Benchmarking Education and Training

for Economic Development in Ireland

Expert Group on
Future Skills Needs

To the Tánaiste, and Minister
for Enterprise, Trade and Employment
and the Minister for Education and
Science

Forfás

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Section 1 Introduction

1.1 Objectives

Given today's knowledge-based economy, the availability of a highly skilled workforce is essential for countries both, to remain competitive and, to achieve and maintain a position as a global leader. It is therefore increasingly necessary for countries to understand, in terms of education and training, how they are performing nationally, how they compare with competitor countries, and what targets they should be set to ensure their success.

At a European level, the European Commission has acknowledged this need and has recently adopted European Benchmarks for education and training across five broad categories: Early School Leavers; Graduates in Mathematics, Science and Technology; Population having completed Upper Secondary[1] Education; Key Competencies; and Lifelong Learning. The five adopted benchmarks are:

- by 2010, an EU average rate of no more than 10% early school leavers should be achieved;
- the total number of graduates in mathematics, science and technology in the European Union should increase by at least 15% by 2010 while at the same time the level of gender imbalance should decrease;
- by 2010, at least 85% of 22 year olds in the European Union should have completed upper secondary education;
- by 2010, the percentage of low-achieving 15 year olds in reading literacy in the European Union should have decreased by at least 20% compared to the year 2000;
- by 2010, the European Union average level of participation in Lifelong Learning, should be at least 12.5% of the adult working age population (25-64 age group)[2].

Nationally, the Expert Group on Future Skills Needs has recognised the need for the establishment of a systematic process of benchmarking education and training in Ireland against other developed countries. The work of the Group requires to take a national overview of skills needs and provision, and needs to view sectoral needs in the context of that overview (and not in isolation of one another). It also needs to benchmark Ireland's performance in relation to our competitors.

By benchmarking a range of agreed indicators relating to education and training, this report aims to provide the context for the Expert Group to make recommendations in certain areas and set realistic comparative targets where feasible. It is hoped to produce the report on an annual basis although this will be contingent on available and reliable data. This will allow developments which impact on education and training to be assessed, progress to be monitored and targets to be reviewed. This process is important given the impact the National Framework of Qualifications (NQAI)[3] will have once implemented.

1 The term "secondary" is used in the OECD and throughout this document to refer to all second-level education i.e. Voluntary Secondary, Vocational, and Community and Comprehensive schooling.

2 Source: European Commission, (2002b); European Commission, Press Release, 5th May 2003.

3 The NQAI (National Qualifications Authority of Ireland) establishes, for the first time, a model for further education and training and higher education and training which incorporates all awards made within the State and which will facilitate access, transfer and progression. The framework consists of ten levels. The major award-types to fall under each level have been agreed and work is progressing on the categorisation of the remaining award-types.

It should be noted that this report deals with the labour market dimension of educational policy. Consideration is given throughout to the objective set out in the National Spatial Strategy[4] of achieving more balanced regional development.

This report brings together the most up-to-date data from existing comparative sources of education, training and labour market information. A range of data sources is utilised. The main sources for domestic statistics used include the CSO, HEA, DES and FÁS. International data is sourced primarily from the OECD and Eurostat. While some data used are somewhat outdated, it is hoped that more recent data will be available for future reports. While every effort has been made to compare like data with like, it is important to exercise a degree of caution bearing in mind that data may vary between countries due to methods of assessment used and differences in education and training systems i.e. structural, cultural, and organisational.

1.2 Report Structure

11 key indicators, agreed by the Benchmarking Subgroup[5], were selected for examination. These can be divided into four long-term and seven short-term indicators, with the former assessing the "stock" and the latter the "flow" of educated and skilled labour force in Ireland. These indicators will be reviewed on an annual basis and additional indicators included where deemed useful.

The report is structured as follows.

- Section 2 to Section 5 present long-term indicators. Both national and international data on demographic trends, labour force participation rates, literacy, and educational profile of the population are presented.

- Section 6 to Section 12 analyse short-term indicators relating to performance to school leaving certificate, apprenticeships, further education, higher education, postgraduate education, adult participation and company training.

4 Department of the Environment and local Government, 2002, *The National Spatial Strategy: People, Places and Potential.*

5 See Appendix 1 for full list of Subgroup members. The first Subgroup meeting was held in March 2002 with regular meetings thereafter.

Long-Term Indicators

Section 2 Demographic Trends

Given that it can be argued a country's people are its most important asset and form the cornerstone on which economic development and prosperity are built, it is crucial to assess the future supply of people and to assess the changing demographic characteristics of the population given their impact on the labour market.

2.1 National Population Growth

Over the past three decades, Irish population levels have been increasing steadily. The latest 2002 population data from the CSO estimates Ireland's current population at 3.9 million, almost 30% of which is based in the Dublin region.

Since 1996, Ireland's population has grown by 8%. As Table 2.1 indicates, net migration is now a main component of demographic growth. Between 1991 and 1996, 8% of population growth was attributed to net migration. Over the period 1996 to 2002, net migration accounted for over half the population increase. The success of the Irish economy throughout the 1990s may explain the increase in immigration. This, coupled with strong natural population growth, has resulted in significant population expansion.

TABLE 2.1: POPULATION CHANGE BY COMPONENTS, 1991-2002

YEAR	TOTAL POPULATION	NATURAL CHANGE	NET MIGRATION	TOTAL CHANGE
		(000)		
1991	3525.7	-	-	-
1996	3626.1	92.1	8.3	100.4
2002	3917.3	138.2	153.1	291.2

Source: CSO (2002), Census 2002 Preliminary Report

Assessing population change by region shows that all 8 NUTS3[6] regions experienced an increase in population between 1996 and 2002 (see Table 2.2). The largest growth was in the Mid-East region (19%) and smallest increase in the Dublin region (6%). In 2002, almost 30% of the population were located in Dublin. The Midlands region accounted for just 6% with the remaining 6 regions accounting for between 9% and 15%.

6 The NUTS (Nomenclature of Territorial Units) classifications are used by Eurostat to classify regions. The 8 NUTS3 regions in Ireland are Border, Dublin, Mid-East, Midlands, Mid-West, South-East, South-West, and West.

TABLE 2.2: POPULATION CHANGE BY REGION, 1996-2002

REGIONAL AUTHORITY AREA	POPULATION 1996	POPULATION 2002	INCREASE IN POPULATION	
			ACTUAL	% CHANGE
Border	407,295	432,366	25,071	6.2%
Dublin	1,058,264	1,122,600	64,336	6%
Mid-East	347,407	412,650	65,243	18.8%
Midland	205,542	225,588	20,046	9.8%
Mid-West	317,069	339,930	22,861	7.2%
South-East	391,517	423,540	32,023	8.2%
South-West	546,640	580,605	33,965	6.2%
West	352,353	380,057	27,704	7.9%
State	**3,626,087**	**3,917,336**	**291,249**	**8.0%**

Source: CSO (2002), Census 2002 Preliminary Report

2.2 International Population Growth

Table 2.3 benchmarks Ireland's population growth in recent years against that of other European countries, US, Canada, Korea, and Japan. Ireland ranks first out of 18 countries in terms of population growth over the period 1996-2002. Ireland's population growth of 8% lies significantly above the EU average of 1.8%. Germany ranks last with population growth of 0.6% over this period.

TABLE 2.3: COMPARATIVE POPULATION TRENDS, 1996-2002

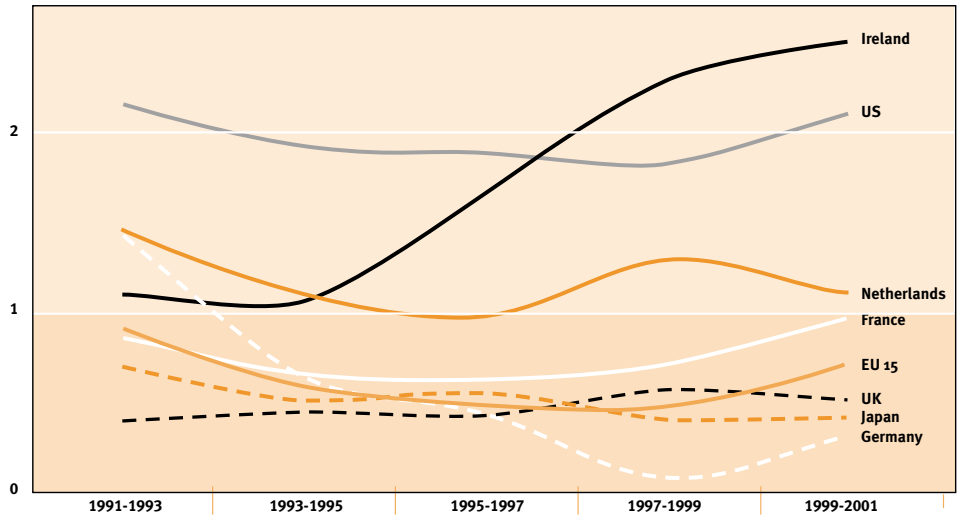
	1996	2002	1996-2002 % GROWTH	RANK
		(000)		
Ireland*	3626	3917	8.0%	1
US	265502	281454	6.01%	2
Korea	45525	48210	5.90%	3
Canada	29672	31362	5.69%	4
Netherlands	15531	16076	3.52%	5
Norway	4381	4534	3.50%	6
Spain	39279	40546	3.23%	7
France	58026	59487	2.52%	8
Denmark	5263	5380	2.23%	9
Belgium	10157	10325	1.66%	10
Greece	10476	10644	1.61%	11
UK	58076	59002	1.59%	12
Finland	5125	5206	1.59%	13
Austria	8059	8155	1.20%	14
Japan	125864	127299	1.14%	15
Italy	57397	57994	1.04%	16
Sweden	8841	8927	0.97%	17
Germany	81915	82425	0.62%	18
EU-15	**372241**	**378826**	**1.77%**	

Source: EC (2002a), AMECO Database.

**Irish data source: CSO (2002), Census 2002 Preliminary Report*

Figure 2.1 analyses the trend in the rate of population growth between 1991 and 2001. Between 1993 and 1999, Irish population increased at a far greater rate than other countries including the EU average. However, growth trends between 1999 and 2001 show signs of a slowdown in the rate of increase in population growth in Ireland in line with the EU average.

FIGURE 2.1 RATE OF POPULATION GROWTH, 1991-2001



Source: EC (2002a), AMECO Database

2.3 Population Forecasts: Total

The question as to whether the recent population expansion will continue to expand into the future is complex. A variety of different projections exist. Eurostat's baseline projections show a contraction in population by 2010 to 3.76 million, followed by an increase to 3.9 million by 2020. The uncertainty around these forecasts is borne out by Eurostat's own complementary high and low estimates, with a predicted population range of between 3.63 million and 3.94 million in 2010, and of between 3.65 million and 4.25 million in 2020. The United Nations, meanwhile, projects the Irish population having grown to 4.02 million in 2010 and 4.3 million by 2020[7].

In contrast to both these views, the CSO projects that the Irish population will increase from 3.9 million in 2002 to 4.2 million by 2011 and to 4.4 million by 2021. Using the 1996 Census of Population as a benchmark, the CSO projects population using six scenarios corresponding to three fertility and two migration variants. The above projections are based on the M1F2[8] scenario which is the most likely scenario according to current trends. Unlike the Eurostat and United Nations forecasts, which make similar assumptions across all countries included, the CSO projections are based on national trends and are deemed the most reliable projections.

According to CSO projections, 6 of the 8 NUTS3 regions will see their populations increase between 2002 and 2021.[9] Over the period 2002 – 2021, only two NUTS3 regions, Dublin and Mid-East, are expected to increase their share of the national population (by 5.1% and 0.4% respectively). This is at variance with the Government's National Spatial Strategy which aims towards balanced regional development and a more even pattern of population growth. It is hoped that by strengthening regional development, the present imbalance in regional population growth will level off as greater employment opportunities arise in other regions.

7 See *Eurostat Yearbook 2002* for population forecast comparisons for other countries.

8 The M1F2 (Migration 1 Fertility 2) scenario assumes a continuation of the net inward migration experienced over recent years, although at a declining rate, coupled with a decline in total fertility rate to 1.75% in 2011 and to remain constant thereafter.

9 Source: CSO, *Regional Population Projections 2001-2031*, June 2001

2.4 Population by Age Structure: Actual and Forecast

Analysis of the age structure of the Irish population reveals that Ireland has a relatively young population base. Table 2.4 highlights that children, youths and young adults account for proportionately more of the population than older inhabitants. While Ireland, at present, has a very young population, this population is showing signs of ageing (see Figure 2.2). This trend is not exclusive to Ireland but is being experienced in many developed economies. Dramatically lower fertility levels and strong growth in life expectancy in the EU over the past number of decades has resulted in a decline of ca. 20% in the number of young people while working age and the elderly populations have continued to expand. Examination of the birth rate in Ireland, however, shows an increase in recent years. Compared with an average of 52,000 births annually between 1991 and 2000, there were almost 58,000 births in 2001 and 60,500 in 2002 (source: CSO).

Table 2.4 shows that, in Ireland, the proportion of the population aged less than 20 fell between 1996 and 2002 from 33% to 29%. In contrast the proportion of people aged between 40 and 60 increased over this period from 22% to 24%.

The school-leavers age group (15-19 years) showed a significant level of decline between 1996 and 2002, constituting 8.2% of population in 2002 relative to 9.4% in 1996. This could have implications for the future Irish labour force if the number of new entrants every year continues to fall while greater numbers retire from the work force.

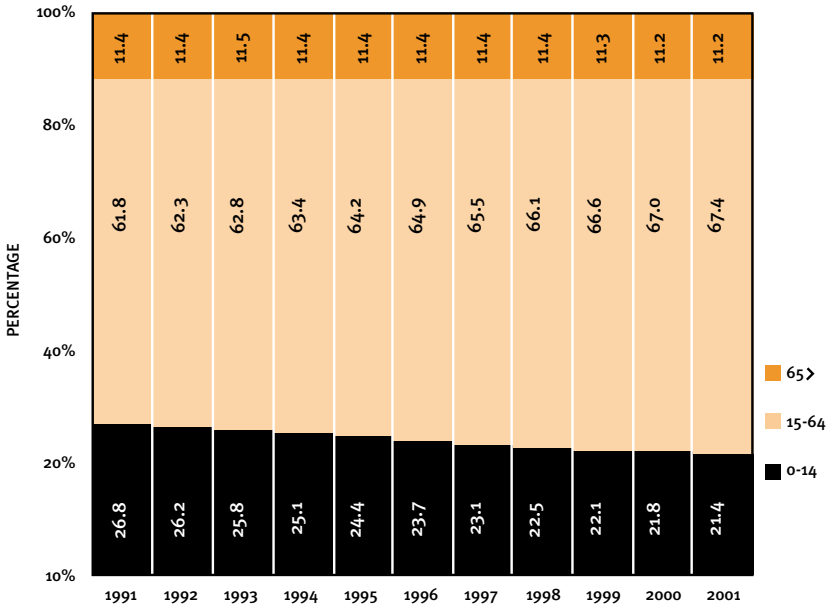
Figure 2.2 shows that the over 65 age cohort as a proportion of total population has remained relatively constant since 1991. However, this is set to increase over the next two decades. While it is projected to increase moderately over the period 2001-2010 (11% to 12% respectively), by 2010, over 65 year olds will represent 15% of the population. This increase will largely be attributed to the first of the baby-boom generation reaching retirement age in 2011.

TABLE 2.4: POPULATION BY AGE GROUP, 1996 AND 2002

	1996		2002	
	POPULATION BY AGE GROUP (000)	**PERCENTAGE OF TOTAL POPULATION %**	**POPULATION BY AGE GROUP (000)**	**PERCENTAGE OF TOTAL POPULATION %**
0-9 years	533.3	14.71%	538.8	13.83%
10-19 years	665.6	18.36%	602	15.45%
School-leavers 15-19 years	*339.5*	*9.4%*	*318.4*	*8.2%*
20-29 years	552.4	15.23%	674	17.30%
30-39 years	516.6	14.25%	560.7	14.39%
40-49 years	465.8	12.85%	511.6	13.13%
50-59 years	340.4	9.39%	423.5	10.87%
60-69 years	264.7	7.30%	282.8	7.26%
70-79 years	196.6	5.42%	200.3	5.14%
80 years & over	90.5	2.50%	103.3	2.65%
Total	**3,626**	**100.0%**	**3,897**	**100.0%**

Source: CSO (2002), Population & Migration Estimates April 2002

FIGURE 2.2 IRISH POPULATION BY BROAD AGE GROUP, 1991-2001



Source: EC (2002a), AMECO Database

Examination of school leaver projections show that for every 100 school leavers in 2000, there will only be 79 in 2011 (see Table 2.5). The number of 16-19 year olds in each of the NUTS3 regions is projected to decline over the next decade.

TABLE 2.5 PROJECTED SCHOOL LEAVERS (16-19 YEAR OLDS), 2000-2011 (2000=100)

REGION	2000	2002	2005	2010	2011
Border	100	94	87	76	73
Dublin	100	94	89	87	86
Mid-East	100	95	89	85	84
Midlands	100	93	83	71	70
Mid-West	100	93	84	77	75
South-East	100	94	87	78	76
South-West	100	94	86	78	77
West	100	95	87	78	76
State	**100**	**94**	**87**	**81**	**79**

Source: CSO (1999), Population and Labour Force Projections, 2001-2031

Currently, school leavers as a proportion of population is highest in the Dublin region with 27% of its population constituting 16 to 19 year olds (see Table 2.6). By 2010, this proportion is estimated to increase to 30%. The Mid-East is the only other region where school leavers as a percentage of population is projected to increase.

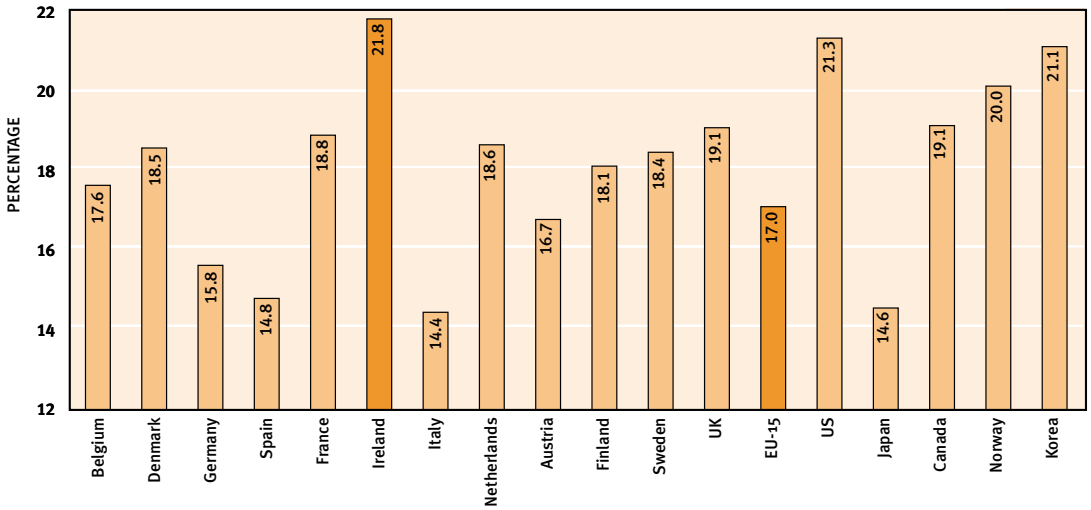
TABLE 2.6 REGIONAL PROPORTION OF SCHOOL LEAVERS (16-19 YEAR OLDS), 2000-2010

REGION	2000	2002	2005	2010
Border	11.6	11.6	11.6	10.9
Dublin	27.4	27.3	28.2	29.6
Mid-East	10.4	10.5	10.7	11.0
Midlands	5.8	5.8	5.5	5.1
Mid-West	8.9	8.9	8.6	8.5
South-East	10.9	10.8	10.8	10.6
South-West	14.8	14.8	14.5	14.4
West	10.1	10.2	10.1	9.8
State	**100**	**100**	**100**	**100**

Source: Mc Donagh & Patterson (2002)

While Figure 2.2 shows that the below 15 age cohort in Ireland has fallen from 26.8% of the population in 1991 to 21.4% in 2001, international comparison still shows Ireland to be the youngest economy in the EU (see Figure 2.3).

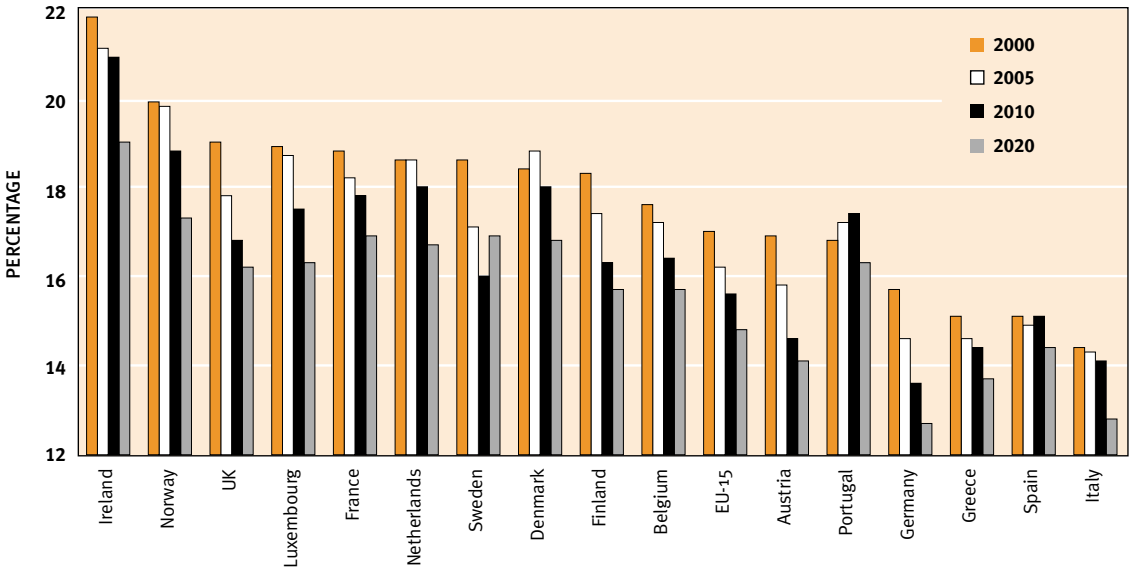
FIGURE 2.3 PROPORTION OF POPULATION AGED 0-14, 2000



Source: EC (2002a), AMECO Database

While in most EU countries, the process of population ageing will accelerate over the period 2010-2020 due to the ageing of the large post-war "baby-boom" generations, Figure 2.4 shows that, of the EU-15, Ireland is forecast to remain the youngest Member State over the next two decades.

FIGURE 2.4 PROPORTION OF POPULATION AGED 0-14, 2000-2020



Source: Eurostat (2002), European Social Statistics: Demographic

2.5 Summary and Key Issues

- Over the past six years, Ireland's population has grown faster than any of the 18 countries benchmarked although the rate of growth has decreased slightly over the past two years.

- The population is projected to increase over the next twenty years. It is expected to grow by 8% over the next decade and 6% between 2011 and 2021. Most of this growth will occur in the Dublin and Mid-East regions. This may have implications for regional imbalance.

- While Ireland, at present, has a very young population, this population is showing signs of ageing with the school-leavers age group as a proportion of population having declined by 1.2% over the past six years and projected to continue decreasing over the next decade. In addition, while the percentage of over 65s has remained relatively constant over the past decade, this is set to increase by 4% over the next 20 years. These trends will have implications for the future Irish labour force if the number of new entrants every year continues to fall while greater numbers retire from the workforce. A key issue which requires attention is the management of higher education given the projected demographic decline.

- Ireland currently has the youngest population in the EU and, despite trends towards an older population, is forecast to remain the youngest Member State of the EU-15 over the next two decades. This suggests that population ageing is not as serious an issue in Ireland for the medium-term.

Section 3 Workforce Participation Rates

The Participation Rate measures the number of persons in the labour force as a percentage of the total population aged 15 or over. A high participation rate is a key contributor to the success of an economy since it provides access to a larger and wider pool of skills and intellectual capability.

3.1 Irish Labour Force Participation Rates

According to the latest figures released by the CSO, there were 1.9 million people in the Irish labour force in the fourth quarter of 2002. 58% were male and 42% female. Table 3.1 shows the breakdown of the labour force by ILO economic status.

TABLE 3.1: IRISH LABOUR FORCE, Q4 2002

	MALES (000)	FEMALES (000)	TOTAL (000)
In labour force	1,083.4	771.3	1,854.7
In employment	1,031.8	738.9	1,770.7
In full-time employment	966.4	512.7	1,479.1
In part-time employment	65.4	226.2	291.6
Underemployed	1.3	1.4	2.7
Not underemployed	64	224.8	288.9
Unemployed	51.7	32.4	84.1
Seeking full-time employment	49.2	19.9	69.1
Seeking part-time employment	2.5	12.5	15.0
Not in labour force	447.8	806.6	1,254.4
Marginally attached to labour force	7.6	4.5	12.1
Total people aged 15 or over	**1,531.2**	**1,577.9**	**3,109.1**
Unemployment Rate %	4.8%	4.2%	4.5%
Participation Rate %	70.8%	48.9%	59.7%

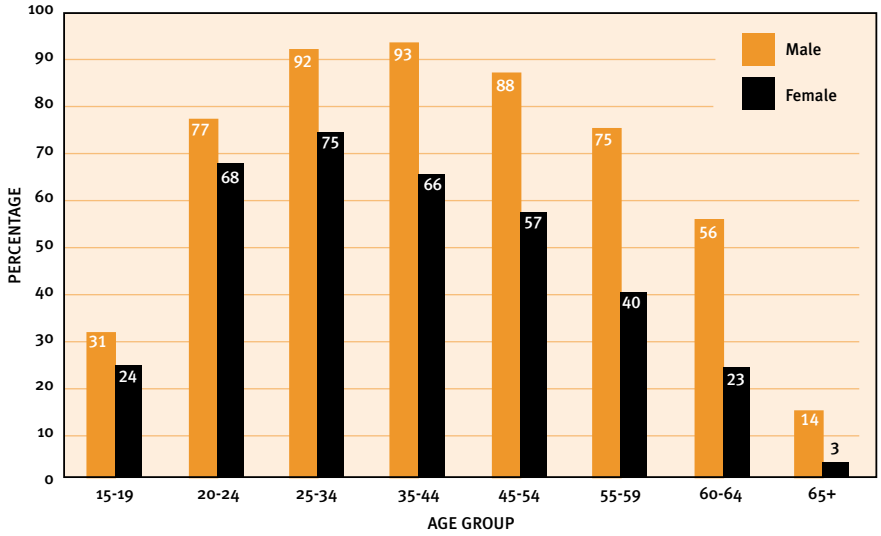
Source: CSO (2003), National Quarterly Household Survey Fourth Quarter 2002

The workforce participation rate was 60% in the fourth quarter of 2002. The male participation rate was found to be higher (71%) than the female rate (49%). While the overall participation rate has remained relatively static over the last two years (59.2% in Q4 2000 and 59.7% in Q4 2001), as has the rate for males, the female rate has increased marginally over this period (47.9% in Q4 2000, 48.6% in Q4 2001, 48.9% in Q4 2002). However, in order to meet the EU participation target of 70% overall and 60% for females by 2010, as set out by the Lisbon European Council in 2000, Ireland will need to increase participation rates considerably. Factors such as the availability of suitable jobs and financial incentives need to be examined.

Participation Rates by Age

Figure 3.1 examines participation rates in Ireland according to age groups and gender. Across all age groups, a higher proportion of males participate in the labour force than females. Over 90% of males aged 25-44 participate in the labour force compared to approximately 70% of females in the same age cohort.

FIGURE 3.1 PARTICIPATION RATE BY AGE GROUP AND GENDER, Q4 2002



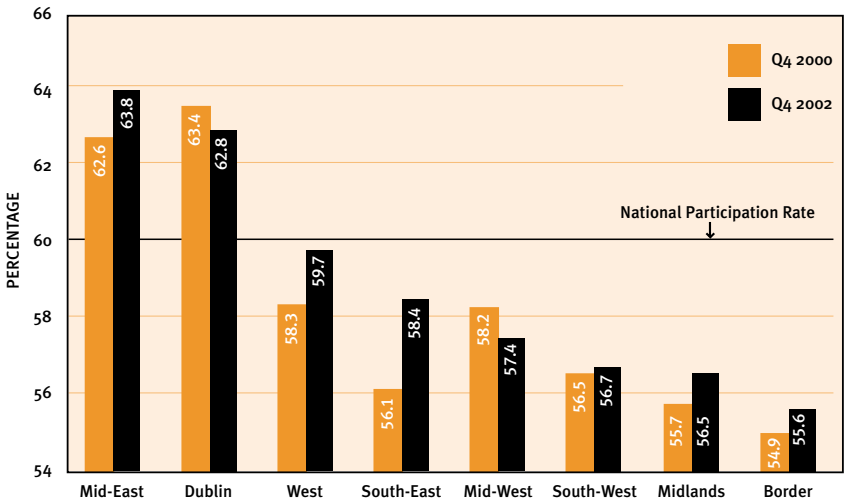
Source: CSO (2003), National Quarterly Household Survey Fourth Quarter 2002

Participation Rates by Region

Figure 3.2 compares regional participation rates in the fourth quarter of 2002. Only two regions, Mid-East and Dublin, were found to have rates above the national average of 60%. The Border region had the lowest participation rate of 56%. Participation rates increased across six of the eight regions in the two years leading to Q4 2002, while falling in both the Dublin and Mid-West regions. The variation in regional participation rates again has implications for the National Spatial Strategy's objective of achieving more balanced regional development.

To illustrate the effects of low participation rates on Ireland's labour supply, assume that every region achieved a participation rate equal to that of Dublin (63%). Based on this assumption, an estimated 98,000 extra people would be added to the Labour Force, an overall increase of 5%. This highlights the extent to which untapped manpower and skills exist in the regions and the need for participation rates to be increased.

FIGURE 3.2 PARTICIPATION RATE BY NUTS3 REGION, Q4 2000 – Q4 2002



Source: CSO (2003), National Quarterly Household Survey Fourth Quarter 2002

3.2 International Comparison

There are no directly comparable international figures with the CSO participation rates detailed above. However the OECD produces labour force participation rates for its member countries focusing on the 15-64 year old age group, as shown in Table 3.2.

In 2001, the participation rate for the 15-64 age cohort in Ireland is estimated at 68%, slightly below the EU and OECD averages (70%) and significantly below the UK rate of 75%. When compared with participation rates over the past two decades, it shows a considerable increase with participation rates in 1981 estimated at 60.2% (59.9% in 1986, 60.2% in 1991, 62.6% in 1996). Despite this increase, Ireland ranks 10th out of the 15 countries benchmarked. The male participation rate is given as 79%, slightly ahead of the EU average but just below the OECD average. The labour force participation rate for older Irish males (66%) is above the EU and OECD averages. The female participation rate is estimated at 56%, slightly below the EU and OECD averages.

TABLE 3.2: LABOUR FORCE PARTICIPATION RATES BY AGE AND GENDER, 2001

	MALES				FEMALES				
	15-24	25-54	55-64	15-64 (RANK)	15-24	25-54	55-64	15-64 (RANK)	OVERALL TOTAL (RANK)
Ireland	55.1	91.8	66.4	79.0 (9)	44.9	66.1	29.2	56.0 (10)	67.5 (10)
Austria	59.3	93.5	40.2	79.0 (8)	50.1	76.9	18.3	62.3 (8)	70.7 (8)
Belgium	37.2	90.9	36.6	72.7 (15)	30	70.7	15.8	54.5 (11)	63.6 (13)
Denmark	69.4	91.4	65.7	83.3 (2)	65	83.5	51.9	75.0 (2)	79.2 (2)
Finland	50.0	91.0	51.2	76.7 (10)	50.8	85.0	49.5	72.5 (3)	74.6 (5)
France	33.1	94.1	43.8	74.3 (13)	26.5	78.7	34.1	61.8 (9)	68 (9)
Germany	56.7	94.3	50.6	79.3 (7)	47.4	78.3	32.4	63.8 (7)	71.6 (7)
Greece	38.5	94.0	57.0	76.2 (11)	33.9	61.3	23.7	48.8 (14)	62.1 (14)
Italy	42.4	86.6	31.1	74.2 (14)	32.6	55.4	8.7	47.3 (15)	60.7 (15)
Luxembourg	37.1	94.2	35.5	76.1 (12)	32.1	65.1	14.4	52.0 (12)	64.2 (12)
Netherlands	74.7	94.0	51.5	84.2 (1)	72.4	74.2	28.3	66.9 (5)	75.7 (3)
Portugal	53.0	92.8	63.6	79.4 (6)	42.8	78.1	41.9	64.6 (6)	71.8 (6)
Spain	52.7	91.6	61.4	79.8 (5)	40.7	61.2	23.6	51.6 (13)	65.8 (11)
Sweden	54.2	90.6	73.5	81.4 (4)	54.4	85.6	67.3	77.1 (1)	79.3 (1)
UK	65.0	91.3	64.4	82.2 (3)	57.2	76.4	44.0	67.6 (4)	74.9 (4)
EU Average	**51.2**	**91.8**	**52.2**	**78.3**	**43**	**71.6**	**31.9**	**60.1**	**69.2**
OECD Average	**55.8**	**92.2**	**63.1**	**80.5**	**45.7**	**68**	**39.4**	**59.3**	**69.8**

Source: OECD (2002), Labour Force Statistics 1981-2001

3.3 Summary and Key Issues

- Over the last two decades, participation rates in Ireland have increased considerably. In 2002, the participation rate was estimated by the CSO at 60%. Despite this increase, Ireland ranks 10th out of 15 countries benchmarked, and lies significantly below the EU 2010 target of 70%.

- A considerably larger portion of males participate in the workforce than females. Of those aged 35-44, 93% of males participate compared to 66% of females. This is consistent across all age groups. Over the past two years, there has been a marginal increase in the female rate while the male participation rate has remained relatively static.

- Regional comparison shows participation rates to be considerably higher in the Dublin and Mid-East regions which may be attributed to increased work-related opportunities in these regions. Further examination of this issue is required in light of possible implications for regional imbalance.

- Policy should focus on increasing participation rates in Ireland not only to lower dependency rates but also to avail of the talents which non-participants have to offer.

- The issue of stimulating female rates needs to be addressed. Currently the female participation rate is 50%, while the EU target for 2010 is 60%. Methods of attracting more women into the workforce across all age cohorts, particularly married women, should be explored. This might include for example the wider deployment of family-friendly work arrangements.

Section 4 Literacy

Literacy involves the integration of listening, speaking, reading, writing and numeracy. It is both a basic life skill and an essential work skill and is the foundation for future learning. Literacy not only benefits the individual but has long-term implications for the economy and as such is widely recognised as being fundamental to high economic and competitive performance. Given the speed at which economies are developing, people require to maintain and enhance their literacy skills in order to fully participate in society. It is therefore crucial that a high level of literacy competency be developed at school and maintained throughout life.

4.1 Youth Literacy Rates[10]

OECD's Programme for International Student Assessment (PISA) initiative provides insight into Ireland's performance in terms of reading, numeracy and scientific literacy with regard to other developed economies. PISA aims to assess the basic skills of fifteen year olds in participating countries across these three domains. The increasing role which science, mathematics and technology are playing in modern economies has resulted in numeracy and science literacy becoming key requirements for those participating or wishing to participate in the labour force. By assessing youth literacy rates, Ireland can compare its competence in supplying tomorrow's workforce with the core skills necessary to develop an efficient labour force.

This section presents data from the 2000 PISA, which primarily focused on reading literacy. In future PISA cycles, the focus will be on numeracy literacy (2003) and scientific literacy (2006).

Reading Literacy[11]

PISA examines reading literacy at five levels, each representing tasks of increasing complexity. Mean scores are used as an indicator of proficiency in reading of 15-year olds in each country. Table 4.1 compares the mean scores of 27 OECD countries. Ireland performs well ranking 5th with regard to reading literacy with the indexed mean average score some 5.4% above the OECD average.

10 Adult literacy rates are presented in Appendix 2. The latest estimates for adult literacy rates in Ireland refer to 1996.

11 Reading literacy is defined by PISA as "understanding, using and reflecting on written texts, in order to achieve one's goals, to develop one's knowledge and potential, and to participate in society".

TABLE 4.1: LITERACY LEVELS OF 15 YEAR OLDS BY OECD COUNTRY, 2000

	READING LITERACY MEAN SCORE & (RANK)		NUMERACY MEAN SCORE & (RANK)		SCIENTIFIC LITERACY MEAN SCORE & (RANK)	
Finland	546	(1)	536	(4)	538	(3)
Canada	534	(2)	533	(6)	529	(5)
New Zealand	529	(3)	537	(3)	528	(6)
Australia	528	(4)	533	(5)	528	(7)
Ireland	527	**(5)**	503	**(15)**	513	**(9)**
Korea	525	(6)	547	(2)	552	(1)
United Kingdom	523	(7)	529	(8)	532	(4)
Japan	522	(8)	557	(1)	550	(2)
Sweden	516	(9)	510	(14)	512	(10)
Austria	507	(10)	515	(11)	519	(8)
Belgium	507	(11)	520	(9)	496	(17)
Iceland	507	(12)	514	(13)	496	(16)
Norway	505	(13)	499	(16)	500	(13)
France	505	(14)	517	(10)	500	(12)
United States	504	(15)	493	(18)	499	(14)
Denmark	497	(16)	514	(12)	481	(22)
Switzerland	494	(17)	529	(7)	496	(18)
Spain	493	(18)	476	(21)	491	(19)
Czech Republic	492	(19)	498	(17)	511	(11)
Italy	487	(20)	457	(23)	478	(23)
Germany	484	(21)	490	(19)	487	(20)
Hungary	480	(22)	488	(20)	496	(15)
Poland	479	(23)	470	(22)	483	(21)
Greece	474	(24)	447	(25)	461	(24)
Portugal	470	(25)	454	(24)	459	(25)
Luxembourg	441	(26)	446	(26)	443	(26)
Mexico	422	(27)	387	(27)	422	(27)
OECD Average	**500**		**500**		**500**	

Source: www.pisa.oecd.org

Numeracy / Mathematical Literacy[12]

An assessment of numeracy literacy shows that while Ireland still performs above the OECD country average, its performance lies below its equivalent mean score for reading literacy. Ranked 15th Ireland is in the bottom half of the 27 countries with regard to numeracy.

Scientific Literacy[13]

Ireland performs well ranking 9th out of the 27 countries for scientific literacy. Although Ireland's mean score of 513 lies above the OECD average, the top performers, Korea and Japan, both scored above 550, some 10% above the average.

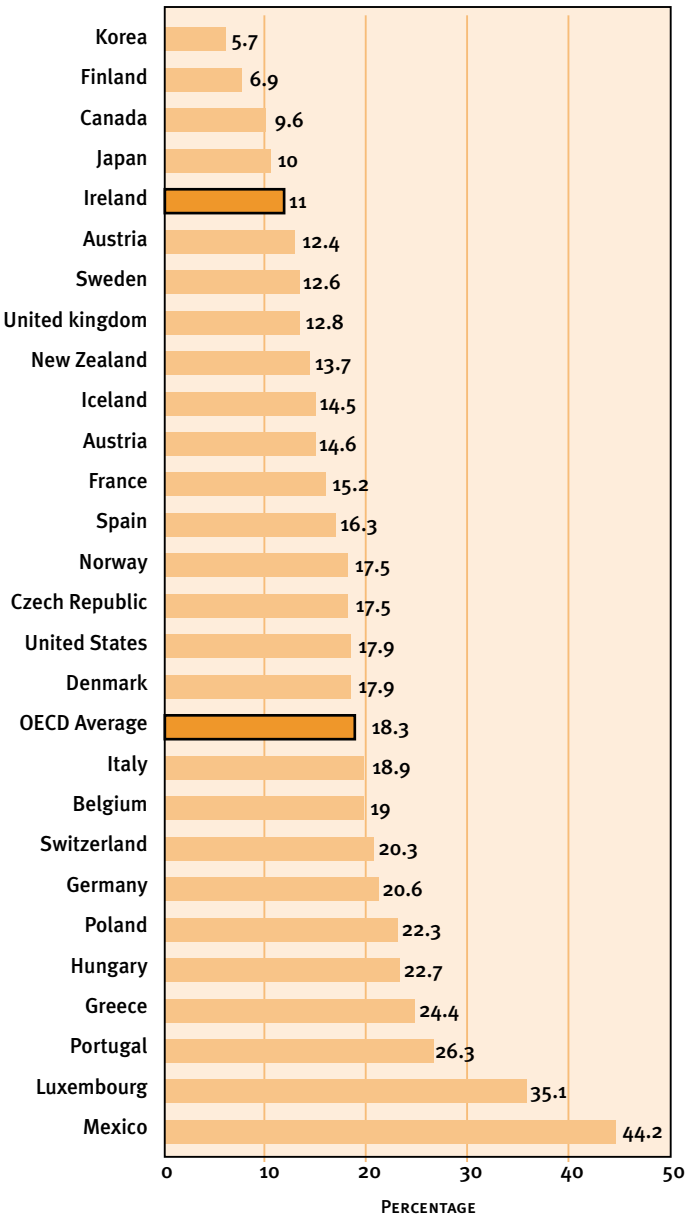
Low Achievers

An examination of low achievers on the PISA reading literacy scale shows Ireland to perform strongly (see Figure 4.1). Based on the percentage of students in each country on or below Level 1 on the PISA reading literacy scale, Ireland ranks 5th out of 27 countries with 11% of 15 year olds assessed found to be at this level compared with an OECD average of 18%.

12 Numeracy/Mathematical literacy is defined by PISA as "an individual's capacity to identify and understand the role that mathematics plays in the world, to make well-founded mathematical judgements and to engage in mathematics, in ways that meet the needs of that individual's current and future life as a constructive, concerned and reflective citizen".

13 Scientific literacy is defined by PISA as "the capacity to use scientific knowledge, to identify questions and draw evidence based conclusions, in order to help make decisions about the natural world and the changes made to it through human activity".

FIGURE 4.1: 15 YEAR OLDS AT LEVEL 1 OR BELOW ON THE PISA READING LITERACY SCALE (% OF TOTAL), BY COUNTRY, 2000



Source: PISA data. Cited in: European Commission (2002b)

By Gender

Table 4.2 presents the PISA results by gender. In all countries, girls outperformed boys in combined reading literacy. In Ireland, girls scored 29 points higher than boys. The opposite is found for numeracy literacy with males in all but two countries (Iceland and New Zealand) performing better than females. In Ireland, males scored 13 points more than females. Finally, scientific literacy scores varied between boys and girls by relatively few points with males outperforming females in 11 of the 27 countries. In Ireland, girls scored 6 points higher than males.

TABLE 4.2: LITERACY LEVELS OF 15 YEAR OLDS BY OECD COUNTRY, 2000

	READING LITERACY			NUMERACY			SCIENTIFIC LITERACY		
	MALES	FEMALES	SCORE DIF.	MALES	FEMALES	SCORE DIF.	MALES	FEMALES	SCORE DIF.
Australia	513	546	-34	539	527	12	526	529	-3
Austria	495	520	-26	530	503	27	526	514	12
Belgium	492	525	-33	524	518	6	496	498	-2
Canada	519	551	-32	539	529	10	529	531	-2
Czech Republic	473	510	-37	504	492	12	512	511	1
Denmark	485	510	-25	522	507	15	488	476	12
Finland	520	571	-51	537	536	1	534	541	-6
France	490	519	-29	525	511	14	504	498	6
Germany	468	502	-35	498	483	15	489	487	3
Greece	456	493	-37	451	444	7	457	464	-7
Hungary	465	496	-32	492	485	7	496	497	-2
Iceland	488	528	-40	513	518	-5	495	499	-5
Ireland	513	542	-29	510	497	13	511	517	-6
Italy	469	507	-38	462	454	8	474	483	-9
Japan	507	537	-30	561	553	8	547	554	-7
Korea	519	533	-14	559	532	27	561	541	19
Luxembourg	429	456	-27	454	439	15	441	448	-7
Mexico	411	432	-20	393	382	11	423	419	4
New Zealand	507	553	-46	536	539	-3	523	535	-12
Norway	486	529	-43	506	495	11	499	505	-7
Poland	461	498	-36	472	468	5	486	480	6
Portugal	458	482	-25	464	446	19	456	462	-6
Spain	481	505	-24	487	469	18	492	491	1
Sweden	499	536	-37	514	507	7	512	513	0
Switzerland	480	510	-30	537	523	14	500	493	7
United Kingdom	512	537	-26	534	526	8	535	531	4
United States	490	518	-29	497	490	7	497	502	-5
OECD Average	**485**	**517**	**-32**	**506**	**495**	**11**	**501**	**501**	**0**

Source: OECD (2000), *Knowledge and Skills for Life: First Results from the OECD Programme for International Student Assessment (PISA) 2000*

4.2 Summary and Key Issues

- For those aged 15, Ireland ranked 5th, 15th and 9th for reading, numeracy and science literacy respectively compared with 27 OECD countries. Since youth literacy rates broadly determine adult literacy rates, it is essential to maintain and enhance this high achievement in reading and science literacy and to improve Ireland's ranking for numeracy literacy. In particular, attention needs to be directed towards improving the performance in numeracy literacy of girls. The issue of increasing reading literacy in boys should also be examined. The possibility of setting targets for literacy levels across these three categories needs to be explored, together with methods of early intervention in order to ensure the availability of high literacy skills in the future adult population and workforce.

- While Ireland ranks strongly in terms of low achievers on the PISA reading literacy scale (5th out of 27 countries), there is a need for policy to examine methods of reducing the number of low achievers (11% of 15 year olds assessed in 2000) given the possible implications on the early school leaver rate.

Section 5 Educational Profile of Workforce and Population

Not only is it important to have an adequate supply of people available in the workforce, it is also important to ensure that these people possess the necessary skills to allow the economy to develop and grow to its full potential. While primary education aims to instil the basic skills needed to actively partake in society, the further development of these skills through continued education and training is extremely important and seen as the main way for countries to secure long-term economic growth and general social welfare.

5.1 Educational Attainment in Ireland

Using data from the National Quarterly Household Survey, it is possible to assess the educational background of the Irish population aged 15 years and over (see Table 5.1). In 2002 (Q2), 59% of the adult population had achieved an upper secondary level education or higher. This was a marginal improvement on the 2001 (Q2) level of 58%. The overall trend is of an increasingly educated population however with a higher proportion of women (62%) than men (57%) attaining levels of education beyond lower secondary level. Comparing educational attainment across regions shows the Dublin region to have the highest level of attainment followed by the West region (66% and 62% with at least an upper secondary level education respectively). The Border region was found to have the lowest proportion having achieved at least upper secondary level education (46%).

TABLE 5.1 DISTRIBUTION OF POPULATION AGED 15 AND OVER BY EDUCATIONAL ATTAINMENT AND NUTS3 REGION, Q2 2001 - Q2 2002

EDUCATION LEVEL	2001 Q2 STATE %	2002 Q2 STATE %	2002 Q2 BY NUTS3 REGION (%)							
			BORDER	DUBLIN	MIDLANDS	MID-EAST	MID-WEST	SOUTH-EAST	SOUTH-WEST	WEST
Pre-primary	1.2	1.0	0.8	0.9	1.2	0.8	1.6	0.9	1.4	0.7
Primary	19.7	18.8	28.6	16.1	20.0	16.9	17.1	21.4	18.0	18.1
Lower Secondary	21.2	21.0	25.0	17.5	26.7	21.1	20.4	26.5	20.9	19.1
Upper Secondary	26.4	26.4	21.4	26.3	26.6	25.4	32.2	25.0	25.0	30.5
Post-secondary Non-tertiary	11.2	10.8	9.3	9.7	11.1	13.1	11.0	11.4	12.8	9.4
Non-degree 3rd Level	8.4	8.5	7.3	9.2	6.6	9.6	7.3	6.5	9.8	8.9
Degree 3rd Level	11.7	13.1	7.3	19.6	7.7	12.7	10.0	8.1	11.8	12.9
Advanced Research Qualification	0.4	0.4	0.2	0.7	*	0.3	0.3	0.1	0.3	0.3
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: CSO, QNHS 2001 Q2 & 2002 Q2

5.2 International Comparison

Secondary Education

A study of the proportion of adults who have graduated from secondary school education provides a guide to the basic skill levels of a population upon leaving school. Table 5.2 compares Ireland's secondary school graduation rates with those of fellow OECD Member States.

Using data for 2001, Table 5.2 shows that 58% of the Irish population aged between 25 and 64 have successfully completed secondary education, ranking Ireland 16th out of 20 countries. This proportion is slightly below the OECD average rate of 64%[14]. However, there are signs that educational attainment in Ireland is rising with a significantly higher proportion of 25-34 year olds completing upper secondary level education than 55-64 year olds. This reflects Ireland's historic underinvestment in education and the effects of the introduction of free education in 1967.

TABLE 5.2 % OF POPULATION WITH UPPER SECONDARY EDUCATION OR HIGHER, 2001

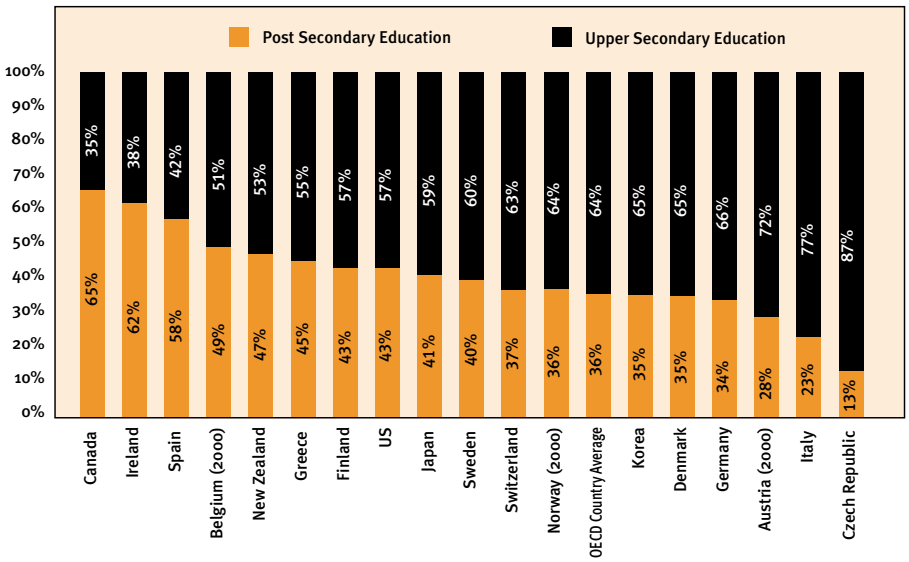
	25-64 YEARS (RANK)		25-34 YEARS (RANK)		55-64 YEARS (RANK)	
US	88	(1)	88	(8)	83	(1)
Switzerland	87	(2)	92	(4)	81	(2)
Czech Republic	86	(3)	92	(5)	76	(3)
Norway (2000)	85	(4)	93	(3)	70	(6)
Germany	83	(5)	85	(11)	76	(4)
Japan	83	(6)	94	(2)	63	(9)
Canada	82	(7)	89	(7)	67	(7)
Sweden	81	(8)	91	(6)	65	(8)
Denmark	80	(9)	86	(10)	72	(5)
Austria (2000)	76	(10)	83	(12)	63	(10)
New Zealand	76	(11)	82	(13)	60	(11)
Finland	74	(12)	87	(9)	51	(13)
Korea	68	(13)	95	(1)	30	(17)
UK (2000)	63	(14)	68	(17)	55	(12)
Belgium (2000)	59	(15)	75	(14)	38	(14)
Ireland	**58**	**(16)**	**73**	**(15)**	**35**	**(16)**
Greece	51	(17)	73	(16)	28	(18)
Poland	46	(18)	52	(20)	36	(15)
Italy	43	(19)	57	(18)	22	(19)
Spain	40	(20)	57	(19)	17	(20)
OECD Average	**64**		**74**		**49**	

Source: OECD (2002), Education at a Glance 2002

While Table 5.2 shows the proportion of the adult population with at least upper secondary education, this data can be broken down further to show what proportion of these went on to attain post-secondary level education. Figure 5.1 presents this breakdown and shows Ireland as having the 2nd highest proportion of adults with upper secondary level education following on to attain a post-secondary level education.

14 An EU target of at least 85% of 22 year olds to have completed upper secondary education by 2010 has been recently introduced.

FIGURE 5.1 DISTRIBUTION OF THE ADULT POPULATION (25-64 YEAR OLDS) BY HIGHEST LEVEL OF EDUCATIONAL ATTAINMENT, 2001



Source: Calculated by Author. Derived from OECD (2002), Education at a Glance 2002

Tertiary Education

The OECD splits tertiary education into 'A' and 'B' bands. Type A qualifications are largely theoretically based and designed to provide sufficient qualifications for entry to advanced research programmes and professions with high skill requirements. Type A accreditation ranges from 3 to 5 years and can be equated to university degrees, postgraduate diplomas and Masters.

Type B qualifications are more occupationally oriented and lead to direct labour market access. These courses are typically shorter in duration than Type A courses, usually between 2 and 3 years, and lead to Certificates and Diplomas.

Table 5.3 details the proportion of the Irish population, with the comparable OECD country average figures for 2001, with Type B Tertiary education. Ireland ranks 11th out of the 20 countries benchmarked. Examination of broad age groups shows a higher proportion of younger adults having attained Tertiary Type B education than older adults.

TABLE 5.3 % OF POPULATION WITH AT LEAST TERTIARY TYPE B EDUCATION, 2001

	25-64 YEARS	(RANK)	25-34 YEARS	(RANK)	55-64 YEARS	(RANK)
Canada	21	(1)	25	(1)	15	(3)
Denmark	19	(2)	18	(5)	16	(2)
Finland	17	(3)	20	(3)	12	(4)
New Zealand	15	(4)	12	(11)	17	(1)
Belgium (2000)	15	(5)	19	(4)	9	(7)
Sweden	15	(6)	17	(6)	10	(6)
Japan	15	(7)	23	(2)	5	(14)
France	11	(8)	17	(7)	6	(11)
Germany	10	(9)	8	(15)	10	(5)
Switzerland	10	(10)	10	(12)	8	(8)
Ireland*	**9**	**(11)**	**13**	**(9)**	**5**	**(12)**
United States	9	(12)	9	(13)	7	(10)
United Kingdom	8	(13)	9	(14)	7	(9)
Austria (2000)	7	(14)	8	(16)	5	(13)
Spain	7	(15)	12	(10)	2	(17)
Korea	7	(16)	15	(8)	1	(20)
Iceland	6	(17)	6	(18)	4	(15)
Greece	5	(18)	7	(17)	3	(16)
Netherlands (2000)	3	(19)	2	(20)	2	(18)
Norway (2000)	3	(20)	3	(19)	2	(19)
OECD Average	**8**		**10**		**6**	

Source: OECD (2002), Education at a Glance 2002
**Source: CSO, QNHS 2001 Q2*

In terms of Type A tertiary qualifications including Ph.Ds, Table 5.4 shows that in 2001 14% of the adult population in Ireland had attained this level of education compared to 26% in the top ranking country, the United States. Overall, Ireland ranked 13th out of 20 countries. Examination of age cohorts shows younger adults to have achieved higher education levels than older adults.

TABLE 5.4 % OF POPULATION WITH AT LEAST TERTIARY TYPE A EDUCATION, 2001

	25-64 YEARS	(RANK)	25-34 YEARS	(RANK)	55-64 YEARS	(RANK)
United States	28	(1)	30	(2)	24	(1)
Norway (2000)	26	(2)	32	(1)	19	(2)
Netherlands (2000)	21	(3)	24	(6)	15	(4)
Canada	20	(4)	25	(3)	15	(3)
Japan	19	(5)	24	(5)	10	(11)
Iceland	19	(6)	21	(8)	11	(9)
United Kingdom	18	(7)	21	(9)	12	(7)
Korea	17	(8)	25	(4)	8	(14)
Sweden	17	(9)	20	(11)	15	(5)
Spain	17	(10)	24	(7)	8	(12)
Switzerland	16	(11)	16	(17)	13	(6)
Finland	15	(12)	18	(12)	11	(8)
Ireland	**14**	**(13)**	**20**	**(10)**	**8**	**(15)**
New Zealand	14	(14)	17	(14)	7	(17)
Germany	13	(15)	14	(18)	10	(10)
Greece	12	(16)	17	(16)	6	(18)
Belgium (2000)	12	(17)	17	(15)	8	(16)
France	12	(18)	18	(13)	8	(13)
Denmark	8	(19)	11	(19)	4	(20)
Austria (2000)	7	(20)	7	(20)	4	(19)
OECD Average	**15**		**19**		**10**	

Source: OECD (2002), Education at a Glance 2002

Educational Attainment by Gender

Examination of educational attainment by gender shows that in 2001 a higher proportion of females than males had achieved an education of at least upper secondary level. This was also found to be the case for educational levels at or above tertiary level (see Table 5.5). These results were found to be consistent across age groups.

TABLE 5.5 EDUCATIONAL ATTAINMENT OF THE POPULATION BY GENDER, 2001

		AT LEAST UPPER SECONDARY			AT LEAST TERTIARY EDUCATION		
		25-64	25-34	55-64	25-64	25-34	55-64
Austria (2000)	Males	82	86	73	17	16	15
	Females	69	81	52	11	14	5
Belgium (2000)	Males	59	74	42	27	33	20
	Females	58	77	35	28	39	14
Canada	Males	81	88	68	39	45	30
	Females	82	91	65	44	56	30
Czech Republic	Males	91	93	86	13	12	12
	Females	82	92	68	9	11	7
Denmark	Males	82	85	75	24	25	21
	Females	79	88	69	29	34	19
Finland	Males	72	84	51	29	30	25
	Females	76	90	51	36	46	22
Germany	Males	87	87	85	28	23	28
	Females	78	84	67	18	20	12
Greece	Males	54	69	33	20	21	13
	Females	49	76	23	16	27	6
Ireland*	Males	55	71	35	23	31	14
	Females	60	76	36	24	36	13
Italy	Males	44	55	26	10	10	8
	Females	43	60	18	10	13	5
Japan	Males	83	92	65	36	46	20
	Females	83	95	61	32	49	11
Korea	Males	76	95	45	30	42	15
	Females	59	91	16	18	35	3
New Zealand	Males	77	82	65	26	26	23
	Females	74	82	55	32	31	26
Norway (2000)	Males	86	93	73	28	30	23
	Females	84	94	66	29	40	18
Poland	Males	39	44	34	11	12	11
	Females	52	60	38	13	18	10
Spain	Males	42	55	22	24	32	14
	Females	40	59	14	23	39	7
Sweden	Males	79	90	63	30	34	24
	Females	82	91	67	34	39	25
Switzerland	Males	90	93	87	35	35	33
	Females	85	91	75	16	17	8
UK (2000)	Males	69	70	63	27	30	20
	Females	57	65	42	25	29	17
US	Males	87	87	83	37	36	35
	Females	88	89	82	37	42	27
OECD Average	**Males**	**66**	**73**	**54**	**24**	**26**	**18**
	Females	**62**	**74**	**43**	**22**	**29**	**13**

Source: OECD (2002), Education at a Glance 2002

**Note: Data on "at least Tertiary Education" sourced from CSO, QNHS 2001 Q2*

5.3 Summary and Key Issues

- It is widely acknowledged that the lack of educational attainment remains a critical factor in the risk and persistence of long-term unemployment. This, together with an increasing demand for a highly skilled workforce arising from Ireland's strive towards a knowledge-based economy, makes it imperative to improve upon educational attainment levels.

- In recent years, the overall trend in Ireland is of an increasingly educated population with a greater proportion of women than men achieving higher levels of education. Trends also show 24-65 year olds in the Dublin region to have achieved a higher level of educational attainment in comparison with other NUTS3 regions which may have implications for regional imbalance.

- Despite this overall increase, Ireland compares poorly with other OECD countries in terms of the proportion of the population having attained at least upper secondary education. At 58% of the population, Ireland ranks 16th of 20 countries benchmarked. While this proportion is low, what is encouraging is that 62% of these continue to attain a post-secondary level education. This is the 2nd highest rate among the countries assessed. A key issue therefore is to increase retention and success rates at secondary level to ensure an increased proportion of the population have acquired the basic skills needed to successfully participate in a changing economy. In addition, by providing a greater proportion of students with upper secondary level education, it is likely that the flow of students to higher education will increase.

- Comparison of tertiary educational attainment across 20 countries shows Ireland to rank 11th in terms of the proportion of the population having achieved Tertiary Type B education. For Type A education, Ireland ranks 13th. Policy needs to examine the factors relating to the low achievement of third level qualifications in Ireland. The possibility of increasing progression rates from certificate and diploma courses to degree programmes should be assessed.

- Finally, given that the educational attainment of men in Ireland is found to be lower than women, policy should examine measures to increase male participation rates in education.

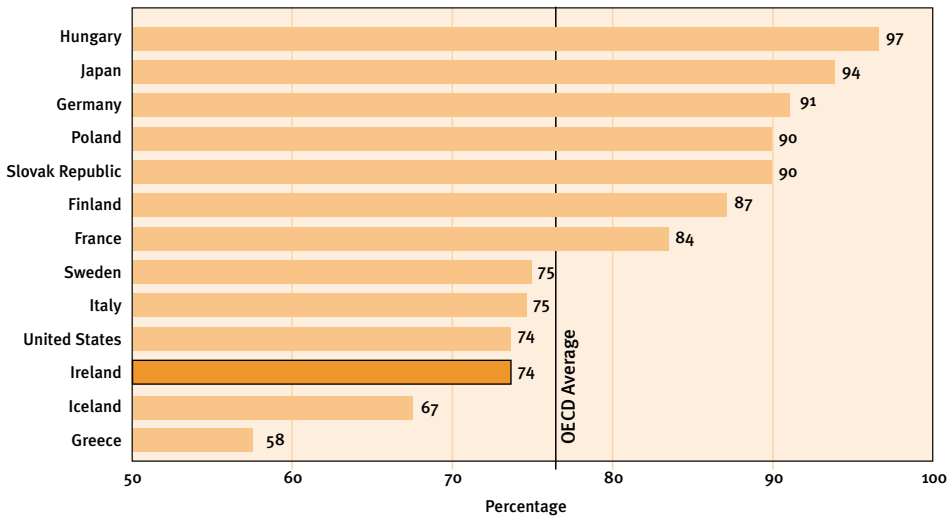
Section 6 Performance to School Leaving Certificate

The attainment of an upper level secondary education is becoming increasingly important in today's knowledge-driven economy. Not only does it increase success in transitioning directly into the labour market, it also provides access to education and training in higher educational institutes.

6.1 International Comparison

Figure 6.1 compares the ratio of upper secondary graduates to the population at the typical age of graduation for 13 OECD countries. Ireland ranks 11th, lying below the OECD average with 74% of the population at the typical age of graduation achieving a leaving certificate standard of education in 2000[15].

FIGURE 6.1 UPPER SECONDARY GRADUATION RATES, 2000



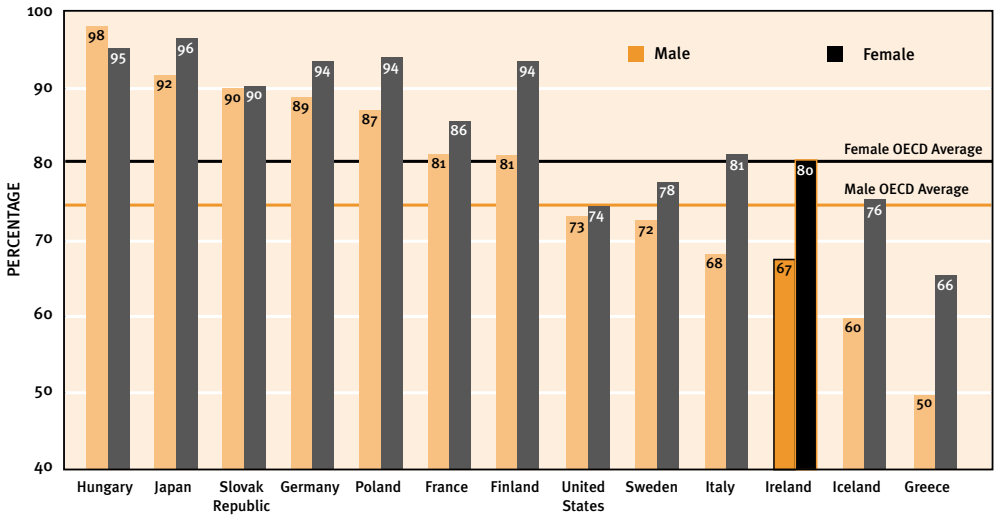
Source: OECD (2002), Education at a Glance 2002

Gender

Further examination of these results show that in Ireland 80% of the female population at the typical age of graduation achieved an upper secondary level education in 2000, and only 67% of the male population (see Figure 6.2). This gap between male and female levels is very high by international comparison. While the graduation rate for females was in line with the OECD average of 80%, the male rate was found to be considerably less than the OECD average of 74%.

15 Given that only 13 OECD countries provided data for this indicator, it is possible that Ireland is being assessed against top performers.

FIGURE 6.2 UPPER GRADUATION RATES BY GENDER, 2000

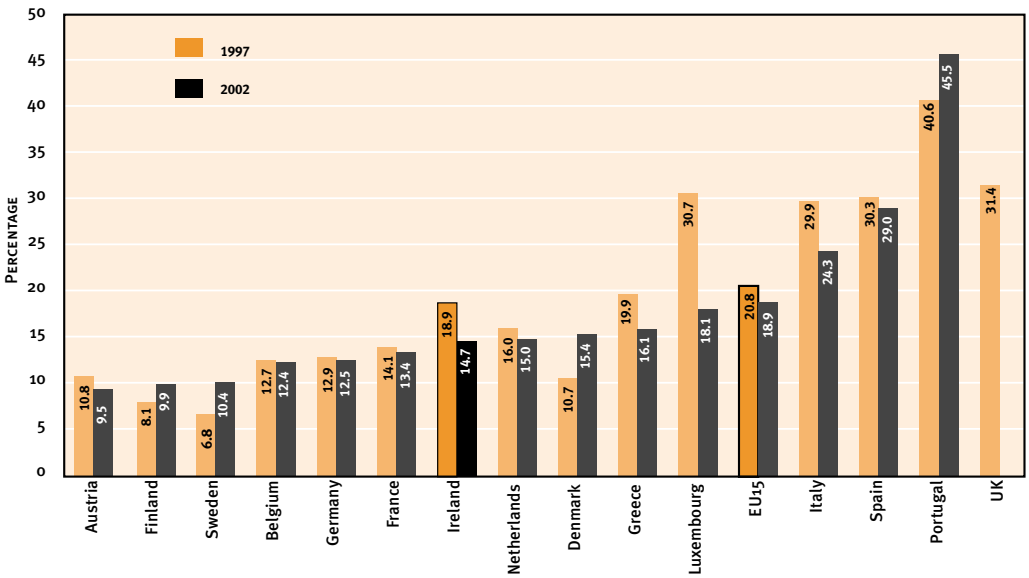


Source: OECD (2002), Education at a Glance 2002

Early School Leavers – 18-24 Age Cohort [16]

Figure 6.3 compares the percentage of 18-24 year olds across 15 European countries who have dropped out of school having attained no more than a lower secondary education and who are not partaking in further education or training. In 1997, Ireland's school-leaver rate was 19%. By 2002, this rate had fallen to 15% ranking Ireland 7th of the 15 countries examined. The EU average was estimated at 19%. Drop-out rates varied considerably between countries ranging from 10% in Austria to 46% in Portugal. Compared to 1997 data, drop-out rates appear to have improved (i.e. reduced in most countries) although the worst performer in 1997 (Portugal) saw its rate increase further in 2001 as did the best three performers from 1997 (Sweden, Finland and Denmark).

FIGURE 6.3 PROPORTION OF 18-24 AGE COHORT HAVING ACHIEVED LOWER SECONDARY LEVEL EDUCATION OR LESS AND NOT ATTENDING EDUCATION OR TRAINING, 1997 & 2002



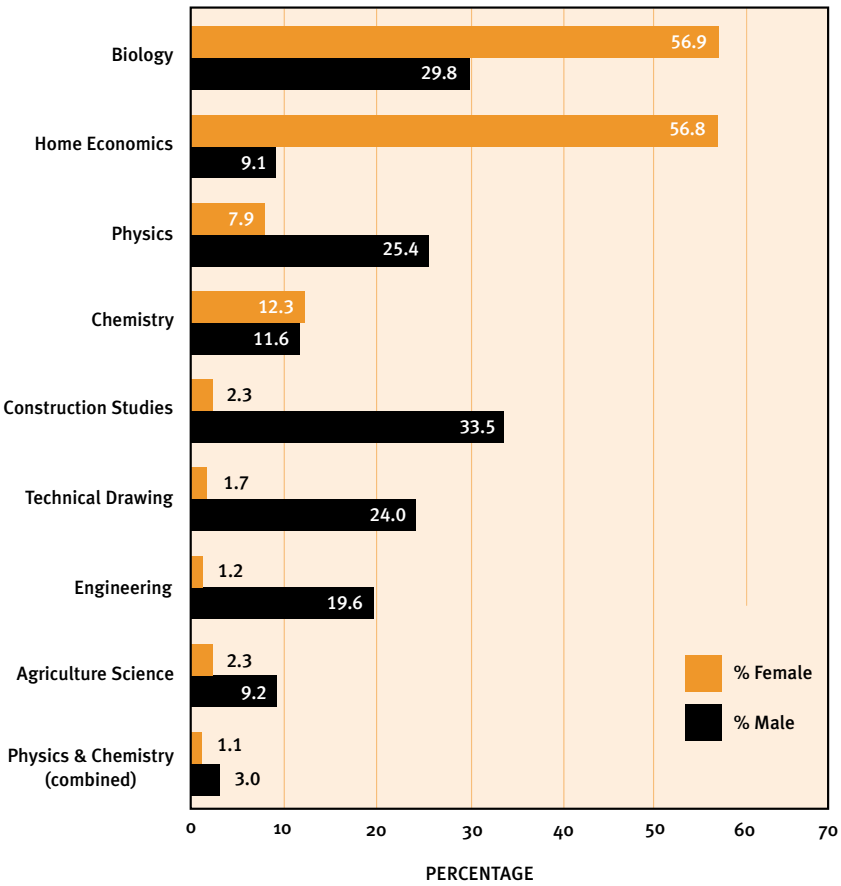
Source: Eurostat, LFS

16 At European level, a target has been set to achieve an EU average rate of no more than 10% early school leavers by 2010. The term "early school leaver" is used to refer to those aged 18-24 who have dropped out of school having attained no more than a lower secondary education and who are not partaking in further education or training. For consistency, this document will use the same definition for "early school leaver".

6.2 National Data on Leaving Certificate Subjects

According to 2001 data, the typical Leaving Certificate candidate in Ireland studied maths, 3 languages, one social studies subject (history, geography, art, music) and 2 from either technology/applied science, business or science. Examination of subject take-up shows a marked difference between males and females as highlighted in Figure 6.4.

FIGURE 6.4. PROPORTION OF GENDER COHORT[17] TAKING LEAVING CERTIFICATE SUBJECTS, 2000/2001



Source: Task Force on the Physical Sciences (2002)

Since the early 1990's, the take-up of science among second-level students has been declining. While 16% of Leaving Certificate students enrolled in chemistry in 1990, only 12% did in 2001. Also, enrollment for physics fell from 20% in 1990 to 16% in 2001. To tackle the fall-off in numbers opting to study the physical sciences at secondary and tertiary education, the Government set up a Task Force in 2000 to examine the issues involved. In 2002, a report was produced by the Task Force outlining a series of recommended policy actions. Work on their implementation is ongoing.

17 Participation rates computed using total number of male/female students taking Leaving Certificate maths to represent full cohort.

6.3 Summary and Key Issues

- In 2000, 74% of the Irish population at the typical age of graduation achieved a leaving certificate standard of education. This compares poorly against those countries benchmarked with Ireland ranked 11th out of 13 OECD countries. Given that as few as 13 of the 30 OECD countries submitted data on this indicator, it is likely that Ireland is being ranked among the top performers.

- For the percentage that does not attain an upper secondary education, it is important to ensure that these people are not left behind, with the risk of social exclusion that this may entail. Examination of the rate of early school leavers in 2002 ranked Ireland 7th out of 15 EU countries. 15% of 18-24 year olds were found to have dropped out of school with no more than a lower secondary education and were found not to be partaking in further education or training.

- Of primary concern is the need to reduce the early school leaver rate in line with the EU target of 10% by 2010 and to increase the graduation rate from upper secondary level particularly for males which was found to be much lower than for females and 7% below the EU average.

- Given that there will always remain a proportion of students who will drop out early, for this group, access to apprenticeships and further education is of vital importance as is encouragement to partake in these activities.

- Since the early 1990's the take-up of science subjects among second-level students has been falling. In light of growing concern in Ireland over a decline in take-up of maths, science and engineering studies at third-level and the positive relationship between the number of science subjects taken at leaving certificate and take-up of science and medical science fields of study in third level (see Section 9), it is important that students, particularly females, are encouraged to study more science subjects in secondary school.

Section 7 Apprenticeship

Apprenticeship is the most established form of work-linked training and is deeply rooted in the craft sector. It involves a mixture of both course work and practical experience. For those students with a more practical than academic bend, an apprenticeship provides an opportunity to gradually progress through vocational education to higher education.[18] Despite the push towards higher completion rates of upper secondary education in most OECD countries, apprenticeship remains an important and unique source of education and training.

7.1 National Data

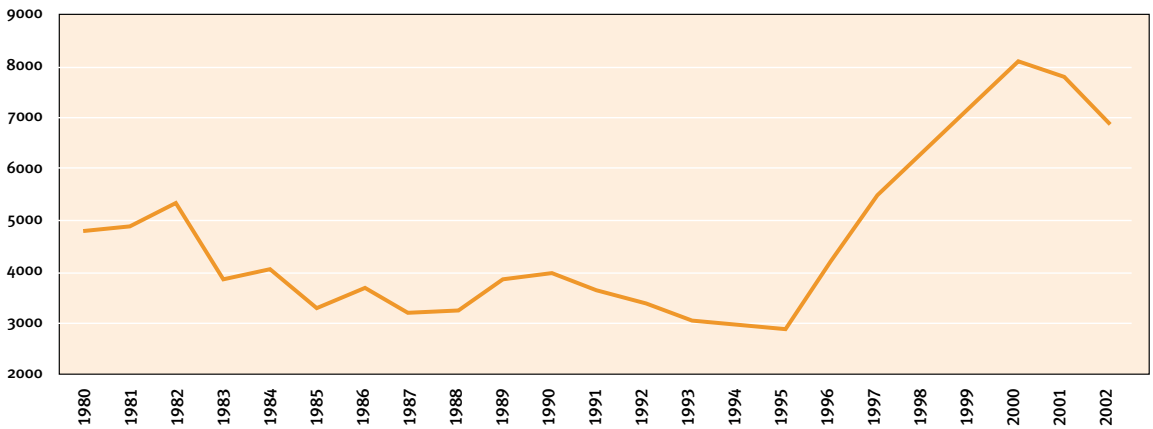
In Ireland, apprenticeships are normally completed in seven stages over a four year period. By end December 2002, there were approximately 25,700 people engaged in apprenticeships, equivalent to approximately 1.4% of the Irish workforce.

Registered Apprentices

Over the past two decades, the number of newly registered apprentices in Ireland has increased dramatically (see Figure 7.1). While the numbers registering for apprenticeships were on average falling over the period 1980 to 1995, between 1995-2000 there was a dramatic increase in the numbers registering. In 1995, there were approximately 2,900 newly registered apprentices. By 2000, this figure had grown to 8,000 indicating an average annual increase of 23% over this period. Over the past two years, the numbers registering for apprenticeships have begun to decline. In 2001, numbers fell by 3% and again in 2002 by 12%.

Each year, over 99% of registrars are male, which appears to be highly correlated with the range of apprenticeships being offered – largely in traditional manual trades. The average age of registrars is 17. Just over 50% of registrars have attained an upper secondary level education i.e. leaving certificate standard.

FIGURE 7.1 APPRENTICE REGISTRATIONS, 1980-2002



Source: FÁS (1999), Apprenticeship in Ireland and FÁS Apprenticeship Services Unit

18 Progression will be made possible once the NQAI National Framework of Qualifications is finalised and implemented.

Table 7.1 shows the breakdown of registrars in 2001 and 2002 across the 27 craft areas for which apprenticeships are available. The electrical, carpentry/joinery and plumbing crafts account for approximately 60% of registered apprentices. The top 10 trades according to numbers registered account for 87% of all apprenticeships.

TABLE 7.1: DISTRIBUTION OF APPRENTICESHIPS BY TRADE, 2001-2002

TRADE	2001	2002
Electrician	27.6%	26.2%
Carpenter/Joiner	21.4%	22.3%
Plumber	11.0%	10.5%
Motor Mechanic	6.3%	6.6%
Bricklayer	5.3%	6.4%
Fitter	4.1%	3.3%
Cabinet Maker	3.7%	3.4%
Metal Fabricator	3.1%	3.8%
Plasterer	2.6%	2.7%
Painter Decorator	1.9%	2.2%
Heavy Vehicle Mechanic	1.8%	2.8%
Vehicle Body Repair	1.5%	1.4%
Const. Plant Fitter	1.5%	1.2%
Sheet Metal Worker	1.4%	1.4%
Toolmaker	1.3%	0.6%
Aircraft Mechanic	1.1%	0.9%
Refrigeration	1.0%	1.1%
Agri. Mechanic	0.8%	1.0%
Electrical Instrumentation	0.5%	0.5%
Instrumentation	0.5%	0.3%
Wood Machinist	0.5%	0.3%
Floor/Wall Tiler	0.4%	0.6%
Printer	0.3%	0.1%
Originator	0.2%	0.1%
Network Technician	0.1%	0.0%
Bookbinder	0.1%	0.1%
Carton Maker	0.0%	0.0%

Source: FÁS Apprenticeship Services Unit

Completion Rates

According to 1999 data, the completion rate for apprenticeships is approximately 74% (Source: FÁS, (1999)). Of the 26% who drop-out, over half (58%) opt to leave the trade involved and a further third (37%) are made redundant. According to FETAC data, a total of 4,049 apprenticeship awards, classed as "National Craft Certificates", were awarded over the 12 months to June 2002. The NQAI envisages that, under the National Framework of Qualifications, it will be possible to use these certificates to progress to further or higher education. Overall, the success rate of access to employment for those completing apprenticeship is 95-96% (Source: FÁS, (1999)).

7.2 International Comparison

Due to a lack of comprehensive national data, international comparisons concerning apprenticeships are difficult to make. Table 7.2, however, presents 1997 data on apprenticeships in six countries. It shows that in Ireland on average 9% of the youth age cohort at the typical age of entry start apprenticeships. This is much lower than that of the other countries with 57% entering annually in Germany.

TABLE 7.2 COMPARISON OF APPRENTICESHIP IN SIX COUNTRIES, 1997

		IRELAND	GERMANY	AUSTRIA	DENMARK	NETHERLANDS (1998)	UK (1998)	
							MA*	ALL
Apprentice starts (annual)	(000)	6.1	587	40	23	57	87	n.a.
	As a % of cohort at typical age of entry	9%	57%	42%	41%	30%	14%	n.a.
Apprentices as share of 18 year olds**	Male	20%	46%	34%	29%	7%	n.a.	12%
	Female	0%	36%	22%	6%	5%	n.a.	6%
No. of Apprenticeship Occupations		27	356	252	86	515	76 Sectoral Frameworks	
Training Duration		4	2-4	2-4	3-5	2	unspecified	

*Note: *Modern Apprenticeship programme, for England and Wales only*
*** Data for Ireland sourced from FÁS Apprenticeship Services Unit*
Source: Ryan, P. (2000)

An assessment of the proportion of 18 year olds entering apprenticeships shows that on average 20% of 18 year old males enter apprenticeships in Ireland. Again, the rate in Germany is much higher at 46%. In terms of the percentage of 18 year old females entering apprenticeships (mainly in construction and related trades), Ireland performs the poorest with very few female apprentices each year (only 36 females newly registered in 2002) (see Table 7.2).

Compared with the five countries benchmarked, the number of apprenticeship occupations offered in Ireland is the smallest covering 27 occupations. Apprenticeships in the Netherlands cover 515 occupations.

7.3 Summary and Key Issues

- The importance of apprenticeships has been recognised by the ILO in a recent report, *World Employment Report 1998-1999,* which concluded that on average apprenticeship does enhance the employment prospects of young people and that this is as a result of the quality and relevance of the training given. This view is supported in the OECD *Employment Outlook* (1999) and *Education Policy Analysis* (1998) which confirms that youth unemployment is less in countries with strong apprenticeship traditions (e.g. Denmark).

- In Ireland, approximately 1% of the Irish workforce is engaged in apprenticeships or, given that 99% of those taking up apprenticeships are male, 2% of the male workforce. While numbers registering for apprenticeships have more than doubled since 1995, the past two years have seen a slight fall off in numbers. Given the value of apprenticeships and other work-and-study formats, it is important that efforts are made to reverse this trend and increase both male and female participation rates more in line with other European countries. This may be achieved through widening the scope of apprenticeship training to include more sectors outside the craft areas. At present, 10 of the 27 trades for which apprenticeships are available account for 87% of new registrations. In light of this, there is a need to examine the relevance of the remaining 17 trades compared with other possible apprenticeships such as in the area of services. The wide range of apprenticeships offered in other countries should be reviewed for their suitability in an Irish context. In addition, the possibility of attracting a greater number of mature students through the introduction of more flexible apprenticeship schemes should be examined.

- A key issue to consider is the availability of opportunities for apprentices to progress to further and higher education.

- In addition, the introduction of further work-and-study formats should be considered.

Section 8 Further Education

Further education refers to education which is post compulsory and of a vocational nature. By increasing the opportunities for students from disadvantaged backgrounds or who are less academically inclined to participate in the educational system together with facilitating progression to higher education, further education has a crucial role to play in meeting the growing demands of the learning society.

8.1 National Data

Data relating to further education is extremely limited. Since no international data is available, this section is based on national data. Because this data is by no means comprehensive and refers only to those awards made by the Further Education and Training Awards Council (FETAC)[19], it is important to approach this section with caution when drawing conclusions.

In Ireland, those engaged in further education and training can receive certificates from FETAC. These certificates are designed to provide recognition for achievements, access to employment, and transfer and progression to further education and training. Prior to FETAC's establishment in June 2001, these awards were made by NCVA[20], FÁS, CERT/NTCB, Teagasc and BIM.

Between June 2001 and June 2002, almost 60,000 awards were made by FETAC of which 51% were certificates[21]. The remaining 49% were credits awarded for the achievement of individual modules which can stand alone or build towards the achievement of a certificate (see Table 8.1). 59% of these awards fell under the NCVA awards, 34% under FÁS, 5% CERT/NTCB and 2% Teagasc. Both FÁS and the NCVA offer a wide range of courses to learners, while CERT/NTCB courses are more focused on the services sector and Teagasc courses on the agricultural sector.

19 Further education is also provided through the Vocational Education Committees' (VECs) Life-long Education programme and the Post leaving Certificate (PLC) programme.

20 National Council for Vocational Awards

21 Data for FÁS National Craft Certificates have been excluded from these calculations since they refer to Apprenticeships (see Section 7).

TABLE 8.1 SUMMARY OF AWARDS MADE BY FETAC, JUNE 2001 – JUNE 2002

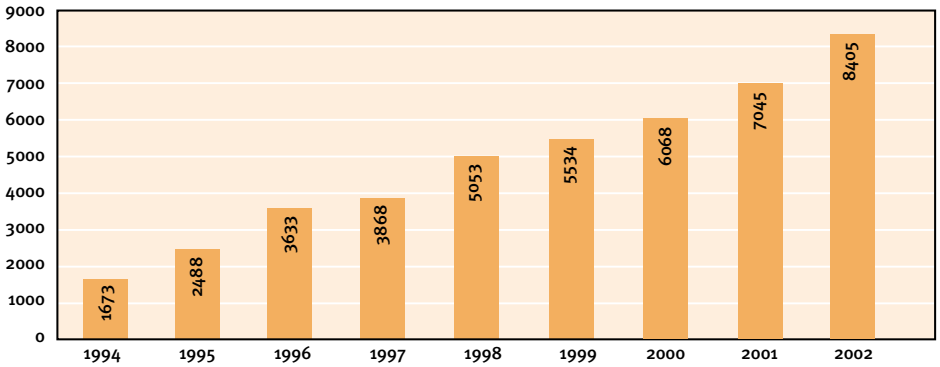
TITLE	CREDITS	CERTIFICATE	TOTAL NO. OF AWARDS
FETAC	**29276**	**34259**	**63535**
CERT/NTCB	**628**	**2158**	**2786**
ELEMENTARY CERTIFICATE	-	1001	1001
NATIONAL CRAFT CERTIFICATE	-	820	820
ADVANCED NATIONAL CERTIFICATE	-	337	337
SINGLE MODULES	628	-	628
FÁS	**1228**	**22907**	**24135**
IVS CERTIFICATE	-	3872	3872
NATIONAL SKILLS CERTIFICATE	-	371	371
NATIONAL CRAFT CERTIFICATE	-	4049	4049
SPECIFIC SKILLS CERTIFICATE	1228	14581	15809
CENTRE ASSESSOR QUALIFICATION		34	34
		.	
NCVA	**27410**	**7816**	**35226**
RECORD OF ACHIEVEMENT	27410	-	27410
NATIONAL FOUNDATION CERTIFICATE	-	444	444
NATIONAL VOCATIONAL CERTIFICATE LEVEL 1	-	24	24
NATIONAL VOCATIONAL CERTIFICATE LEVEL 2	-	7065	7065
NATIONAL VOCATIONAL CERTIFICATE LEVEL 3	-	283	283
TEAGASC	**10**	**1378**	**1388**
LEVEL 1	1	48	49
LEVEL 2	-	690	690
LEVEL 3	-	559	559
OTHER	-	81	81
SINGLE MODULE	9	-	9

Source: www.fetac.ie

The five broad occupational areas covered by National Vocational Awards are set out in Table 8.2. National Vocational Certificates are awarded at 4 different levels: foundation, Level 1, Level 2, and Level 3. In 2002, a total of 9,347 certificates were awarded (724 at Foundation Level, 62 at Level 1, 8405 at Level 2 and 156 at Level 3). Certification at Level 2 can be used by learners to apply for a higher education place in any of 17 Higher Education Institutes where, through the Higher Education Links Scheme, 2000 places have been made available in over 250 courses.

Since 1994, the number of Level 2 Certificates being awarded has risen substantially (see Figure 8.1). In 2002, 45% of Level 2 Certificates awarded were in the Business and Administration category (see Table 8.2). Over 75% of these certificates were awarded to females. Approximately 25% of those awarded Level 2 certificates were over 25 years of age and 60% under 21.

FIGURE 8.1 TOTAL NCVA CERTIFICATES AT LEVEL 2 AWARDED, 1994-2002



Source: www.ncva.ie

TABLE 8.2 NCVA LEVEL 2 CERTIFICATES BY BROAD DISCIPLINE, 2002

Broad Discipline	%
Art, Craft and Design	9%
Business and Administration	45%
Science, Technology and Natural Resources	13%
Services, Leisure and Tourism	26%
Communications, Performing Arts and General Studies	6%

Source: www.ncva.ie

To progress to higher education, a candidate must apply to the CAO and indicate whether they are currently undertaking or have previously attained an NCVA Level 2 certificate. Table 8.3 examines data on applicants to the CAO who, at the time of application, were either following a current or a previous NCVA Level 2 qualification. It shows that approximately 40% of those who were pursuing a Level 2 certificate wished to progress immediately to third level education. Of those who applied, only between 20-25% were offered a place. Of these, approximately 40-50% declined the offer.

TABLE 8.3 APPLICANTS TO CAO AND OFFERS RECEIVED, 2000-2002

	2000	2001	2002
APPLICANTS WITH NCVA LEVEL 2 CERTIFICATE			
Current	2671	2903	3325
Previous	868	932	1191
CAO OFFERS MADE AND ACCEPTED			
Offers	720	935	1130
Acceptances	376	492	683

Source: Mc Donagh & Patterson (2002)

8.2 Summary and Key Issues

- In the 12 months to mid-2002, almost 60,000 further education awards were made (excluding FÁS National Craft Certificates). Approximately 30,000 of these were certificates, with the remainder being awarded for modules completed.

- In 2002, approximately 8,400 Level 2 National Vocational Certificates were awarded. These allow direct transfer to higher educational institutes. Since 1994, the number of Level 2 Certificates being awarded has risen substantially. Over 75% of these certificates were awarded to females. Approximately 25% of those awarded Level 2 certificates were over 25 years of age. In 2002, approximately 40% of those awarded a Level 2 certificate applied for courses at higher educational institutes. 25% were successful but half these declined the offer.

- While data availability is set to improve as FETAC builds up its database and as the NQAI National Framework of Qualifications is introduced, at present it is difficult to formulate an informed view on the future direction which further education in Ireland needs to take. Nevertheless, there is certainty regarding the positive role which further education plays in the supply of future skilled workers in Ireland.

Section 9 Higher Education

Higher education is widely associated with national achievements in development, growth, competitiveness and welfare. It builds on the skills already required by students through the enhancement of their knowledge, skills, attitudes and abilities. It provides students with the necessary competencies not only to compete with each other in the marketplace but also to successfully engage in the economy, particularly since courses are increasingly being linked to industry needs. Given the need to continuously develop and update skills, higher education is important in producing a critical and reflective workforce with a drive towards life-long learning.

9.1 National Data

This section presents the most recent data on higher education currently available. Unfortunately there are some areas for which few current data exist. The availability and reliability of higher education statistics is set to improve once the HEA's is individualised student database is developed. The HEA is currently in consultation with the higher education institutions on the development of the database. The intention is that this database would provide a range of data on the higher education sector as a whole, in particular on enrolments and graduation, and would also provide the basis for the investigation of more complex issues relating to student progression, retention and other issues.

In 2001, there were approximately 158,500 students partaking in third-level courses in Ireland. 80% of these were engaged in full-time courses and 20% in part-time courses (see Table 9.1). 51% were undertaking courses in universities and 42% in Institutes of Technology (IoTs).

Over the past number of years, participation in higher education, across all types of institutes, has increased. Between 1996 and 2001, the number of students increased by 27%. Over this period, the numbers undertaking courses in universities increased by 26% and in IoTs by 31%.

TABLE 9.1 NUMBER OF STUDENTS IN FULL-TIME AND PART-TIME THIRD LEVEL EDUCATION BY TYPE OF INSTITUTION, 1995-2001

TYPE OF INSTITUTION	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01
FULL-TIME COURSES						
Aided by the Department of Education and Science						
HEA Institutions (aided)	55850	58090	61308	63737	66914	69254
Teacher Training	593	547	594	655	924	960
Technological Colleges	38130	41000	41909	43476	46424	48360
Other Aided Institutions	526	567	628	641	1434	1417
Aided by other Departments	863	758	1288	1249	1210	1192
Non-Aided	6700	6539	6455	6790	5489	5117
Total Full-Time	**102662**	**107501**	**112182**	**116548**	**122395**	**126300**
PART-TIME COURSES						
HEA Institutions	7926	8426	9365	10927	11305	11313
Technological Colleges	12230	12561	13157	13836	16504	17700
Other Aided Institutions	1754	1808	2917	3001	3660	3252
Total Part-Time	**21910**	**22795**	**25439**	**27764**	**31469**	**32265**
Total (Full-Time & Part-Time)	**124572**	**130296**	**137621**	**144312**	**153864**	**158565**

Source: Department of Education and Science, Annual Statistical Reports

As expected, examination of the numbers entering full-time third level education in Ireland confirms this upward trend, with entrant numbers having increased by 14% between 1996 and 2000. However, the period 2000-2001 saw a marginal decrease in total entrant numbers (see Table 9.2). Yet, this decrease was below the natural decrease in the proportion of students at typical age of entry to higher education. This is illustrated in Figure 9.1.

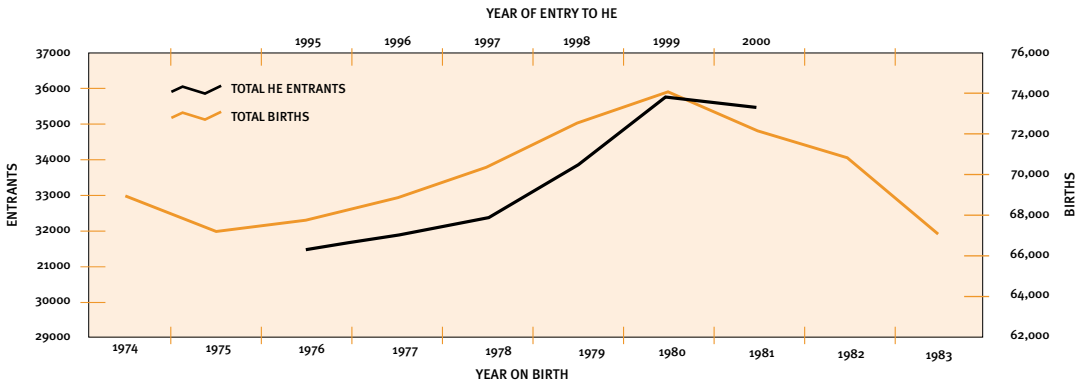
TABLE 9.2 NUMBER OF ENTRANTS TO FULL-TIME THIRD LEVEL COURSES IN INSTITUTIONS AIDED BY THE DEPARTMENT OF EDUCATION AND SCIENCE, 1996-2001

TYPE OF INSTITUTION	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01
HEA Institutions (Aided)	13460	13717	14868	15779	16505	16210
Technological Colleges	17474	17784	17102	17612	18401	18530
Other Aided Institutions	522	355	408	460	906	731
Total	**31456**	**31856**	**32378**	**33851**	**35812**	**35471**

Source: Department of Education and Science, Annual Statistical Reports

Assuming that students enter higher education at the age of 19, Figure 9.1 maps entrant rates between 1995 and 2000 to birth rates 19 years prior. Between 1995 and 1998 entrant and birth rates were broadly similar. In 1999, however, entrant rates were much higher than birth rates, reflecting an increase in entrants to higher education above and beyond the natural increase in the proportion of population at typical age of entry. This may be due to a higher proportion of mature students and foreign students entering, together with a higher proportion of school leavers. Similarly, between 1980 and 1981, when the birth rate fell by 2.6%, 19 years later the entrant rate to higher education decreased by only 1%. This result may reflect the improved innovativeness and attractiveness of the higher education system.

FIGURE 9.1 COMPARISON OF IRISH BIRTHS (1974-1983) WITH TOTAL NUMBER OF HIGHER EDUCATION ENTRANTS (1995-2000)



Source: Calculated by Author. Derived from Department of Education and Science, Annual Statistical Reports; CSO

Age

Table 9.3 shows the age distribution of those enrolled in full-time third level courses in 2001. Almost 70% were aged between 18 and 21 with the majority in universities aged 20 and in IoTs aged 19. This lower average age in the technological colleges may be due to shorter course durations.

Examination of the age of new entrants to higher education shows that in 1998, 50% were 18 years old, 21% were 19 years old and 19% were 17 years old (see Table 9.4). Since 1980, the proportion of entrants aged 18 and 19 has been increasing while the proportion aged 17 has more than halved. The decrease in 17 year olds may be attributed to students graduating from primary education at an older age or to a higher participation rate in the "transition year" of school.

TABLE 9.3 NUMBER OF STUDENTS ENROLLED IN FULL-TIME THIRD LEVEL COURSES BY AGE AND TYPE OF INSTITUTION, 2001

TYPE OF COLLEGE	UNDER 17	17	18	19	20	21	22	23	24	25 AND OVER	TOTAL
AIDED BY THE DEPT. OF EDUCATION											
HEA Institutions	0	1396	8630	13077	13851	10828	6653	3541	2175	9130	69254
Teacher Training Colleges	0	24	163	225	212	124	52	22	27	111	960
Technological Colleges	6	2604	9230	11247	9015	6370	3432	1718	1011	3727	48360
Other Aided Institutions	0	47	182	299	322	207	84	40	30	206	1417
Aided by other Departments	0	6	12	35	92	177	239	221	177	233	1192
Non-Aided	0	72	459	696	693	529	467	425	356	1420	5117
Total Third Level	**6**	**4149**	**18676**	**25579**	**24185**	**18235**	**10927**	**5967**	**3776**	**14800**	**126300**

Source: Department of Education and Science, Annual Statistical Report 2000/2001

TABLE 9.4 NEW ENTRANTS TO HIGHER EDUCATION BY COLLEGE TYPE AND AGE, 1980-1998

1998 NEW ENTRANTS						1992	1986	1980
AGE	UNIVERSITIES	INSTITUTES OF TECHNOLOGY	COLLEGES OF EDUCATION	OTHER COLLEGES	TOTAL	NEW ENTRANTS TOTAL		
				(%)				
Under 17	0.1	0.1	0.1	0.1	0.1	0.3	0.1	2.1
17	18.6	20	19.6	12	19.1	30.3	34	42
18	52	49.2	47.9	42.2	50.1	47	46.3	38.5
19	20.1	21.2	19.9	24.9	20.8	15.4	13.5	9.6
20	3.2	4	2.7	8.3	3.8	2.9	2.3	2.8
21	0.7	1.3	0.9	3.6	1.1	1	0.8	1.4
22	0.5	0.6	0.2	1.3	0.5	0.5	1.2	2.3
23-25	1.6	1.7	3.1	2.9	1.8	1		
26-30	1.3	0.9	1.8	2.2	1.2	0.6	0.4	0.7
31-40	1.1	0.7	2	1.3	0.9	0.6	0.3	0.5
Over 40	0.7	0.4	1.8	1.3	0.6	0.3	0.1	0.1
Total %	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Total Number	**14,623**	**15,683**	**1,052**	**1,366**	**32,724**	**25,134**	**17,159**	**13,360**

Source: Clancy (2001)

Gender

Data for 2000 shows 53% of new entrants to higher education to be female (see Table 9.5). IoTs were the only type of DES funded college where there was a higher proportion of males (53%) to females (47%) found. 94% of students entering Teacher Training Colleges were female.

TABLE 9.5 NEW ENTRANTS TO HIGHER EDUCATION BY GENDER AND COLLEGE TYPE, 2000

TYPE OF INSTITUTION	MALE (%)	FEMALE (%)	TOTAL
Aided by the Dept. of Education			
H.E.A. Institutions	39.9%	60.1%	16,210
Teacher Training Colleges	5.8%	94.2%	310
IOTs, D.I.T. and Other Technological Colleges	53.2%	46.8%	18,530
Other Aided Institutions	35.9%	64.1%	421
Aided By Other Departments	75.0%	25.0%	416
Non-Aided	45.8%	54.2%	1,880
Total	**46.8%**	**53.2%**	**37,767**

Source: Department of Education and Science, Statistics Section

Field of Study

Table 9.6 shows that in 1998, the top four fields of study in order of popularity were Technology, Commerce, Humanities and Science. The proportion of those entering higher education taking up studies in these areas was 26%, 21%, 16% and 12% respectively. Law and Agriculture were the study fields with the lowest entry rates.

Over the past two decades, there has been an upward trend in enrolments across all fields, however with entry to some fields growing more than others. Over the period 1992-1998, the largest growth was in the Medical Science field where entries more than doubled. This however is from a low base of students given the relatively new focus on this area. While Science take-up grew strongly between 1980-1986 (33%) and again between 1986-1992 (51%), the growth rate fell considerably over the period 1992-1998 (3%). Despite this slowdown in entry rates, international comparison shows Ireland to have produced a greater number of science graduates than the OECD average in 2000 (see Table 9.8). Despite Technology attracting the highest proportion of students, growth in take-up remains extremely strong (45% between 1992-1998).

TABLE 9.6 ENROLMENT BY FIELD OF STUDY, 1980-1998 (UNIVERSITIES ONLY)

FIELD OF STUDY	1980	1986	1992	1998	1980-86	1986-92 % CHANGE	1992-98
Humanities	1955	2720	4638	5302	39.1+	70.5+	17.2+
Art & Design	506	683	874	987	35+	24+	16.5+
Science	1898	2531	3817	3938	33.4+	50.8+	3.2+
Agriculture	230	265	417	547	15.2+	57.4+	31.2+
Technology	3364	4240	5856	8497	26+	38.1+	45.1+
Medical Sciences	620	626	780	1579	1+	24.6+	102.4+
Education	1175	916	541	1015	22-	40.9-	87.6+
Law	266	273	512	544	2.6+	87.5+	6.3+
Social Science	371	639	728	967	72.2+	13.9+	32.8+
Commerce	2736	3817	6090	7028	39.5+	59.5+	15.4+
Hotel, Catering & Tourism	239	449	667	1164	87.9+	48.6+	74.5+
Combined Studies			241	1024			324.9+
Total	**13360**	**17159**	**25134**	**32724**	**28.4+**	**46.5+**	**30.2+**

Source: Clancy (2001)

While the link between attainment levels at upper secondary level and field of study at third level is well known, the link between subject specialisation at leaving certificate and field of study is not as well documented. Table 9.7 shows the relationship between the average number of subjects taken in each of the subject groupings at leaving certificate and third level field of study.

On average, third level entrants had three languages, two subjects from the maths and science group, one from the business group, none from the technical group and one from the 'other' subject group. It was found that the majority of females (86%) and males (77%) took three languages and students with more than three languages were more likely to enroll to study law, humanities, combined studies and, in the case of females, medicine. Those with fewer language subjects were more likely to enroll to study art and design or technology.

Students who entered the medical sciences had an average of more than one extra math and science subject as did those who entered other science courses or agriculture. Students who enrolled in art & design, commerce or hotel, catering and tourism, or the humanities had fewer math and science subjects. Those who entered commerce, combined studies or social sciences tended to have more business subjects while those in the science or art & design area had fewer. Technical subjects were more common among technology students. Students who enrolled in art and design, hotel, catering and tourism, and the humanities had higher take up rates of 'other' subjects than other third level students.

TABLE 9.7 AVERAGE NUMBER OF SUBJECTS TAKEN AT LEAVING CERTIFICATE LEVEL BY SUBJECT GROUPING, GENDER AND THIRD-LEVEL FIELD OF STUDY, 1998

FIELD OF STUDY	AVERAGE NO. OF SUBJECTS STUDIED AT LEAVING CERTIFICATE									
	LANGUAGES		MATHS & SCIENCE		BUSINESS		TECHNICAL		"OTHER"	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
Humanities	3.07	3.16	1.86	1.86	0.81	0.52	0.16	0.02	1.44	1.57
Education	2.91	3.07	2.09	2.02	0.55	0.53	0.69	0.02	1.08	1.46
Art & Design	2.54	2.93	1.61	1.58	0.42	0.37	0.82	0.05	1.53	2
Social Science	2.91	3.03	1.92	1.92	0.9	0.63	0.32	0.01	1.19	1.5
Law	3.09	3.15	2.25	2.06	0.81	0.6	0.16	0.01	1.17	1.35
Commerce	2.87	3.02	1.74	1.73	1.27	1.03	0.26	0.01	1.06	1.25
Science	2.9	3.01	2.69	2.6	0.51	0.39	0.31	0.02	0.85	1.08
Technology	2.7	2.97	2.08	2.12	0.55	0.59	0.88	0.11	0.88	1.27
Medical Science	2.99	3.15	3.56	3.05	0.4	0.4	0.09	0.01	0.69	0.82
Agriculture	2.91	3.01	2.46	2.56	0.56	0.54	0.49	0.01	0.91	1.11
Hotel, Catering and Tourism	2.84	2.99	1.74	1.78	0.76	0.62	0.36	0.02	1.43	1.58
Combined Studies	3.02	3.17	1.98	1.89	1.06	0.83	0.14	0.02	1.07	1.17
Average	**2.85**	**3.08**	**2.12**	**2.06**	**0.08**	**0.69**	**0.59**	**0.05**	**1.05**	**1.42**

Source: Clancy (2001)

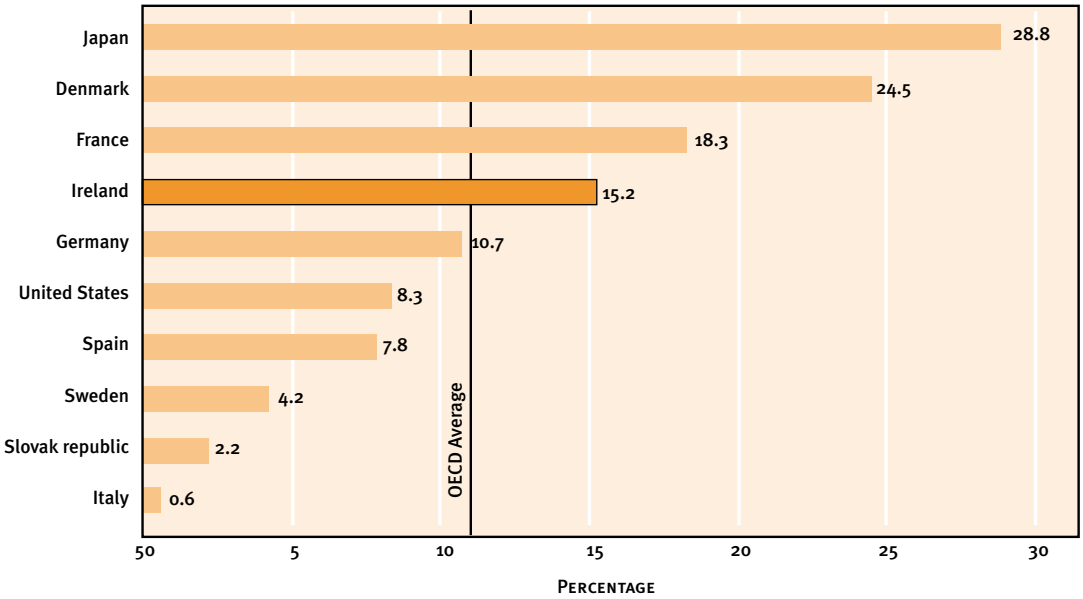
9.2 International Comparison

Graduation Rates

By examining tertiary graduation rates across OECD countries, it is possible to benchmark the current production rate of advanced knowledge by Ireland's educational system. While Section 5 highlighted the consequences of historic underinvestment in Ireland's education system on the stock of skilled workforce, the current flow of skilled population into the workforce, as measured by tertiary graduation rates, appears extremely positive.

Data for 2000 indicates that 15% of people in Ireland at the typical age of graduation completed the tertiary type B level of education (see Figure 9.2). This ranks Ireland 4th among the 10 countries benchmarked. While Ireland's score is above the OECD average of 11%, it is only half the graduation rate of the top ranked country, Japan.

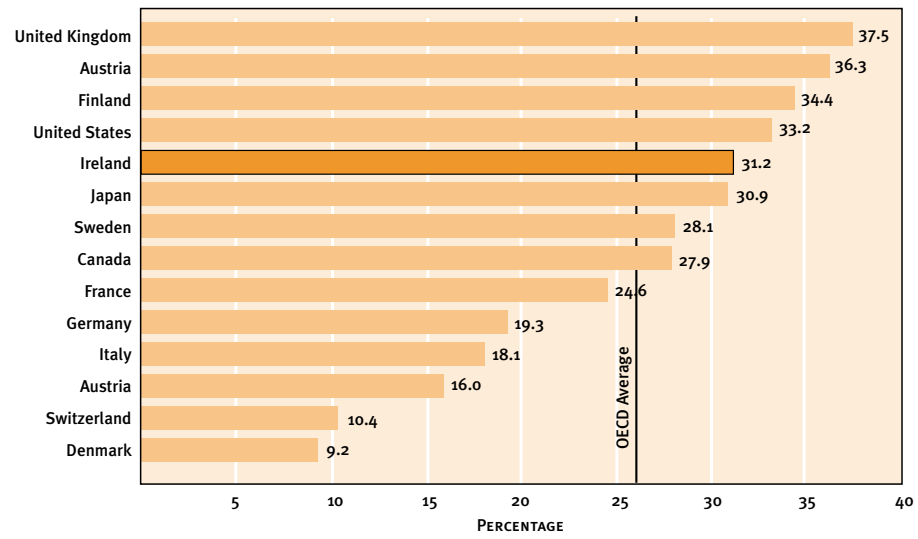
FIGURE 9.2 TERTIARY TYPE B GRADUATION RATES, 2000



Source: OECD (2002), Education at a Glance 2002

Compared to tertiary type B education, graduation rates for type A education are much higher in Ireland with 31% having graduated in 2000. Compared with 13 other countries, Ireland ranks 5th and lies above the OECD average of 26% (see Figure 9.3).

FIGURE 9.3 TERTIARY TYPE A GRADUATION RATES, 2000

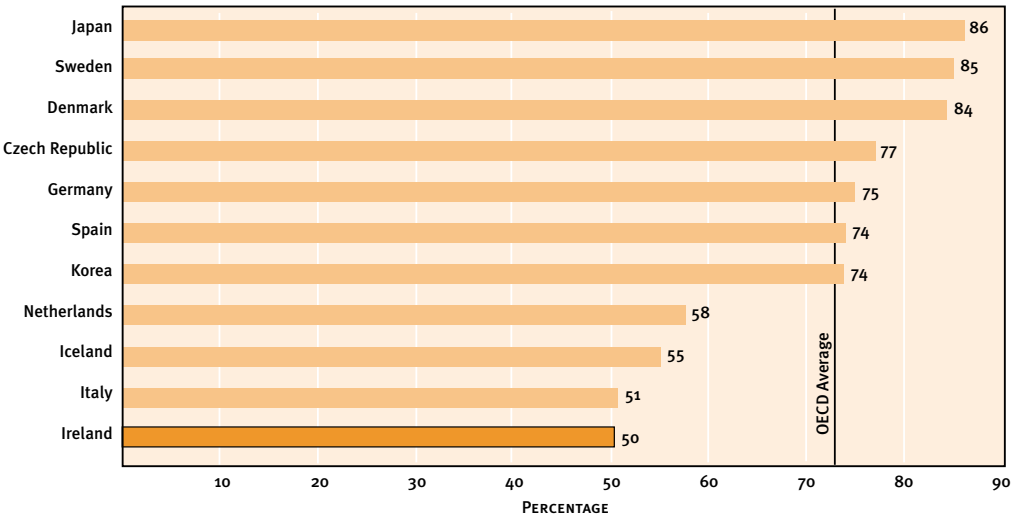


Source: OECD (2002), Education at a Glance 2002

Completion Rates

Tertiary completion rates measure the percentage of students who successfully complete their first degree (certificate, diploma), or inversely the rate at which students "drop out" before reaching that level. Based on 2000 data, survival rates of those entering Type B tertiary education in Ireland are significantly weaker than the OECD country average, with approximately half of the students dropping out. Figure 9.4 shows Ireland as ranking last out of 11 countries benchmarked.

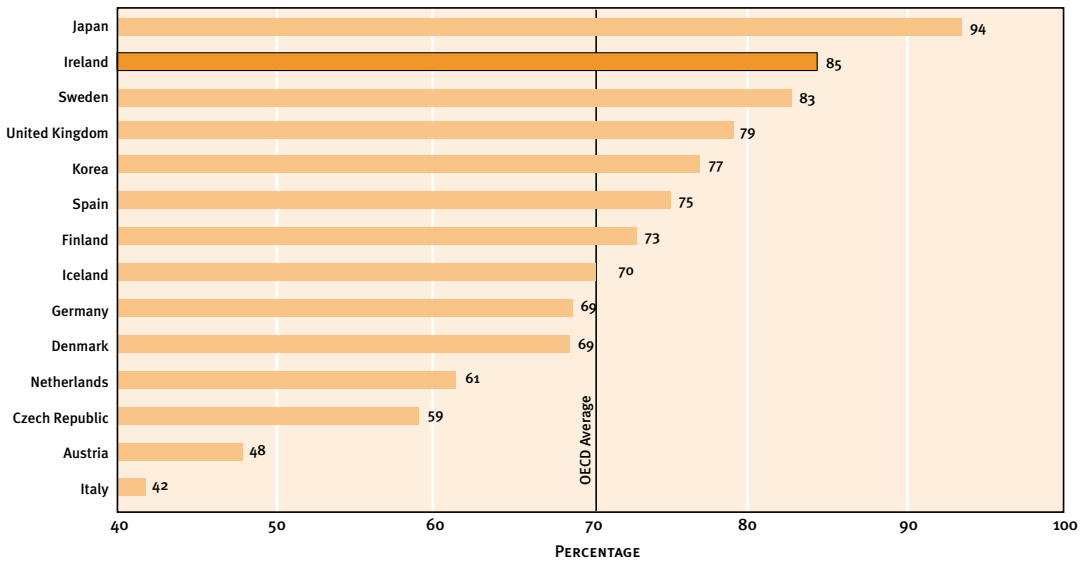
FIGURE 9.4 COMPLETION RATES IN TERTIARY TYPE B EDUCATION, 2000



Source: OECD (2002), Education at a Glance 2002

In contrast, assessment of Type A completion rates ranks Ireland 2nd out of 14 countries, with a completion rate of 85% (see Figure 9.5). This compares to an OECD average of 70%.[22]

FIGURE 9.5 COMPLETION RATES IN TERTIARY TYPE A EDUCATION, 2000



Source: OECD (2002), Education at a Glance 2002
**UK data excludes foreign students.*

22 In recent years, a number of reports examining the issue of tertiary completion rates in Ireland have been produced. See Morgan (2001) and Eivers et al. (2002) for most recent detailed analyses.

Discipline Mix

Table 9.8 assesses the discipline mix for both Type A (degree/masters) and Type B (diploma/certificate) graduates in 2000 and compares the percentage breakdown across disciplines with the OECD average for each.

Analysis of Type A graduates shows that in Ireland, there is a higher concentration of graduates in the humanities and arts discipline, with over a fifth of Irish higher education graduates having completed their studies in this field. There is relatively lower concentration on education and health and welfare than in the OECD as a whole. One caveat is that differences may exist in the way disciplines are classified across nations which may result in disparities.

Table 9.8 also shows that compared to Type B graduates, there were a lower proportion of Type A Irish graduates in 2000 involved in the engineering, manufacturing and construction discipline. In terms of Type B graduates, the most notable difference in Table 9.8 is the low proportion of Irish graduates from education and health and welfare courses in 2000.

TABLE 9.8 COMPARISON OF DISCIPLINE MIX OF IRISH GRADUATES WITH OECD AVERAGE, 2000

	TERTIARY TYPE A		TERTIARY TYPE B	
	IRELAND	OECD COUNTRY AVERAGE	IRELAND	OECD COUNTRY AVERAGE
	% OF ALL STUDENTS		% OF ALL STUDENTS	
Education	9	13.2	0.9	13
Humanities and Arts	20.2	12.6	6.9	7.6
Social sciences, business and law	30.8	33.5	31.5	25.8
Services	1.4	2.5	6	9
Engineering, manufacturing and construction	9.3	13.2	19.6	14.7
Agriculture	1.7	2.3	0.7	2.4
Health and welfare	7.8	11.5	8.9	18.8
Life sciences	6.9	3.1	2.7	-
Physical sciences	3.3	3	4.5	-
Mathematics and statistics	1.1	1.1	-	-
Computing	8.4	3.1	17.8	6.8
Not known or unspecified	0.2	0.9	0.5	0.9

Source: OECD (2002), Education at a Glance 2002

Despite the general decline in the take up of science subjects, Ireland performs well compared to other OECD countries in terms of numbers graduating in these subjects. Table 9.8 shows that in 2000, the percentage of students graduating from Life Science and Physical Science courses were above the OECD average. This is supported in Table 9.9 which compares the number of science and technology graduates per 1,000 20-29 year olds by country. Of the 11 countries benchmarked, Ireland is found to have the highest number of both male and female science and technology graduates per 1,000 20-29 year olds.

TABLE 9.9: SHARE OF GRADUATES IN SCIENCE AND TECHNOLOGY PER 1,000 INHABITANTS AGED 20-29, 2000

	PERCENTAGE					
	TOTAL	(RANK)	MALE	(RANK)	FEMALE	(RANK)
Ireland	**23.2**	**(1)**	**28.6**	**(1)**	**17.8**	**(1)**
United Kingdom	16.2	(2)	21.4	(3)	10.8	(2)
Finland	16	(3)	22.7	(2)	8.9	(3)
Sweden	11.6	(4)	15.5	(4)	7.6	(4)
US	10.2	(5)	13.8	(6)	6.5	(5)
Spain	9.9	(6)	13.2	(7)	6.4	(6)
Belgium	9.7	(7)	14.4	(5)	4.9	(7)
Germany	8.2	(8)	12.6	(8)	3.6	(9)
Austria	7.1	(9)	11.3	(9)	2.8	(10)
Portugal	6.3	(10)	7.8	(11)	4.9	(8)
Netherlands	5.8	(11)	9.5	(10)	2.1	(11)

Source: European Commission (2002b). Based on Eurostat Education and Population Statistics.

The proportion of tertiary qualifications awarded to females is examined in Table 9.10. It shows that in Ireland a higher proportion of awards are achieved by women for most disciplines than the OECD average. This applies to both tertiary Type A and B qualifications. While the proportion of females being awarded Type A qualifications for engineering, manufacturing and construction is higher than the OECD average, the proportion for Type B qualifications for the same discipline is considerably less than the OECD average.

Table 9.10 also shows that of all disciplines females are most under-represented in Type A and B engineering, manufacturing and construction with males accounting for 76% of Type A qualifications and 89% of Type B qualifications awarded.

TABLE 9.10 PERCENTAGE OF TERTIARY QUALIFICATIONS AWARDED TO WOMEN BY TYPE OF TERTIARY EDUCATION AND BY SUBJECT CATEGORY, 2000

	% OF ALL QUALIFICATIONS AWARDED TO WOMEN			
	TERTIARY TYPE A (INCLUDING ADVANCED RESEARCH QUALIFICATIONS)		TERTIARY TYPE B	
	IRELAND	OECD COUNTRY AVERAGE	IRELAND	OECD COUNTRY AVERAGE
Humanities, Arts and Education	69	70	61	70
Social Sciences, Business, Law and Services	57	52	61	60
Engineering, manufacturing and construction	24	23	11	19
Health and Welfare	75	68	93	83
Life sciences, Physical Sciences and Agriculture	53	47	60	42
Mathematics and Computer Science	41	30	50	31

Source: OECD (2002), Education at a Glance 2002

9.3 Summary and Key Issues

- While Ireland has been a late investor in education, in recent years educational performance has grown strongly leaving us well positioned among competitor countries. Over the past number of years, participation in higher education has been increasing. In 2001, a total of 158,500 students were engaged in third-level studies. Ireland is positioned well internationally, ranking 4th out of 10 countries for the percentage of those at typical age of graduation who graduate from IoTs and 5th out of 13 countries for universities. Yet, over the period 2000-2001, there was a marginal decline in the number of total new entrants. While this is below the natural decrease in the population at typical age of entry, entrant numbers still need to be monitored and measures to revert a downward trend considered. This may involve measures to increase the transfer rate from upper secondary education and further education to higher education or increasing availability of more flexible course arrangements.

- The introduction of a national higher education participation target should be explored. Recently, a 50% target for participation in higher education of those aged 18-30 was introduced in the recent UK White Paper on Higher Education (DfES, 2003).

- Overall, a majority of females were found to partake in higher education, although a majority of males were found in IoTs. The issue of increasing male participation overall and female participation in IoTs needs to be examined.

- An international assessment of completion rates shows Ireland to rank last of 11 countries for IoT completion rates and to rank considerably better for university completion rates (2th out of 14 countries). In view of these results, policy needs to focus on improving completion rates in IoTs. In addition, the difference between completion rates of both types of institutions needs to be looked at.

- In 1998, the top four fields of study in order of popularity were Technology, Commerce, Humanities and Science. Over recent years, the largest growth in entrants was in the Medical Science field with entries having more than doubled between 1992 and 1998. There was a marked decrease in the growth of Science take-up which grew by 3% over the period 1992-1998 compared with 51% growth in the period 1986-1992. Growth in take-up of Technology still remains extremely strong (45% between 1992-1998).

- Given the importance of science in a knowledge-based economy, the slowing growth in Science take-up needs to be examined closer. Yet, compared to other OECD countries, Ireland performs well in terms of Science graduates. In 2000, the percentage of students graduating from Life Science and Physical Science courses were found to be above the OECD average. In terms of the number of science and technology graduates per 1,000 population aged 20-29, Ireland ranked 1st out of 11 countries. This was both for the proportion of male and female graduates.

- The proportion of females graduating from the engineering, manufacturing and construction discipline was found to be considerably lower than that of males. Policy needs to examine measures to increase female participation in this area.

Section 10 Postgraduate Studies

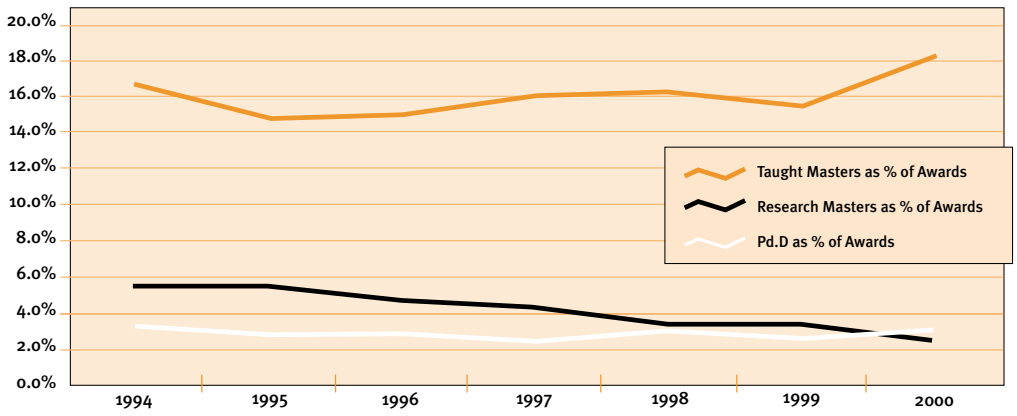
The drive towards a knowledge-based economy and competitive advantage means that there is an increasing need for society to innovate, adapt and advance ahead of others. Research and production of knowledge are seen as key to achieving these goals through the stimulation of innovation, and the development of new products, processes and services.

10.1 National Data

Over recent years, there has been an upward trend in the number of students in Ireland engaging in postgraduate courses, both full-time and part-time. In 2000, approximately 17,000 students were engaged in postgraduate studies with almost one third of these undertaking part-time studies. This was a 14% increase since 1998. The average age of students in Ireland undertaking Ph.Ds is estimated at 27, slightly below the EU average of 27.6 years.

As a proportion of total awards made at third level in 2000, Taught Masters, Research Masters and Ph.Ds accounted for approximately 18%, 2% and 3% respectively (see Figure 10.1). Between 1994 and 2000, the popularity of taught masters seems to have increased slightly, research masters to have fallen substantially, and Ph.D.s to have remained relatively unchanged.

FIGURE 10.1 POSTGRADUATE AWARDS AS A PROPORTION OF TOTAL AWARDS, 1994-2000



Source: HEA

Examining awards further by field of study shows that in 2000 43% of awards made for taught masters were in the Arts field, with the second highest proportion in Commerce (24%). 44% of all research awards (both research masters & Ph.Ds) were awarded in the Science field and 28% in the Arts field.

TABLE 10.1 POSTGRADUATE AWARDS AS A PROPORTION OF TOTAL AWARDS (UNIVERSITIES AND IOTS), BY FIELD OF STUDY, 2000

	NO. OF DEGREES AWARDED	TAUGHT MASTERS	RESEARCH MASTERS	PH.D.	RESEARCH AWARDS (% OF TOTAL)	DOCTORATE AWARDS (% OF TOTAL)
Arts	**5510**	1280	146	100	4.46%	1.81%
Science	**3190**	311	107	281	12.16%	8.81%
Commerce	**4388**	728	22	8	0.68%	0.18%
Med/Dent	**701**	198	13	18	4.42%	2.57%
Engineering	**1719**	162	59	50	6.34%	2.91%
Law	**357**	158	7	2	2.52%	0.56%
Agriculture	**200**	71	30	11	20.50%	5.50%
Veterinary Med	**78**	-	3	6	11.54%	7.69%
Architecture	**70**	25	-	-	0.00%	0.00%
Food Science	**126**	53	-	9	7.14%	7.14%
Total	**16339**	**2986**	**387**	**485**		
% of Total		**18.3%**	**2.4%**	**3.0%**	**5.34%**	**2.97%**

Source: HEA

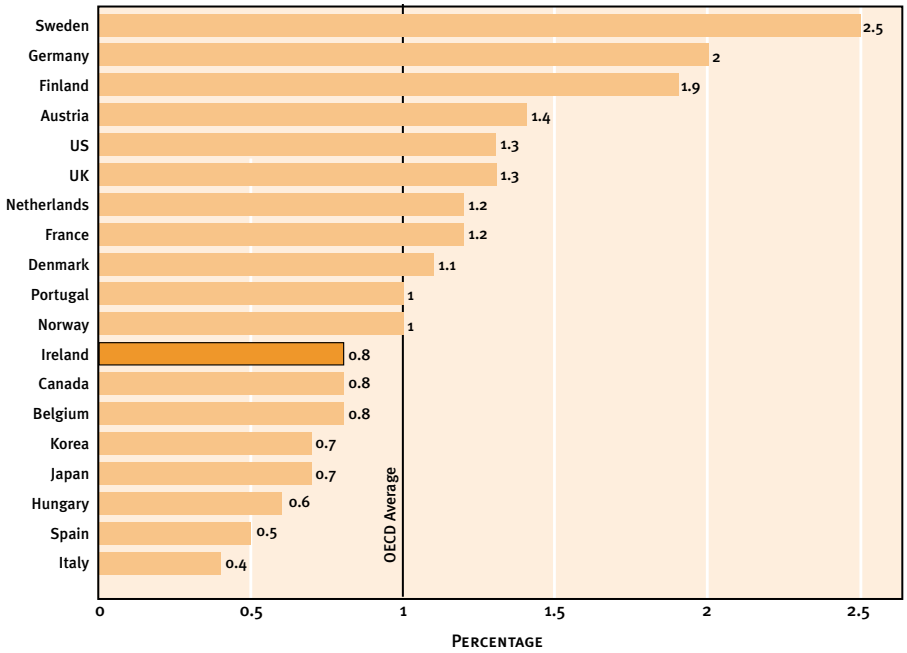
10.2 International Comparison

Although there is relatively little international data available relating to postgraduate studies, the OECD provides some information on the graduation rates from advanced research programmes (e.g. Ph.D.) across countries. Figure 10.2 highlights Ireland's position vis-à-vis the 19 countries benchmarked. On average 0.8% of the population at the typical age of graduating obtained an advanced research qualification in Ireland in 2000. This is just below the OECD average of 1% and ranks Ireland 12th of the 19 countries.

Ireland's ranking, while low at present, is expected to increase considerably in the next 2-3 years. Research funding in Ireland has been increasing considerably with initiatives such as PRTLI (Programme for Research in Third-Level Institutions) and SFI (Science Foundation Ireland) being launched. However, due to the inherent time-lag, the full effects of this funding will not be seen until at least 5 years after initial funding is allocated.

In addition, Ireland's economic success in recent years has possibly left research looking less attractive to potential entrants in light of abundant employment opportunities. As the economy begins to slow down, research will inevitably become more attractive.

FIGURE 10.2 GRADUATION RATES FROM ADVANCED RESEARCH PROGRAMMES, 2000



Source: OECD (2002), Education at a Glance 2002

10.3 Summary and Key Issues

- Over recent years, there has been an upward trend in the number of students in Ireland engaging in postgraduate courses. In 2000, there were approximately 17,000 postgraduate students. A taught masters has become more popular in recent years, while the popularity of a research masters has fallen substantially. The proportion of students undertaking Ph.D.s appears relatively unchanged. It is important to understand why there has been a reduction in the proportion of students engaging in research masters since it has possible implications for the transfer of students to Ph.Ds and the future supply of researchers in the labour market. One contributing factor may have been the relative attractiveness of employment opportunities in recent years.

- In 2000, over two fifths of awards made for taught masters were in the Arts field while over two fifths of all research awards (both research masters & Ph.Ds) were awarded in the Science field.

- In Ireland, 0.8% of the population at the typical age of graduating obtained an advanced research qualification in 2000. This lies just below the OECD average of 1%. At 12th position, Ireland ranks poorly compared to the 19 countries benchmarked. However, over the next 2-3 years, Ireland's position is set to increase as the effects of increased research funding emerge (e.g. PRTLI, SFI).

- Policy should focus on encouraging greater take-up of postgraduate studies, particularly research-related, given the important role it has to play in the economy in successfully achieving a competitive edge and leadership in the international market-place. The possibility of increasing non-national enrolment should be reviewed.

Section 11 Adult Participation in Continued Education and Training

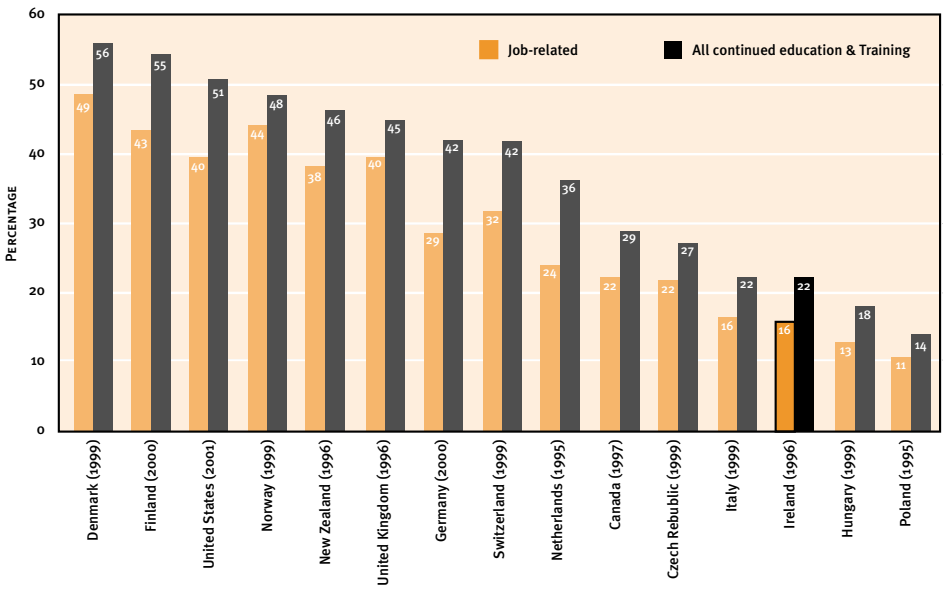
Given that a skilled workforce is essential for economic growth and considering the rate at which technologies, work practices and markets are developing, it is of vital importance that workforce knowledge, skills and competencies are maintained and expanded.

11.1 International Comparison

Table 11.1 assesses the extent to which adults participate in continued education and training in 15 OECD countries. It measures the proportion of 25-64 year olds who participated in some form of continuing education and training within a 12 month period. Data covers courses, private lessons, correspondence courses, workshops, on-the-job training, apprenticeship training, arts, crafts, recreation courses and any other organised and sustained education.

Only 22% of those aged 25-64 were found to participate in continued education and training in Ireland over a 12-month period, with 70% of these adults partaking in job-related training activities. Internationally, Ireland ranks 13th out of 15 countries.

FIGURE 11.1 ADULT PARTICIPATION RATE IN CONTINUED EDUCATION AND TRAINING DURING ONE YEAR BY TYPE OF TRAINING, 2001



Source: OECD (2002), Education at a Glance 2002

11.2 National Data on Part-Time Students

Given that the majority of part-time students are mature students (over 23 years), student engagement in part-time tertiary courses in Ireland can be used as a proxy for adult participation in education and training. In 2000/2001, over 32,000 students were engaged in part-time studies. According to the available data, numbers have increased by 50% since 1995 (see Table 11.1).

TABLE 11.1 NUMBER OF STUDENTS IN PART-TIME THIRD LEVEL EDUCATION BY TYPE OF INSTITUTION, 1995-2001

TYPE OF INSTITUTION	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01
	PART-TIME COURSES					
HEA Institutions	7926	8426	9365	10927	11305	11313
Technological Colleges	12230	12561	13157	13836	16504	17700
Other Aided Institutions	1754	1808	2917	3001	3660	3252
Total Part-Time	**21910**	**22795**	**25439**	**27764**	**31469**	**32265**

Source: Department of Education and Science, Annual Statistical Reports

In 2000/2001, a total of 1,372 students graduated from part-time courses at IoTs. This is equivalent to 7.5% of total IoT graduates (full- and part-time) for that year. Almost 800 of these were awarded certificates, 350 diplomas, and 225 degrees (Mc Donagh (2002)).

11.3 Summary and Key Issues

- While the number of adults engaging in tertiary education have doubled since 1995 (using part-time course numbers as a proxy), Ireland still ranks poorly (13th out of 15 countries) in terms of adult participation in continued education and training with only 22% of those aged 25-64 having participated in continued education and training over a 12-month period. Policy needs to address this poor performance and promote the participation in lifelong learning among adults, including those with low levels of qualifications.
- The need to continue to enhance adult participation in education was highlighted in the *White Paper on Adult Education* (DES, (2000)) which proposed a range of initiatives to enhance participation in education by adults in Ireland. These covered issues such as workplace education, higher education, support services, etc.
- Currently, there are limited data available detailing adult participation in education and training. It is important that issues such as the persistence, success, and retention of part-time students be explored, together with barriers to participation and regional comparisons.

Section 12 Employee Training

Ageing population and increasing rates of technological change will require workforce skills to be updated more frequently. Companies are increasingly recognising the importance of continued education in ensuring both internal and wider economic skills needs are met.

While there are little data available on company training, two surveys sponsored by Eurostat provide a basis on which broad international comparisons can be made. Data contained in these surveys, CVTS1[23] & CVTS2, relate to 1993 and 1999.

12.1 International Comparison

Table 12.1 examines Ireland's position in terms of company training of employees relative to other European countries. Ireland is ranked 7th out of 24 countries in terms of employee training in 1997, with nearly four-fifths of companies offering training to staff. This is below the near 100% level of Denmark and Sweden. Compared with the 1993 survey results, the percentage of companies engaging in training rose in 7 of the 8 countries surveyed. While there was strong growth in the Netherlands (32%) and Belgium (25%), Ireland grew by just 2% while Germany fell by 10%.

The size of the company was found to determine the extent to which training was undertaken with a higher proportion of medium-sized enterprises undertaking training than small enterprises, and a greater percentage of larger firms than medium-sized. In Ireland, the percentage of all small, medium-sized and large enterprises engaged in training was 75%, 98% and 100% respectively.

Comparing across sectors showed that the proportion of companies in Ireland offering training was highest at 90% for those in Manufacturing, Financial Intermediation, and Real Estate, Renting and Business Activities.

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TABLE 12.1 COMPANY PROVISION OF TRAINING, 1999

COUNTRY	% OF ALL FIRMS PROVIDING TRAINING		
	1993	1997	1993-1997
Denmark	87	96	+9%
Sweden	-	91	-
Netherlands	56	88	+32%
UK	-	87	-
Norway	-	86	-
Finland	-	82	-
Ireland	77	79	+2%
France	-	76	-
Germany	85	75	-10%
Luxembourg	60	71	+11%
Belgium	46	71	+25%
Austria	-	71	-
Czech Republic	-	69	-
Estonia	-	63	-
Latvia	-	50	-
Slovenia	-	50	-
Lithuania	-	40	-
Poland	-	40	-
Hungary	-	40	-
Spain	27	36	+9%
Bulgaria	-	28	-
Portugal	13	22	+9%
Greece	-	18	-
Romania	-	11	-

Source: Fox & Doyle (2001); Eurostat (2002), Statistics in Focus, Theme 3

Table 12.2 shows that Irish firms spent 2.4% of labour costs in 1997 on formal training courses. This ranks Ireland alongside France, with only Denmark, the Netherlands and Sweden performing better. Since 1993, the percentage of labour costs spent on training increased in all eight countries surveyed. In Ireland, it grew by 0.9%.

TABLE 12.2 TRAINING AS A PROPORTION OF COMPANY LABOUR COSTS, 1999

	% OF FIRMS LABOUR COSTS SPENT ON TRAINING		
	1993	1997	1993-1997
Denmark	1.3	3	+1.7%
Sweden	-	2.8	-
Netherlands	1.8	2.8	+1%
Finland	-	2.4	-
Ireland	1.5	2.4	+0.9%
France	-	2.4	-
Luxembourg	1.3	1.9	+0.6%
Czech Republic	-	1.9	-
Estonia	-	1.8	-
Norway	-	1.7	-
Belgium	1.4	1.6	+0.2%
Germany	1.2	1.5	+0.3%
Spain	1	1.5	+0.5%
Austria	-	1.3	-
Slovenia	-	1.3	-
Hungary	-	1.2	-
Portugal	0.7	1.2	+0.5%
Latvia	-	1.1	-
Bulgaria	-	1	-
Greece	-	0.9	-
Lithuania	-	0.8	-
Poland	-	0.8	-
Romania	-	0.5	-

Source: Fox & Doyle (2001); Eurostat (2002), Statistics in Focus, Theme 3

To quantify the effect of this training expenditure on employees, the actual proportion of all employees who attended training courses is examined in Table 12.3.

With 41% of all Irish employees having undergone training courses in 1999, ranking Ireland joint 6th out of 18 counties, only the Nordic countries and France faired better. 43% of female employees and 40% of male employees in Ireland had partaken in training.

Examination of data on training course hours spent per employee showed that on average, employees engaged in approximately 17 hours training, ranking Ireland 4th out of 14 countries surveyed. Denmark was ranked first with an average of 22 training hours per employee.

TABLE 12.3 PERCENTAGE OF EMPLOYEES ON TRAINING COURSES BY GENDER, 1999

	TOTAL	MALE	FEMALE
Sweden	61	60	61
Denmark	53	52	54
Finland	50	48	53
UK	49	50	46
Norway	48	40	66
France	46	48	44
Ireland	41	40	43
Belgium, Czech Republic, Netherlands	41	45	35
Luxembourg	35	34	39
Austria, Slovenia, Germany	32	-	-
Spain	25	25	26
Bulgaria, Estonia, Hungary, Latvia, Poland, Portugal, Greece	12-19	-	-
Lithuania, Romania	8-10	-	-

Source: Fox & Doyle (2001); Eurostat (2002), Statistics in Focus, Theme 3

12.2 Summary and Key Issues

- Ireland was ranked 7th out of 24 countries in terms of employee training in 1997, with nearly four-fifths of companies offering training to staff. On average, these companies spent 2.4% of labour costs on formal training courses. Since 1993, the percentage of companies offering training in Ireland grew by just 2%, however this is likely to grow substantially given recent initiatives from FÁS, Enterprise Ireland, the Task Force on Life-Long Learning, etc.

- 41% of all Irish employees participated in training courses in 1999, ranking Ireland 6th out of 18 counties. A higher percentage of female than male employees engaged in training. On average, each employee engaged in approximately 17 hours training, ranking Ireland 4th out of 14 countries surveyed.

- Data on employee training is very limited. In order to design effective policy, it is important that up-to-date reliable information is available. Nevertheless, given the importance of employee training, there is a need for policy to focus on increasing the number of companies engaged in training. Given Ireland's ageing population and increasing levels of training being undertaken in other countries, companies should be made aware of the benefits to be gained in providing training to staff. Issues such as the barriers faced by smaller companies in providing training, and imbalance in access to company training (i.e. regional, sectoral, and occupational) should be examined and reduced.

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Appendix 1
Benchmarking Subgroup Members

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Appendix 2
Adult Literacy Rates

In 1997, the OECD published a comparative study of literacy skills of adults aged 16-64 in twelve countries, Australia, Belgium (Flanders), Canada, Germany, Ireland, the Netherlands, New Zealand, Poland, Sweden, Switzerland (French- and German-speaking), UK and US using data from the International Adult Literacy Survey (IALS) conducted in 1995. Recognising that all individuals are literate to some degree, the survey aimed to assess the extent to which people could understand and use printed information in daily activities.

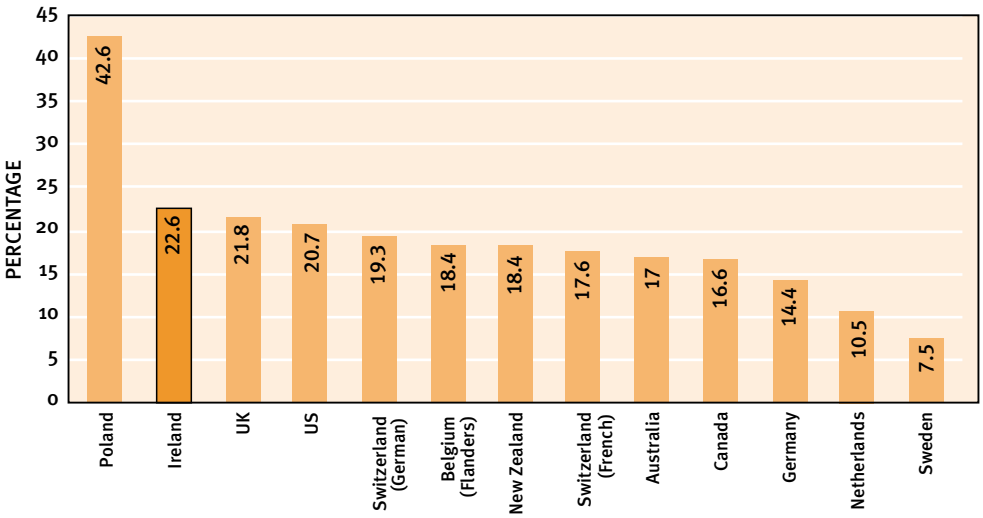
While the IALS survey data is somewhat outdated, it is the most recent data available. Currently, there are plans to conduct a second IALS survey, however this is not due to take place until 2004.

In the IALS survey, literacy rates were assessed according to the various written material encountered every day. These were grouped into 3 broad domains: prose literacy, document literacy and quantitative literacy. Literacy rates were also assessed according to five levels of complexity with Level 1 indicating very low literacy skills with readers at best being able to perform tasks which require them to locate a simple piece of information in a text.

While low literacy skills were found in a significant proportion of the general adult population in all countries surveyed, 25% of the Irish population (approximately 500,000 people) were found to be at this level. Figure A2.1 shows Ireland to have the second lowest prose literacy skills at Level 1 of the 12 countries surveyed.

A further 30% of the Irish population could not get beyond Level 2, which required survey participants to locate, comprehend and integrate two or more pieces of information in a piece of text which one might reasonably expect to encounter in everyday life.

FIGURE A2.1 PERCENTAGE OF ADULTS IN LITERACY LEVEL 1 (LOWEST) ON THE INTERNATIONAL ADULT LITERACY SURVEY (IALS PROSE SCALE), 1994



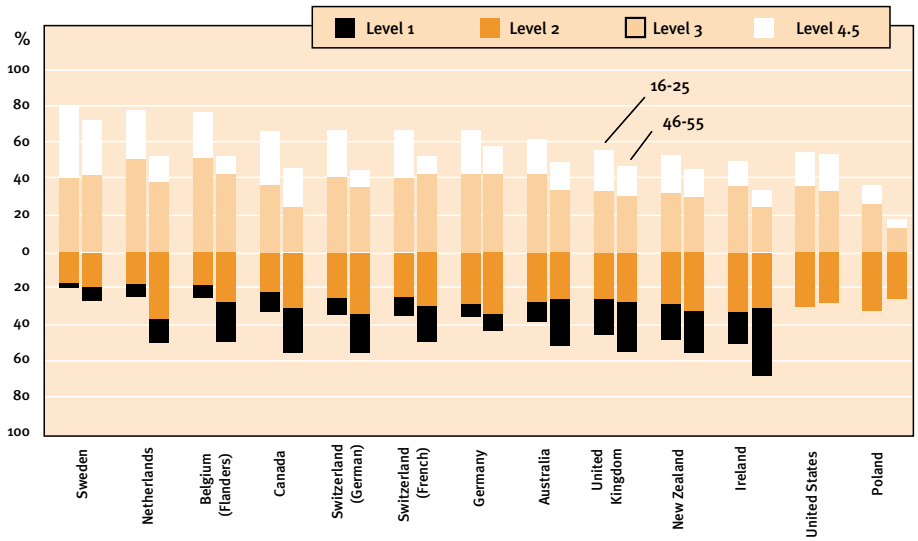
Note: Data for Ireland, UK, Belgium and New Zealand are for 1996.
Source: International Adult Literacy Survey, 1994-1995. Cited in: NCES (1998)

These findings are of major concern given that literacy at Level 3 is regarded by many experts as a minimum for coping with everyday life and work in OECD countries with most occupations requiring higher skills. Of further concern is the fact that those at Level 1 were found far more likely to be unemployed or in low paid employment. At this level, four times as many people were found to be in the lowest income group as in the highest income group.

Adult Literacy Skills by Age Group

Analysis of literacy skills by broad age group shows that, for each country, a higher proportion of 46-55 year olds have lower literacy skills than those aged 16-25 (see Figure A2.2). In Ireland, a higher percentage of 16-25 year olds have reached each of the literacy levels than 46-55 year olds indicating that literacy rates have been improving in Ireland over the last two decades. However, 17% of 16-25 year olds scored at Level 1, ranking Ireland 4th last out of the 12 countries benchmarked. This compares very poorly against countries such as Sweden and Germany (3% and 5% respectively).

FIGURE A2.2 LITERACY PROFICIENCY BY AGE, 1994



Notes: Countries are ranked by the proportion aged 16-25 who are at levels 3 and 4/5.
Data for Ireland, UK, Belgium and New Zealand are for 1996.
Source: International Adult Literacy Survey, 1994-1995. Cited in: NLS & Statistics Canada (1997)

Literacy Training

Given Ireland's low adult literacy rates, it is important that these people engage in literacy training. However, a NALA (National Adult Literacy Agency) survey[24] for the year 1994 -1995, which yielded returns from 72 adult literacy schemes, indicated that only 4,346 students were participating in literacy tuition i.e. less than 1% of adults with literacy difficulties which affect them in their everyday lives. A number of barriers hindering participation in literacy tuition were identified in the survey including time constraint, lack of information, perceived difficulty, negative memories, and poor self-esteem.

While the overall number of literacy students has risen substantially in recent years, there remain a large portion of adults with poor literacy skills who are not availing of tuition. In June 2002, almost 24,000 people were partaking in literacy training (Source: NALA). While this is an increase of almost fivefold since 1996, this still only accounts for approximately 5% of those with poor literacy skills.

Examination of participation data shows that 34% of those participating in literacy training in June 2002 were at literacy Level 1, 44% at Level 2, and 21% at Level 3. Over half the participants were between 25 and 44 years of age. Approximately 60% of participants were female with a female majority participating in each region. (Source: NALA).

Examination of educational attainment showed 54% of all participants to have attained a primary level education, 32% a lower secondary level education, 12% an upper secondary level education, and 2% a post-secondary level education. In keeping with this, over 50% of participants had left school by the age of 14. A breakdown of the economic status of participants showed that 41% were employed, 22% unemployed, 29% not in the labour force, and 8% to be asylum seekers / refugees. (Source: NALA).

Because of its nature, literacy tuition in the workplace presents significantly decreased barriers to literacy participation since it is both job-related and takes place during work time. Currently, there are 46 programmes with 7-8 learners in each, mainly men, being operated in Ireland with at least one programme in each of the 33 VECs within the Local Authorities. In June 2002, a total of 617 learners were partaking in workplace programmes. Although there is little data available, Ireland does not compare favourably internationally. Because there is no specific Government funding available to support workplace basic education, companies must bear the full cost of such programmes, with little take up so far.

24 NALA (1998), *Access and Participation in Adult Literacy Schemes,* Dublin

Recent Developments

Since the publication of the IALS comparative figures in 1997, Ireland has seen a number of key developments in the field of adult literacy.

- In 2000, the first Government White Paper on Adult Education, *Learning for Life,* (Source: DES (2002)) was published which set out a range of proposals and targets under the National Adult Literacy Programme (NALP). While the quantitative targets in the White Paper have been reached (e.g. the annual targets for learners have been surpassed by some 33%), many of the qualitative targets remain to be achieved.

- The budget for literacy has increased from €1.1m in 1997 to €17.9m in 2003. However, given the 2003 budget allocation of €5.6 billion for education, this is still relatively small compared to investment in mainstream areas of education with literacy receiving only €3 for ever €1,000 spent on education. Although international comparisons are difficult, there is evidence to suggest that the Irish Adult Literacy service is relatively under-resourced.

- In addition to the Budget allocation, a further €93.5m has been committed to literacy services in the National Development Plan (2000-2006) with a target of reaching 113,000 clients.

- In 2000 and 2001, the first and second *Read Write Now* series commissioned by the Department of Education and Science and NALA were broadcast on RTE 1. This consisted of 12 half-hour literacy programmes and proved to be the most watched educational TV programmes ever. In 2000 the programmes attracted an average weekly audience of 155,000. In 2001, the average weekly audience was 235,000 (DES). The new series which aims to build on this success is due to be launched May 2003.

Summary and Key Issues

- Adult literacy skills are extremely poor in Ireland, with over half the population found to be lacking the literacy skills needed to cope with everyday life in 1996. While there are signs that literacy skills are improving with a higher proportion of younger people having attained a higher literacy level than older people, 17% of those aged 16 to 25 were found to be at the lowest literacy level. This ranks Ireland 4th poorest for this age cohort among the 12 countries benchmarked. The availability of more up-to date data in the 2004 IALS will shed further light on this important issue.

- Given that the workforce underpins economic development and growth, and given that people with low literacy levels are more likely to be unemployed or in low paid employment, it is important that adult literacy rates in Ireland be increased. This would not only encourage those in employment to compete for promotions and provide those who are unemployed with a better chance at successfully obtaining a job, it would also serve to increase the size of the workforce by providing those currently outside the labour market with the confidence to participate.

- To improve Ireland's literacy rates, literacy training is required. While the availability of literacy tuition in Ireland has increased in recent years, June 2002 data shows as few as 5% with poor literacy skills partaking in literacy training. Policy should focus on measures to increase these participation rates. One means directly aimed at those in the workforce may be to expand the provision of workplace literacy tuition given its potential in overcoming barriers to participation.

- Given that a higher proportion of females are participating in literacy training than males, it is important to examine ways of increasing participation by males. In addition, measures to increase participation rates of the unemployed also require examination.