

OECD Education Statistics, Educational Attainment and Problems Associated with NI Comparisons

September 2007

Introduction

The Organisation for Economic Co-operation and Development (OECD) groups 30 member countries sharing a commitment to democratic government and the market economy and provides a unique forum for them to discuss, develop and refine economic and social policies. The members are: ¹

Australia	Austria	Belgium	Canada
Czech Republic	Denmark	Finland	France
Germany	Greece	Hungary	Iceland
Ireland	Italy	Japan	Korea
Luxembourg	Mexico	Netherlands	New Zealand
Norway	Poland	Portugal	Slovak Republic
Spain	Sweden	Switzerland	Turkey
United Kingdom	United States		

OECD Education Indicators

'Education at a Glance' is the OECD's annual publication on education, providing an array of indicators on education systems in the OECD's 30 member countries and in a number of partner economies. The latest publication was released on 18 September 2007. It contains 26 sets of indicators for 2005 (in most cases) covering the following four key areas (see Annex A for detailed list of indicators):²

- output of educational institutions and impact of learning
- investment in education
- access to education, participation and progression
- the school environment

Northern Ireland Comparisons

¹ "OECD Key Publications Catalogue", March 2002

² http://www.oecd.org/document/30/0,3343,en_2649_201185_39251550_1_1_1_1,00.html

Having discussed the issue of Northern Ireland comparative data at length with the Office for National Statistics (ONS), who are responsible for producing the UK indicators, and having searched largely in vain for available Northern Ireland comparative data in relation to the adult population, we have concluded that there are a number of problems associated with NI comparisons as follows:

- 1) None of the OECD indicators are readily available from NISRA or Government Departments. Apart from the Programme for International Assessment (PISA) indicators (for 15 year olds), the indicators generally have to be constructed from existing data in such a way as to take account of the different education systems and make international comparisons possible.
- 2) Apart from data relating to schools and PISA, the main sources of information for the UK indicators are the Labour Force Survey data held by Eurostat and data provided by the Higher Education Statistics Agency (HESA). A number of operations and adjustments have to be made to this data by the Office for National Statistics to produce the OECD indicators. This is carried out at a UK level, and would require a great deal more work to break down to regional level.
- 3) Eurostat use the Labour Force Survey data to produce EU comparisons, but we were only able to find a UK regional breakdown for one OECD indicator in relation to adult educational attainment (Indicator A1) – see Table 1 at Annex B.
- 4) Some of the data is simply not available in a comparable form for Northern Ireland (e.g. post-secondary graduation rates for indicator A2). ONS report particular problems in relation to data for ISCED levels 3 and 4 (see Annex C for ISCED level definitions).

Conclusion

Given the additional work that the further breakdown of UK indicators will involve to enable Northern Ireland comparisons, we should be selective when making requests to ONS to produce comparative indicators for Northern Ireland, and bear in mind that such comparisons will not be possible for many of the OECD education indicators. That said, ONS have expressed a willingness to help us in any way they can.

ANNEX A. List of Indicator Tables in 'Education at a Glance 2007'

A. The Output of Educational Institutions and the Impact of Learning

Indicator A1 To what level have adults studied?

- Table A1.1a. Educational attainment: adult population (2005)
- Table A1.2a. Population that has attained at least upper secondary education (2005)
- Table A1.3a. Population that has attained tertiary education (2005)
- Table A1.4. Fields of education (2004)
- Table A1.5. Ratio of 25-to-34-year-olds with ISCED 5A and 30-to-39-year-olds with ISCED 6 levels of education to 55 -to-64-year-olds with ISCED 5 A and 6 levels of education, by fields of education (2004)

Indicator A2 How many students finish secondary education?

- Table A2.1. Upper secondary graduation rates (2005)
- Table A2.2. Trends in graduation rates at upper secondary level (1995-2005)
- Table A2.3. Post-secondary non-tertiary graduation rates (2005)

Indicator A3 How many students finish tertiary education?

- Table A3.1. Graduation rates in tertiary education (2005)
- Table A3.2. Trends in tertiary graduation rates (1995-2005)
- Table A3.3. Percentage of tertiary graduates, by field of education (2005)
- Table A3.4. Science graduates, by gender (2005)
- Table A3.5. Relationship between motivation in mathematics at 15 years old (PISA 2003) and tertiary-type A graduation rates, by gender
- Table A3.6. Survival rates in tertiary education (2004)

Indicator A 4 What are students' expectations for education?

- Table A4.1a. Percentage of students expecting to complete different levels of education (2003)
- Table A4.2a. Percentage of students expecting to complete ISCED levels 5A or 6 by mathematics performance level (2003)
- Table A4.3a. Percentage of students expecting to complete ISCED levels 5A or 6 by gender (2003)
- Table A4.4. Odds ratios that students expect to complete ISCED levels 5A or 6 by socio-economic status (2003)
- Table A4.5. Odds ratios that students expect to complete ISCED levels 5A or 6 by immigrant status (2003)

Indicator A5 What are students' attitudes towards mathematics?

- Table A5.1. Means on students' attitudes towards mathematics, approaches to learning, and school-related indices (2003)
- Table A5.2a. Relationship between students' attitudes towards mathematics and mathematics performance (2003)
- Table A5.2b. Relationship between students' approaches to learning and mathematics performance (2003)
- Table A5.2c. Relationship between school-related indices and mathematics performance (2003)

Indicator A6 What is the impact of immigrant background on student performance?

Table A6.1a. Differences in mathematics performance, by immigrant status (2003)

Table A6.2a. Percentage of native students at each level of proficiency on the mathematics scale (2003)

Table A6.2b. Percentage of second-generation students at each level of proficiency on the mathematics scale (2003)

Table A6.2c. Percentage of first-generation students at each level of proficiency on the mathematics scale (2003)

Table A6.3. Index of instrumental motivation in mathematics and student performance on the mathematics scale (2003)

Indicator A7 Does the socio-economic status of their parents affect students' participation in higher education?

Indicator A8 How does participation in education affect participation in the labour market?

Table A8.1a. Employment rates and educational attainment, by gender (2005)

Table A8.2a. Unemployment rates and educational attainment, by gender (2005)

Table A8.3a. Trends in employment rates, by educational attainment (1991-2005)

Table A8.4a. Trends in unemployment rates by educational attainment (1991-2005)

Indicator A9 What are the economic benefits of education?

Table A9.1a. Relative earnings of the population with income from employment. (2005 or latest available year)

Table A9.1b. Differences in earnings between females and males (2005 or latest available year)

Table A9.2a. Trends in relative earnings: adult population (1997-2005)

Table A9.3. Trends in differences in earnings between females and males (1997-2005)

Table A9.4a. Distribution of the 25-to-64-year-old population by level of earnings and educational attainment (2005 or latest available year)

Table A9.5. Private internal rates of return for an individual obtaining an upper secondary or post-secondary non-tertiary education ISCED 3/4 (2003)

Table A9.6. Private internal rates of return for an individual obtaining a university-level degree, ISCED 5/6 (2003)

Table A9.7. Public internal rates of return for an individual obtaining an upper secondary or post-secondary non-tertiary education ISCED 3/4 (2003)

Table A9.8. Public internal rates of return for an individual obtaining a university-level degree, ISCED 5/6 (2003)

B. Financial and Human Resources Invested in Education

Indicator B1 How much is spent per student?

Table B1.1a. Annual expenditure on educational institutions per student for all services (2004)

Table B1.1b. Annual expenditure per student on core services, ancillary services and R&D (2004)

Table B1.2. Distribution of expenditure (as a percentage) on educational institutions compared

to number of students enrolled at each level of education (2004)

Table B1.3a. Cumulative expenditure on educational institutions per student for all services over the theoretical duration of primary and secondary studies (2004)

Table B1.3b. Cumulative expenditure on educational institutions per student for all services over the average duration of tertiary studies (2004)

Table B1.4. Annual expenditure on educational institutions per student for all services relative to GDP per capita (2004)

Table B1.5. Change in expenditure on educational institutions for all services per student relative to different factors, by level of education (1995, 2004)

Indicator B2 What proportion of national wealth is spent on education?

Table B2.1. Expenditure on educational institutions as a percentage of GDP by levels of education (1995, 2000, 2004)

Table B2.2. Expenditure on educational institutions as a percentage of GDP by level of education (2004)

Table B2.3. Change in expenditure on educational institutions (1995, 2000, 2001, 2002, 2003, 2004)

Table B2.4. Expenditure on educational institutions as a percentage of GDP by source of fund and level of education (2004)

Indicator B3 How much public and private investment is there in education?

Table B3.1. Relative proportions of public and private expenditure on educational institutions for all levels of education (1995, 2004)

Table B3.2a. Relative proportions of public and private expenditure on educational institutions, as a percentage, by level of education (1995, 2004)

Table B3.2b. Relative proportions of public and private expenditure on educational institutions, as a percentage, for tertiary education (1995, 2004)

Table B3.3. Trends in relative proportions of public expenditure on educational institutions and index of change between 1995 and 2004 (1995=100, constant prices), for tertiary education (1995, 2000, 2001, 2002, 2003, 2004)

Indicator B4 What is the total public spending on education?

Table B4.1. Total public expenditure on education (1995, 2004)

Table B4.2. Distribution of total public expenditure on education (2004)

Indicator B5 How much do tertiary students pay and what public subsidies do they receive?

Table B5.1a. Estimated annual average tuition fees charged by tertiary-type A educational institutions for national students (academic year 2004-2005)

Table B5.1b. Distribution of financial aid to students in tertiary-type A education (academic year 2004-2005)

Table B5.1c. Financial support to students through public loans in tertiary-type A education (academic year 2004-2005)

Table B5.2. Public subsidies for households and other private entities as a percentage of total public expenditure on education and GDP for tertiary education (2004)

Indicator B6 On what resources and services is education funding spent?

Table B6.1. Expenditure on institutions by service category as a percentage of GDP (2004)

Table B6.2. Expenditure on educational institutions by resource category and level of education (2004)

Indicator B7 How efficiently are resources used in education?

Table B7.1. Estimates of technical efficiency for primary and lower secondary public sector education

C. Access to Education, Participation and Progression

Indicator C1 How prevalent are vocational programmes?

Table C1.1. Upper secondary enrolment patterns (2005)

Table C1.2. Annual expenditure on educational institutions per student for all services, by type of programme (2004)

Table C1.3. Performance of 15-year-old students on the PISA mathematics scale by programme orientation (2003)

Indicator C2 Who participates in education?

Table C2.1. Enrolment rates, by age (2005)

Table C2.2. Trends in enrolment rates (1995-2005)

Table C2.3. Transition characteristics from age 15 to 20, by level of education (2005)

Table C2.4. Entry rates to tertiary education and age distribution of new entrants (2005)

Table C2.5. Trends in entry rates at the tertiary level (1995-2005)

Table C2.6. Students in tertiary education by type of institution or mode of study (2005)

Indicator C3 Who studies abroad and where?

Table C3.1. Student mobility and foreign students in tertiary education (2000, 2005)

Table C3.2. Distribution of international and foreign students in tertiary education by country of origin (2005)

Table C3.3. Citizens studying abroad in tertiary education, by country of destination (2005)

Table C3.4. Distribution of international and foreign students in tertiary education by level and type of tertiary education (2005)

Table C3.5. Distribution of international and foreign students in tertiary education by field of education (2005)

Table C3.6. Trends in the number of foreign students enrolled outside their country of origin (2000 to 2005)

Table C3.7. Percentage of tertiary qualifications awarded to international and foreign students, by type of tertiary education (2005)

Indicator C4 How successful are students in moving from education to work?

Table C4.1a. Expected years in education and not in education for 15-to-29-year-olds (2005)

Table C4.2a. Percentage of the youth population in education and not in education (2005)

Table C4.3. Percentage of the cohort population not in education and unemployed (2005)

Table C4.4a. Trends in the percentage of the youth population in education and not in education (1995-2005)

Indicator C5 Do adults participate in training and education at work?

Table C5.1a. Participation rate and expected number of hours in non-formal job-related education and training, by level of educational attainment (2003)

Table C5.1b. Expected number of hours in non-formal job-related education and training by age group and labour force status (2003)

Table C5.1c. Expected number of hours in non-formal job-related education and training, by level of educational attainment (2003)

D. The Learning Environment and Organisation of Schools

Indicator D1 How much time do students spend in the classroom?

Table D1.1. Compulsory and intended instruction time in public institutions (2005)

Table D1.2a. Instruction time per subject as a percentage of total compulsory instruction time for 9-to-11-year-olds (2005)

Table D1.2b. Instruction time per subject as a percentage of total compulsory instruction time for 12-to-14-year-olds (2005)

Indicator D2 What is the student-teacher ratio and how big are classes?

Table D2.1. Average class size, by type of institution and level of education (2005)

Table D2.2. Ratio of students to teaching staff in educational institutions (2005)

Table D2.3. Ratio of students to teaching staff, by type of institution (2005)

Indicator D3 How much are teachers paid?

Table D3.1. Teachers' salaries (2005)

Table D3.2. Change in teachers' salaries (1996 and 2005)

Table D3.3a. Adjustments to base salary for teachers in public institutions (2005)

Table D3.4. Contractual arrangements of teachers (2005)

Indicator D4 How much time do teachers spend teaching?

Table D4.1. Organisation of teachers' working time (2005)

Indicator D5 How do education systems monitor school performance?

Table D5.1. Evaluation of public schools at lower secondary education (2005)

Table D5.2. Use of information from school evaluation and accountability
of public schools (lower secondary education, 2005)

ANNEX B

Table 1. Educational Attainment of population aged 25-64 in 2005³

	% with lower secondary level of education or below ⁴	% with upper or post- secondary level of education (non- tertiary)	% with tertiary level of education ⁵
Australia	35	34	31
Austria	19	63	18
Belgium	15	39	46
Canada	15	39	46
Czech Republic	10	77	13
Denmark	17	50	34
Finland	21	44	35
France	33	42	25
Germany	17	58	25
Greece	40	39	21
Hungary	24	60	17
Iceland	31	40	31
Ireland	35	36	29
Italy	49	38	13
Japan	0	60	40
Korea	25	44	32
Luxembourg	28	46	27
Mexico	79	6	15
Netherlands	29	41	31
New Zealand	21	52	27
Norway	22	45	33
Poland	15	69	17
Portugal	74	14	13
Slovak Republic	15	73	13
Spain	51	20	28
Sweden	17	54	30
Switzerland	13	58	29
Turkey	73	17	10
United Kingdom	14	56	30
United States	13	49	38
OECD average	29	45	26

³ Sources: OECD 'Education at a Glance 2007'; 'Growing Regions, Growing Europe' Fourth report on economic and social cohesion, May 2007, Eurostat. See Annex C for OECD classifications.

⁴ i.e. NVQ level 1 (1-4 GCSE grades A-C) or less

⁵ i.e. NVQ level 4 and above

EU19 average	29	47	24
Wales	19	54	27
Scotland	16	51	33
Northern Ireland	26	48	26

ANNEX C. OECD/UNESCO Educational Attainment Levels

ISCED 0 - PRE-PRIMARY EDUCATION

Programs at level 0, (pre-primary) defined as the initial stage of organised instruction are designed primarily to introduce very young children to a school-type environment, i.e. to provide a bridge between the home and a school based atmosphere. Upon completion of these programs, children continue their education at level 1 (primary education).

ISCED 1 - PRIMARY EDUCATION OR FIRST STAGE OF BASIC EDUCATION

Programmes at level 1 are normally designed on a unit or project basis to give students a sound basic education in reading, writing and mathematics along with an elementary understanding of other subjects such as history, geography, natural science, social science, art and music. In some cases religious instruction is featured. The core at this level consists of education provided for children, the customary or legal age of entrance being not younger than five years or older than seven years. This level covers, in principle, six years of full-time schooling.

ISCED 2 - LOWER SECONDARY EDUCATION OR SECOND STAGE OF BASIC EDUCATION

The contents of education at this stage are typically designed to complete the provision of basic education which began at ISCED level 1. In many, if not most countries, the educational aim is to lay the foundation for lifelong learning and human development. The programmes at this level are usually on a more subject oriented pattern using more specialised teachers and more often several teachers conducting classes in their field of specialisation. The full implementation of basic skills occurs at this level. The end of this level often coincides with the end of compulsory schooling where it exists.

ISCED 3 - (UPPER) SECONDARY EDUCATION

This level of education typically begins at the end of full-time compulsory education for those countries that have a system of compulsory education. More specialisation may be observed at this level than at ISCED level 2 and often teachers need to be more qualified or specialised than for ISCED level 2. The entrance age to this level is typically 15 to 16 years. The educational programmes included at this level typically require the completion of some 9 years of full-time education (since the beginning of level 1) for admission or a combination of education and vocational or technical experience.

ISCED 3A: Programmes designed to provide direct access to ISCED 5A;

ISCED 3B: Programmes designed to provide direct access to ISCED 5B;

ISCED 3C: Programmes not designed to lead to ISCED 5A or 5B.

ISCED 4 - POST-SECONDARY NON TERTIARY EDUCATION

ISCED 4 captures programmes that straddle the boundary between upper secondary and post-secondary education from an international point of view, even though they might clearly be considered as upper secondary or post-secondary programmes in a national context. These programmes can, considering their content, not be regarded as tertiary programmes. They are often not significantly more advanced than programmes at ISCED 3 but they serve to broaden the knowledge of participants who have already completed a programme at level 3.

Typical examples are programmes designed to prepare students for studies at level 5 who, although having completed ISCED level 3, did not follow a curriculum which would allow entry to level 5, i.e. pre-degree foundation courses or short vocational programmes. Second cycle programmes can be included as well.

ISCED 4A: See text for ISCED 3

ISCED 4B: See text for ISCED 3

ISCED 4C: See text for ISCED 3

LEVEL 5 - FIRST STAGE OF TERTIARY EDUCATION (NOT LEADING DIRECTLY TO AN ADVANCED RESEARCH QUALIFICATION)

This level consists of tertiary programmes having an educational content more advanced than those offered at levels 3 and 4. Entry to these programmes normally requires the successful completion of ISCED level 3A or 3B or a similar qualification at ISCED level 4A. They do not lead to the award of an advanced research qualification (ISCED 6). These programmes must have a cumulative duration of at least two years.

ISCED 5A: Programmes that are largely theoretically based and are intended to provide sufficient qualifications for gaining entry into advanced research programmes and professions with high skills requirements.

ISCED 5B: Programmes that are practically oriented/ occupationally specific and are mainly designed for participants to acquire the practical skills and know-how needed for employment in a particular occupation or trade or class of occupations or trades, the successful completion of which usually provides the participants with a labour-market relevant qualification

ISCED 6 - SECOND STAGE OF TERTIARY EDUCATION (LEADING TO AN ADVANCED RESEARCH QUALIFICATION)

This level is reserved for tertiary programmes which lead to the award of an advanced research qualification. The programmes are therefore devoted to advanced study and original research and not based on course-work only. They typically require the submission of a thesis or dissertation of publishable quality which is the product of original research and represents a significant contribution to knowledge. They prepare graduates for faculty posts in institutions offering ISCED 5A programmes, as well as research posts in government, industry, etc.