversmiths, precious stone workers
	Musical instrument makers
	Musicians
	Originators and composers
	Other printing trades
	Photographers, camera, sound and video operators
	Printers
	Printing machine minders and assistants
Screen printers	
Weavers	
Window dressers, floral arrangers	
Social sciences, Business and Law	Accounts and wages clerks, other financial clerks
	Actuaries, economists, statisticians
	Administrators of schools and colleges



Education Fields	Occupations
	Advertising and PR managers
	Archivists and curators
	Authors, writers, journalists
	Bank etc. managers
	Barristers and advocates
	Buyers (retail)
	Buyers and purchasing officers (not retail)
	Cashiers bank and counter clerks
	Chartered and certified accountants
	Civil Service administrative officers
	Civil Service EO
	Collector salespersons and credit agents
	Commodity and shipping brokers
	Company financial managers
	Company Secretaries
	Computer operators, other office machine operators
	Credit Controllers
	Debt, rent and other cash collectors
	Estimators and valuers
	Filing, computer and other records clerks
	General administrators; national government
	General Managers; large companies
	Importers and exporters
	Judges
	Legal secretaries
	Legal service and related occupations
	Librarians
	Library assistants/clerks
	Local government clerical officers and assistants
	Local government officers
	Management accountants
	Management consultants and business analysts
	Managers/proprietors of shops etc.
	Marketing etc. managers



Education Fields	Occupations
	Medical secretaries
	Merchandisers
	Officials of trade association etc.
	Other clerks (n.o.s.)
	Other financial managers n.e.c.
	Other sales representatives n.e.c
	Other secretaries
	Other social/behavioural scientists
	Personnel etc. managers
	Personnel, industrial relations officers
	Petrol pump attendants
	Property and estate managers and proprietors
	Psychologists
	Purchasing managers
	Receptionists
	Retail cash desk and check out operators
	Roundsmen/women and van salespersons
	Sales assistants
	Sen. Managers; national government
	Solicitors
	Stores managers
	Taxation experts
	Technical and wholesale sales representatives
	Telephone operators
	Telephone salespersons
	Typists, word processor operators
Underwriters, claims assessors and analysts	
Warehousemen/women	
Warehousing managers	
Work study officers	
Science, Mathematics and Computing	Biological scientists
	Chemists
	Computer analyst/programmers
	Computer systems managers



Education Fields	Occupations
	Environmental health officers
	Environmental health, Occupational hygienists
	Laboratory technicians
	Marine, insurance and other surveyors
	Other natural scientists n.e.c
	Other scientific technicians n.e.c.
	Physicists
	Software engineers
Engineering, Manufacturing and Construction	Aircraft officers
	Architects
	Architectural, town planning technicians
	Assemblers/lineworkers (electrical/electronic goods)
	Assemblers/lineworkers (metal goods and other goods)
	Bakers, flour confectioners
	Bakery and confectionery process operatives
	Barbenders, steel fixers
	Brewery and vinery process operatives
	Bricklayers, masons
	Builders, building contractors
	Building and civil engineering technicians
	Building inspectors
	Building managers
	Building, mining and other surveyors
	Butchers, meat cutters
	Cabinet makers
	Cable jointers, lines repairers
	Carpenters and joiners
	Chemical engineers
	Chemical, gas and petroleum process plant operatives
	Civil/mining engineers
	Clerk of works
	Clothing cutters, milliners and furriers
	Coach and other spray painters
	Coach and vehicle body builders



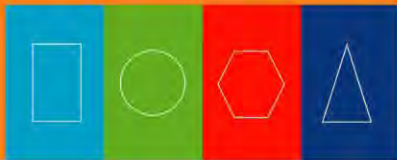
Education Fields	Occupations
	Coach trimmers, upholsterers and mattress makers
	Coal mine labourers
	Computer engineers, installation and maintenance
	Construction and related workers
	Cutting and slitting machine operatives
	Design and development engineers
	Draughtspersons
	Electrical engineers
	Electrical, energy, boiler and related plant attendants
	Electrical/electronic technicians
	Electricians, electrical maintenance fitters
	Electronic engineers
	Engineering technicians
	Face trained coal miners
	Floorers, floor coverers, carpet fitters, tilers
	Garage managers and proprietors
	Glass and ceramic furnice operatives
	Glass product and ceramics finishers
	Glass product and ceramics makers
	Glaziers
	Industrial designers
	Inspectors, viewers and testers (metal goods)
	Inspectors, viewers and testers (other goods)
	Knitters
	Labourers in engineering trades
	Labourers in foundries
	Labourers in other making/processing industries
	Machine tool operatives (inc. CNC operatives)
	Managers/proprietors of butchers
	Mates in Building Trade
	Mates in woodworking trades
	Mates to metal/electrical and related fitters
	Mechanical engineers
	Mechanical plant drivers/operatives



Education Fields	Occupations
	Metal plate workers
	Metal polishers
	Metal working production and maintenance fitters
	Mine (excluding coal) and quarry workers
	Mining and energy industry managers
	Motor mechanics
	Moulders and die casters
	Moulders and Furnace operatives (metal)
	Other Assemblers/lineworkers
	Other building and civil engineering labourers
	Other chemical, paper, plastics and related operatives
	Other construction trades n.e.c.
	Other craft and related occupations
	Other electrical/electronic trades n.e.c.
	Other engineers and technologists n.e.c.
	Other food, drink and tobacco process operatives
	Other machine tool setters and CNC setter-operators n.e.c.
	Other metal making process operatives n.e.c
	Other plant, machine and process operatives n.e.c.
	Other routine process operatives
	Other textiles processing operatives
	Other textiles, garments and related trades n.e.c.
	Other transport and machinery operatives n.e.c.
	Other woodworking trades n.e.c.
	Packers, bottlers, canners, fillers
	Painters and decorators
	Paper, wood and related process plant operatives
	Paviors and kerb layers
	Preparatory fibre processors
	Pipe layers/pipe jointers
	Planning and quality control engineers
	Plasterers
	Plastics process operatives
	Plumbers, heating and related trades



Education Fields	Occupations
	Precision instrument makers
	Press stamping and automatic machine workers
	Production and works managers
	Production engineers
	Quantity surveyors
	Radio and telegraph operators
	Radio, TV and video engineers
	Rail construction and maintenance workers
	Road construction and maintenance workers
	Roofers, slaters, tilers, sheeters, cladders
	Routine laboratory testers
	Rubber process operatives and tyre builders
	Scaffolders, riggers, steeplejacks
	Sewing machinists, menders, darners and embroiderers
	Sheet metal workers
	Ship and hovercraft officers
	Shoe repairers and other leather making and repairing
	Shot blasters
	Shunters and points operatives
	Slingers
	Smiths, forge/Metal plate workers
	Spinners, doublers, twistors
	Steel erectors
	Tailors, dressmakers
	Tannery production operatives
	Telephone fitters
	Tobacco process operatives
	Tool makers, tool fitters and markers out
	Town planners
	Tyre and exhaust fitters
	Vehicle body repairers, panel beaters and spray painters
	Warp preparers, bleachers, dyers and finishers
	Washers, screeners and crushers in mines and quarries
	Weighers, graders, sorters



Education Fields	Occupations
	Welding trades
	Woodworking machine operatives
Agriculture and Veterinary	Agricultural machinery drivers
	Farm owners and managers
	Farm workers
	Fishing and related workers
	Fishmongers, poultry dressers
	Forestry workers
	Gardeners, groundsman/groundswomen
	Horticultural trades
	Other farming occupations
	Other managers in farming, horticulture etc
	Veterinarians
Health and Welfare	Ambulance staff
	Care assistants and attendants
	Chiropodists
	Dental nurses
	Dental practitioners
	Dental technicians
	Hospital porters
	Hospital ward assistants
	Information officers and guidance specialists
	Matrons, houseparents
	Medical practitioners
	Medical radiographers
	Medical technicians, dental auxiliaries
	Midwives
	Nursery nurses
	Nurses
	Nurses aids etc.
	Occupational and therapists n.e.c
	Ophthalmic and dispensing opticians
Other childcare and related occupations	
Other health associate professionals n.e.c.	



Education Fields	Occupations
	Pharmacists/pharmacologists etc
	Physiotherapists
	Playgroup leaders
	Social workers, probation officers
	Welfare, community and youth workers
Services	Air traffic planners and controllers
	Bar staff
	Beauticians
	Bookmakers
	Bus conductors
	Bus conductors and coach drivers
	Bus inspectors
	Car park attendants
	Caretakers
	Chefs, cooks
	Cleaners, domestics
	Counterhands, catering assistants
	Crane drivers
	Customs and excise officers, immigration officers
	Drivers mates
	Drivers of road goods vehicles
	Entertainment and sports managers
	Fire service officers (leading fire officer and below)
	Fork truck drivers
	Hairdressers and barbers managers
	Hairdressers, barbers
	Hotel and accommodation managers
	Hotel porters
	Housekeepers (domestic)
	Housekeepers (non-domestic)
	Inspectors of factories, trading standards
	Kitchen porters
	Launderers, dry cleaners, pressers
	Messengers couriers



Education Fields	Occupations
	NCOs and other ranks
	Officers in armed forces
	Other occupations in sales and services n.e.c.
	Other personal service workers
	Other security and protective service occupations n.e.c.
	Other statutory inspectors
	Police officers (sergeant and below)
	Postal workers, mail sorters
	Prison service officers (below principal officer)
	Professional athletes, sports officials
	Publicans, innkeepers and club stewards
	Rail engine drivers
	Railway line operatives
	Railway station staff
	Railway station workers, supervisors and guards
	Refuse and salvage collectors
	Restaurant and catering managers
	Road sweepers
	Road transport depot inspectors
	Seafarers (merchant navy) barge and boat operatives
	Security guards and related occupations
	Sen. Fire service officers
	Sen. Police officers
	Senior Prison officers
	Shelf fillers
	Stevedores, dockers
	Taxi, cab drivers, chauffeurs and couriers
	Transport managers
	Travel agency managers
	Travel and flight attendants
	Undertakers
	Waiters, waitresses
	Water and sewerage plant attendants
	Window cleaners



Education Fields	Occupations
Other	At work no other info
	Factory machinists - no other info
	FAS workers - no other info
	Fulltime student
	Maintenance workers - no other info
	Other, no reason specified
	All other gainful occupation n.e.c
	All other labourers and related workers
	Goods porters
	Market/street traders
	Other associate professional and technical occupations n.e.c
	Scrap dealers
	Traffic wardens

Source: Analysis by SLMRU based on ISCED field of training data.



Appendix D Private Education Providers

1. HETAC data in Chapter 10 includes awards data for the following higher education providers:

Fidelity Investments, Ireland
The American College, Dublin
Griffith College
Kimmage Development Studies Centre
HSI Limerick Business School
Irish Academy of Public Relations
Milltown Institute of Theology And Philosophy
Newpark Music Centre
National College of Ireland
St. Nicholas Montessori College Ireland
The Open Training College
Thomas Crosbie Holdings Limited
Hibernia College
Carlow College
Institute of Business And Technology, Swords
ICD Business School/BPP Professional Education
Dublin Business School
St. Patrick's College, Thurles
Academy of Medical Laboratory Science

2. The data for professional institutes includes the following professional bodies:

Irish Auditing and Accounting Supervisory Authority Annual Report - data source for:

- ACCA (Association of Chartered Certified Accountants)
- ICAI (Institute of Chartered Accountants in Ireland)
- ICAI (Institute of Chartered Accountants in Ireland)
- ICPAI (Institute of Certified Public Accountants in Ireland)
- IIPA (Institute of Incorporated Public Accountants)
- CIMA (Chartered Institute of Management Accountants)

Irish Taxation Institute

Institute of Bankers

Kings Inns



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Fields of Training Manual (1997). Eurostat

OECD online education database: www.oecd.org

Statement on Raising National Mathematical Achievement (November 2008). Expert Group on Future Skills Needs

Tomorrow's Skills: Towards a National Skills Strategy (2006). Expert Group on Future Skills Needs

Annual Report 2007: Irish Auditing and Accounting Supervisory Authority

What Do Graduates Do? The Class of 2006 (2008). HEA



EGFSN MEMBERS

Ms. Una Halligan, Director, Government & Public Affairs for Ireland, Hewlett Packard, Chairperson

Ms. Marie Bourke, Head of Human Capital and Labour Market Policy, Forfás (also Head of Secretariat)

Ms. Inez Bailey, Director, National Adult Literacy Agency

Mr. George Bennett, IDA Ireland

Ms. Liz Carroll, Training and Development Manager, ISME

Mr. Ned Costello, Chief Executive, Irish Universities Association

Ms. Margaret Cox, Managing Director, ICE Group

Mr. Tony Donohoe, Head of Education, Social and Innovation Policy, IBEC

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Ms. Anne Forde, Principal Officer, Department of Education and Science

Mr. Roger Fox, Director of Planning and Research, FÁS

Mr. Pat Hayden, Principal Officer, Department of Enterprise, Trade and Employment

Mr. David Hedigan, Manager, Sectoral Enterprise Development Policy, Enterprise Ireland

Mr. Gary Keegan, Director, Acumen

Mr. John Martin, Director for Employment, Labour & Social Affairs, OECD

Mr. Dermot Mulligan, Assistant Secretary, Department of Enterprise, Trade and Employment

Mr. Frank Mulvihill, Former President, Institute of Guidance Counsellors

Dr. Brendan Murphy, President, Cork Institute of Technology

Mr. Alan Nuzum, CEO, Skillnets

Mr. Muiris O'Connor, Higher Education Authority

Mr. Peter Rigney, Industrial Officer, ICTU

Mr. Martin Shanahan, Divisional Manager, Science Technology and Human Capital, Forfás

Ms. Jacinta Stewart, Chief Executive, City of Dublin VEC



Publications by the Expert Group on Future Skills Needs

Report	Date of Publication
National Skills Bulletin 2009	July 2009
A Quantitative Tool for Workforce Planning in Healthcare: Example Simulations	June 2009
The Expert Group on Future Skills Needs Statement of Activity 2008	June 2009
A Review of the Employment and Skills Needs of the Construction Industry in Ireland	December 2008
Statement on Raising National Mathematical Achievement	December 2008
National Skills Bulletin 2008	November 2008
All-Island Skills Study	October 2008
Monitoring Ireland's Skills Supply: Trends in Education/Training Outputs 2008	July 2008
The Expert Group on Future Skills Needs Statement of Activity 2007	June 2008
Future Requirement for High-Level ICT Skills in the ICT Sector	June 2008
Future Skills Needs of the Irish Medical Devices Sector	February 2008
Survey of Selected Multi-National Employers' Perceptions of Certain Graduates from Irish Higher Education	December 2007
The Future Skills and Research Needs of the International Financial Services Industry	December 2007
National Skills Bulletin 2007	November 2007
Monitoring Ireland's Skills Supply: Trends in Educational/Training Outputs	June 2007
Tomorrow's Skills: Towards a National Skills Strategy	March 2007
National Skills Bulletin 2006	December 2006
Future Skills Requirements of the International Digital Media Industry: Implications for Ireland	July 2006
Careers and Labour Market Information in Ireland	July 2006
Skills at Regional Level in Ireland	May 2006
SME Management Development in Ireland	May 2006
Monitoring Ireland's Skills Supply: Trends in Educational/Training Outputs	January 2006
Data Analysis of In-Employment Education and Training in Ireland	December 2005
National Skills Bulletin 2005	October 2005



Skills Needs in the Irish Economy: The Role of Migration	October 2005
Languages and Enterprise	May 2005
Skills Requirements of the Digital Content Industry in Ireland Phase I	February 2005
Innovate Market Sell	November 2004
The Supply and Demand for Researchers and Research Personnel	September 2004
Literature Review on Aspects of Training of those at Work in Ireland	June 2004
Financial Skills Monitoring Report	November 2003
Responding to Ireland's Growing Skills Needs - The Fourth Report of the Expert Group on Future Skills Needs	October 2003
The Demand and Supply of Skills in the Biotechnology Sector	September 2003
Skills Monitoring Report - Construction Industry 2003/10	July 2003
Benchmarking Education and Training for Economic Development in Ireland	July 2003
The Demand and Supply of Engineers and Engineering Technicians	June 2003
The Demand and Supply of Skills in the Food Processing Sector	April 2003
National Survey of Vacancies in the Private Non-Agricultural Sector 2001/2002	March 2003
National Survey of Vacancies in the Public Sector 2001/2002	March 2003
The Irish Labour Market: Prospects for 2002 and Beyond	January 2002
Labour Participation Rates of the over 55s in Ireland	December 2001
The Third Report of the Expert Group on Future Skills Needs - Responding to Ireland's Growing Skills Needs	August 2001
Benchmarking Mechanisms and Strategies to Attract Researchers to Ireland	July 2001
Report on E-Business Skills	August 2000
Report on In-Company Training	August 2000
The Second Report of the Expert Group on Future Skills Needs - Responding to Ireland's Growing Skills Needs	March 2000
Business Education and Training Partnership 2nd Forum, Dublin	March 2000
Business Education and Training Partnership Report on the Inaugural Forum, Royal Hospital Kilmainham	March 1999
The First Report of the Expert Group on Future Skills Needs - Responding to Ireland's Growing Skills Needs	December 1998

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by

Skills and Labour Market Research Unit (SLMRU)
Planning & Research Department, FÁS
25 Clyde Road, Dublin 4, Ireland

Email: annemarie.hogan@fas.ie

Tel: +353 1 607 7436

Fax: +353 1 607 7401

www.fas.ie

www.skillsireland.ie